The Sizewell C Project

8.5 Transport Assessment Addendum

Revision:	1.0
Applicable Regulation:	**Regulation 5(2)(q)**
PINS Reference Number:	**EN010012**

January 2021

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

SizewellC
Doing the power of good for Britain
EDF CGN

TRANSPORT ASSESSMENT ADDENDUM

CONTENTS

TABLES

PLATES

FIGURES

APPENDICES

1 INTRODUCTION

1.1 Introduction

1.1.1 NNB Generation Company (SZC) Limited (SZC Co.) submitted an application for a Development Consent Order (DCO) to the Planning Inspectorate under the Planning Act 2008 for the Sizewell C Project (referred to as the 'Application') in May 2020. The Application was accepted for examination in June 2020.

1.1.2 Since the submission of the Application, SZC Co. has continued to engage with the local authorities, environmental organisations, local stakeholder groups and the public to gather their responses to the Application. This process has identified potential opportunities for changing the Application to further minimise impacts on the local area and environment in many cases, whilst reflecting the further design detail that has come forward in preparation for implementation of the Sizewell C Project.

1.1.3 In addition to the proposed changes, SZC Co. has continued to develop the detail of its proposals and of the implementation of the Sizewell C Project (the 'project'), and has undertaken some additional environmental assessment work in response to continuing engagement with stakeholders. This 'Additional Information' adds to the information supporting the application and should assist interested parties in their understanding of matters.

1.1.4 The proposed changes and the Additional Information are described and assessed in a number of updates and Addenda to the originally submitted application documents.

1.2 Minor amendment to the Transport Assessment

1.2.1 The **Transport Assessment** (Doc Ref. 8.5) [APP-602] was submitted as part of the Application in May 2020. A minor amendment to that document was submitted to the Planning Inspectorate in November 2020, incorporating an update to the functionality of the internal document hyperlinks only. No textual changes were made. The updated report is referenced throughout this document as **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], although for all intents and purposes the contents of that document are identical to the version submitted in May 2020.

1.3 Purpose of the Transport Assessment Addendum

1.3.1 Since the submission of the Application, engagement on transport matters has continued with the stakeholders, including Suffolk County Council

(SCC), East Suffolk Council (ESC), Highways England and the emergency services. Based on this further engagement there have been refinements to such matters as the strategic and detailed traffic modelling and the mitigation associated with S106 funding contributions. Revisions have also been made to the Materials Management Strategy, as described in **Appendix 2.2.C** of the **Environmental Statement Addendum** (Doc Ref. 6.14), to take account of more up to date estimates of site materials volumes.

1.3.2 The purpose of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) is to summarise the Additional Information relevant to transport, which includes:

- Refined strategic transport and junction modelling based on revised inputs and assumptions developed in consultation with Suffok County Council;
- A new micro-simulation traffic model (VISSIM) developed to provide a more detailed forecast of journey times on the A12 between the A14 and Melton;
- A new sensitivity test, conducted using the strategic transport and A12 VISSIM models, to assess the impact of all heavy goods vehicles (HGVs) arriving from the south;
- Further information with regards to the proposed road safety improvements on the B1078 corridor, as identified in the **Transport Assessment** (Doc Ref. 8.5) [APP-602] to be secured through obligations in the Section 106 Agreement; and
- Further information with regards to a package of cycling, walking and public realm improvements in Leiston and Wickham Market, as identified in the **Transport Assessment** (Doc Ref. 8.5) [APP-602] to be secured through obligations in the Section 106 Agreement.

1.3.3 SZC Co. have also prepared an update to the **Freight Management Strategy** (Doc Ref. 8.18) which considers a range of options for the movement of construction related materials, and responds to feedback from stakeholders that sustainable modes must be optimised. This Addendum presents an assessment of the transport implications of Change 1 and Change 2 described in **Chapter 2** of the **ES Addendum** (Doc Ref. 6.14) and takes account of the latest construction materials volume estimates. The two changes are:

- The potential to operate additional trains, five days a week with the resilience of being able to operate on a sixth day if necessary (Change 1); and
- enhancement of the permanent beach landing facility (BLF) a second, temporary BLF for bulk material movements assumed to be operating at 70% of its campaign capacity (Change 2).

1.3.4 The preferred option would maximise sustainable movement of bulk material by limiting HGV movements to c. 40% of material movement. The number of HGVs forecast with this option would also reduce signficiantly from the May 2020 Application. The forecast 'typical day' HGV movements would reduce over the peak construction period from 325 HGVs (650 movements) to 250 HGVs (500 movements), and 'peak day' HGV movements from 500 per day (1,000 movements) to 350 (700 movements) per day.

1.3.5 The preferred option is assessed in this Addendum.

1.4 Transport Assessment Addendum structure

1.4.1 The remainder of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) is structured in the same way as the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. Chapters are as follows:

- **Chapter 2: Existing Conditions** – there is no material change to the existing conditions assessment which formed the basis of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].
- **Chapter 3: Policy** – summarises changes to key policies since the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].
- **Chapter 4: Transport Strategy** – describes the preferred option for the movement of construction materials explained in the updated Freight Management Strategy (Doc Ref. 8.18) and how their implications are assessed within this Addendum.
- **Chapter 5: Development Proposals** – describes proposed changes to development, and assesses their relevance to this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad).
- **Chapter 6: Modelling Approach** – summarises additional transport modelling activities which have been carried out in consultation with stakeholders since the Application submission.
- **Chapter 7: Trip Generation, Distribution and Mode Split** – summarises further evidence to support the Sizewell C traffic demand assumptions following on-going consultation with key stakeholders. The chapter also presents alternative Sizewell C traffic demand assumptions that arise from the updated construction materials estimates in the Materials Management Strategy.
- **Chapter 8: Strategic Modelling** – presents the refined strategic traffic model development (e.g. updated Local Model Validation Report) and updated strategic modelling results following on-going consultation with key stakeholders, as well as traffic modelling results from the assessment of the preferred option set out in the

Freight Management Strategy (i.e. four trains per day, enhanced BLF and new temporary BLF for bulk materials).

- **Chapter 9: Junction Modelling** – presents the detailed traffic modelling (junction models and micro-simulation traffic modelling) which has been refined in consultation with key stakeholders, and updated based on the refined strategic traffic modelling.

- **Chapter 10: Road Safety and Off-site Highway Improvements** – provides an overview of road safety improvements on the B1078 corridor between the A140 and Wickham Market / A12, which have evolved through consultation with stakeholders and are proposed to be implemented through the funding contribution identified in the Section 106 Heads of Terms in **Appendix 8.4J** of the **Planning Statement** (Doc Ref. 8.4) [APP-600] in the May 2020 Application.

- **Chapter 11: Rail Strategy** – summarises the rail aspects of the preferred option for the delivery of construction materials (Change 1), as described in **Chapter 2** of the **ES Addendum** (Doc Ref. 6.14) and the updated **Freight Management Strategy** (Doc Ref. 8.18).

- **Chapter 12: Walk and Cycle Strategy** – describes further development of the Public Rights of Way strategy. The chapter also describes the proposed pedestrian, cycle and public realm improvements at Leiston and Wickham Market which have evolved through consultation with stakeholders and were identified in the Section 106 Heads of Terms in **Appendix 8.4J** of the **Planning Statement** (Doc Ref. 8.4) [APP-600] in the May 2020 Application.

- **Chapter 13: Management Plans** – summarises work undertaken to progress the management plans through consultation with key stakeholders, and current status of the management plans.

- **Chapter 14: Conclusion** – sets out changes to the conclusions of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] in response to the Additional Information, and summarises the implications of the prefered option described in the updated the Freight Management Strategy (i.e. four trains per day, enhanced BLF and new temporary BLF for bulk materials).

2 EXISTING CONDITIONS

2.1 Introduction

2.1.1 Following a review of **Chapter 2** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], it was concluded that no material changes were required

to the chapter for the purpose of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad).

2.1.2 A summary of the non-material changes to **Chapter 2** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] are provided in the sections below. This reflects the evolution of the project since the DCO Application (May 2020) and provides additional detail on the existing conditions of the Sizewell C main development site and off-site associated development.

2.2 Local area context

2.2.1 Following the DCO Application (May 2020), an additional fen meadow compensation area was identified through further consultation with stakeholders. The additional fen meadow habitat proposed is at Pakenham in West Suffolk and will provide further mitigation for fen meadow loss within Sizewell Marshes SSSI as a result of the proposed development.

2.2.2 The site proposed comprises approximately 32ha of land located to the west of Fen Road, south of Thieves Lane / Broadway, east of Thurston Road and to the north of the Street. The site currently comprises a mix of grassland, fen meadow, rush pasture and drier grassland and is adjacent to the designated Pakenham Meadows SSSI.

2.2.3 Proposals for the fen meadow compensation area are described in **Chapter 2** of the **ES Addendum** (Doc Ref. 6.14), along with justification for the change.

2.2.4 The Pakenham site was not within the scope of assessment for the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], but has now been considered within this Addendum.

2.3 Pedestrian and cycle network

a) Fen meadow habitat at Pakenham

2.3.1 There are a number of public rights of way (PRoW) located within the Pakenham fen meadow habitat area. These include footpaths W-425/003/0 and W-425/002/0 which are within the Order Limits and would not be temporarily or permanently diverted or closed during the construction or operational phases of the proposed development. Footpaths W-425/005/0 and W-425/005/4 also lie within 1km of the proposed development. These PRoW are shown on the **Access and Rights of Way Plans** (Doc Ref 2.4(A)) and described in **Chapter 2** of the **ES Addendum** (Doc Ref. 6.14).

2.4 Bus network

2.4.1 **Section 2.6** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] provided a description of the existing local bus network. Since the DCO Application (May 2020) there have been a number of changes to existing bus routes and service frequencies. These changes are principally as a result of the COVID-19 pandemic. The bus timetable information provided within **Section 2.6** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] reflects the 'typical' bus network which operates in 'normal' (pre-COVID-19) conditions. It is expected that bus services will return to 'typical' conditions before the first future year assessment period (2023).

2.5 Rail network

2.5.1 **Section 2.7** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] provided a description of the existing rail network within the study area. Since the DCO Application (May 2020) there have been a number of changes to existing service frequencies. These changes are principally as a result of the COVID-19 pandemic. The train timetable information provided within **Section 2.7** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] reflects the 'typical' rail network which operates in 'normal' (pre-COVID-19) conditions. It is expected that train services will return to 'typical' conditions before the first future year assessment period (2023).

2.6 Summary

2.6.1 This section has provided a summary of the non-material changes to **Chapter 2** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] since the DCO Application (May 2020).

3 POLICY

3.4 Introduction

3.4.14 Following a review of **Chapter 3** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], it was concluded that no material changes were required to this chapter of the **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad). This chapter provides an update, where relevant, to reflect the evolution of the policy context since the DCO Application (May 2020).

3.5 Local policy and other relevant documents

a) Suffolk Coastal Local Plan (2020)

3.5.1 The Suffolk Coastal Final Draft Local Plan (period up to 2036) was described in **Chapter 3** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. The plan was in draft at the DCO Application (May 2020) stage, but has since been formally adopted.

3.5.2 The Suffolk Coastal Local Plan (Ref 1) was adopted on 23 September 2020 and applies to the part of East Suffolk formerly covered by the Suffolk Coastal district. The Suffolk Coastal Local Plan contains planning policies and site allocations which will be used to determine planning applications within the new council area. It sets out the level of growth which needs to be planned for and identifies where this should be located.

3.5.3 Policy SCLP7.1 of the Suffolk Coastal Local Plan – Sustainable Transport:

> *"encourages and facilitates the use of sustainable transport options where possible, and supports the efficient use of existing transport networks."*

3.5.4 Under the adopted Local Plan, Policy SCLP7.1: Sustainable Transport states that a development will be supported where:

- *"Any significant impacts on the highways network are mitigated;*
- *It is proportionate in scale to the existing transport network;*
- *All available opportunities to enable and support travel on foot, by cycle or public transport have been considered and taken;*
- *It is located close to, and provides safe pedestrian and cycle access to services and facilities;*
- *It is well integrated into and enhances the existing cycle network including the safe design and layout of new cycle routes and provision of covered, secure cycle parking;*
- *It is well integrated into, protects and enhances the existing pedestrian routes and the public rights of way network;*
- *It reduces conflict between users of the transport network including pedestrians, cyclists, users of mobility vehicles and drivers and does not reduce road safety; and*

- *The cumulative impact of new development will not create severe impacts on the existing transport network."*

4 TRANSPORT STRATEGY

4.1 Introduction

4.1.1 **Chapter 4** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], described the transport strategy for the Sizewell C Project. The chapter set out SZC Co.'s transport strategy for the construction and operational phases of the Sizewell C Project and the basis for the transport proposals.

4.1.2 Since the Application in May 2020, SZC Co. have carried out further refinement of the construction materials estimates and have updated the Material Management Strategy in **Appendix 2.2.C** of the **Environmental Statement Addendum** (Doc Ref. 6.14) which provides refined construction materials forecasts. Based on that further refinement, and to respond to feedback from stakeholders that sustainable modes must be optimised, SZC Co. propose two changes to the transport strategy. Those changes are described in **Chapter 2** of the **ES Addendum** (Doc Ref. 6.14) and the updated **Freight Management Strategy** (Doc Ref. 8.18). The changes are:

- operating four trains per day, five days a week with the resilience of being able to operate on a sixth day if necessary (Change 1); and
- enhancement of the permanent beach landing facility (BLF) a second, temporary BLF for bulk material movements assumed to be operating at 70% of its campaign capacity (Change 2).

4.1.3 This chapter describes these changes and provides a reference to the assessment described within this Addendum.

4.2 Potential for an increase in rail capacity

4.2.1 **Chapter 11** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] describes the proposed rail strategy for the DCO Application (May 2020). During early years, prior to opening of the green rail route, there would be two trains in and two trains out at night (23:00 – 06:00) on the East Suffolk Line.

4.2.2 During peak construction, when the green rail route is complete, there would be capacity for up to three return freight trains (six movements) at

the main development site, five days per week. **Table 11.2** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] showed the indicative timetable. The three trains would be likely to arrive or depart Sizewell C at night (defined as between 23:00 and 07:00), one in the morning and two late evening.

4.2.3 SZC Co. has continued to engage in detailed discussions with Network Rail and with freight operating companies to investigate options to increase the capacity for movement of construction materials by rail freight. This work is continuing but it has identified the potential to run four trains per day, which is SZC Co.'s preferred option described in the **Freight Management Strategy** (Doc Ref. 8.18). **Table 11.1** of this Addendum provides an indicative timetable for four trains per day. This change (Change 1) is assessed within this Addendum.

4.2.4 SZC Co. are also exploring the opportunity to run trains up to six days a week, and potentially to run a fifth daily train for a period of approximately two years during the construction phase when demand for bulk materials is at its highest.

4.2.5 As there is not enough capacity on the rail network overnight to operate the fifth train, it would need to run during normal operational hours. This may require the cancellation of a pair of passenger train services between Lowestoft and Ipswich as described in **Chapter 11** of this Addendum.

4.2.6 To accommodate four or more trains per day there may be a need for Network Rail to undertake improvements to level crossings on the East Suffolk line, in line with their duties as infrastructure manager, to mitigate the risk to level crossing users arising from more frequent services.

4.3 Enhancement of the permanent beach landing facility and construction of a new, temporary beach landing facility facility

4.3.1 The Application (May 2020) proposed a permanent BLF, for use in both the construction and operational phases of the nuclear power station to deliver the largest abnormal indivisible loads (AILs) to the main development site by sea.

4.3.2 The Application design limits the permanent BLF's capacity to receive more regular deliveries. The enhanced design would substantially increase the ability of the permanent BLF to receive AILs more regularly during the construction phase. It is proposed to construct a permanent grillage, which will remove the requirement for regular surveying and dredging of the BLF. Up to approximately 100 beach landings per annual campaign could be achieved in total.

4.3.3 To reduce the amount of construction material delivered by road, a new temporary BLF is proposed, primarily designed for the delivery of bulk construction materials, such as aggregate but could receive other materials such as marine tunnel segments. The main jetty of approximately 505m would support a conveyer which would carry off-loaded materials to the main development site. A single berth (for a single vessel) would be provided at its seaward end. Each vessel would typically deliver around 4,500 tonnes of cargo per delivery. Taking account of weather and practical efficiency limitations it is assumed that 70% of the theoretical capacity could be achieved, which would allow around 1,275,000 tonnes per year to be imported.

4.3.4 The enhancement of the permanent BLF and proposed, new temporary BLF form Change 2 and are described **Chapter 2** of the **ES Addendum** (Doc Ref . 6.14). These improvements to the marine landing capacity forms part of SZC Co.'s preferred option in the **Freight Management Strategy** (Doc Ref. 8.18).

4.4 Reduction in HGV movements

4.4.1 The preferred option described in the updated **Freight Management Strategy** (Doc Ref. 8.18) would provide additional rail and marine capacity, which would result in fewer heavy goods vehicle (HGV) movements by road when compared to the DCO Application (May 2020) and the HGV limits set out in the draft **Construction Traffic Management Plan** (Doc Ref. 8.7) [APP-608]. The preferred option described would result in the proportion of material moved on road by HGV reducing from the c. 60% assumed in the DCO Application to c. 40%. Even taking account of the increased material volumes in the Materials Management Strategy (**Appendix 2.2.C** of the **ES Addendum** (Doc Ref. 6.14)) the number of HGV movements would reduce significantly.

4.4.2 Early years movements would be unaffected (i.e. up to 300 HGV deliveries per day (600 two-way movements)). This is because at that stage the green rail route would not be in place and the temporary BLF would not have been constructed.

4.4.3 For the peak construction period, however, the daily HGV movements would reduce as follows:

- Typical day: a reduction from 325 HGV deliveries (650 HGV movements) to 250 HGV deliveries (500 HGV movements); and
- Busiest day: a reduction from 500 HGV deliveries (1,000 HGV movements) to 350 HGV deliveries (700 HGV movements).

4.4.4 This **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) provides an assessment of the transport effects of the changes described above on the basis of the reduced HGV movements.

5 MAIN DEVELOPMENT SITE AND ASSOCIATED DEVELOPMENT PROPOSALS

5.1 Introduction

5.1.1 **Chapter 5** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], described the proposals for constructing and operating Sizewell C. The chapter described development proposals at the main development site as well as off-site associated development.

5.1.2 Since the submission of the Application, SZC Co. have made a number of proposed amendments to the Sizewell C Project. The proposed changes from the Application and additional information, are described in the **Environmental Statement Addendum** (Doc Ref. 6.14), within the updated description of development in the relevant chapter:

- **Chapter 2** – Main development site;
- **Chapter 3** – Northern park and ride;
- **Chapter 4** – Southern park and ride;
- **Chapter 5** – Two village bypass;
- **Chapter 6** – Sizewell link road;
- **Chapter 7** – Yoxford and other highway improvements;
- **Chapter 8** – Freight management facility; and
- **Chapter 9** – Rail.

5.1.3 This chapter of the **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) considers where the proposed changes are relevant to the Transport Assessment.

5.2 Proposed changes to the main development site

a) Overview

5.2.1 **Section 2.2** of the **ES Addendum** (Doc Ref. 6.14) describes the proposed changes to the proposed development at the main development site. **Table 5.1** lists the proposed changes and notes where they are relevant to this Addendum.

Table 5.1 – Summary of changes to the main development site

Proposed change	Relevant to Transport Assessment
Potential to increase in the frequency of freight train movements to facilitate bulk material imports by rail. (Change 1)	Yes – reduced number of Heavy goods vehicle (HGV) movements assessed in **Chapter 8** and **Chapter 9** of this Addendum.
An enhancement of the permanent beach landing facility and construction of a new, temporary beach landing facility. (Change 2)	
Greater flexibility as to where certain Sizewell B facilities are relocated to potentially avoid the need for car parking on Pillbox Field. (Change 3)	No
Change to certain parameter heights and activities on the main development site. (Change 4)	No
Change to the location of the water resource storage area and the addition of flood mitigation measures to lower flood risk. (Change 5)	No
Change to the Site of Special Scientific Interest (SSSI) crossing design to a single span bridge with embankments. (Change 6)	No
Revisions to tree retention on the main development site. (Change 7)	No
Surface water removed early in the construction process to be discharged to the foreshore via a temporary outfall. (Change 8)	No
Change to the sea defence to make the scheme more efficient and resilient to climate change. (Change 9)	No

Proposed change	Relevant to Transport Assessment
Extension of the Order Limits to provide for additional fen meadow habitat at Pakenham as mitigation for fen meadow loss. (Change 11)	Yes - several access points could be used by vehicles involved in the construction of the fen meadow habitat area. PRoW routes implications discussed in **Chapter 12** of this Addendum.
Minor extensions and reductions of the Order Limits for works on the main development site and related sites (fen meadow mitigation sites and marsh harrier improvement sites). (Change 13)	No
A new bridleway link between Aldhurst Farm and Kenton Hills. (Change 15)	Yes – effects on walk and cycle assessment in **Chapter 12** of this Addendum.

5.2.2 Further detail of the proposed changes to the main development site that affect the Transport Assessment are summarised below.

b) Proposed changes to the infrastructure available for the delivery of materials to the main development site

5.2.3 SZC Co. has considered a range of options for the delivery of materials to the main development site as described in the updated **Freight Management Strategy** (Doc Ref. 8.18). SZC Co.'s preferred option would involve:

- operating four trains per day, five days a week with the resilience of being able to operate on a sixth day if necessary (Change 1); and
- enhancement of the permanent beach landing facility (BLF) a second, temporary BLF for bulk material movements assumed to be operating at 70% of its campaign capacity (Change 2).

5.2.4 The details of these proposed changes and the resultant reduction in HGV movements are summarised in **Chapter 4** of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) as well as in **Volume 1, Chapter 2** of the **ES Addendum** (Ref 6.14). The strategic highway modelling assumptions used to assess this preferred option scenario are described in **Chapter 7** of this Addendum and the assessment of the reduction in HGV movements is summarised in **Chapters 8** and **9**.

c) Sizewell B Relocated Facilities

5.2.5 A revised planning application for Sizewell B Relocated Facilities was submitted to Suffolk County Council in November 2020. The proposals include a change to the location of the Sizewell B outage car park (Change 3), which is now no longer proposed to be located in Pillbox Field; instead, the outage car park would be located on the main Sizewell B site and accessed via the existing Sizewell A/B access road. The changes are described in further detail in **Section 2.2** of the **ES Addendum** (Ref 6.14).

5.2.6 The proposed change to the Sizewell B relocated facilities would not alter the peak construction traffic flows or construction traffic routes considered in the Sizewell C Project's early years traffic modelling.

d) Fen meadow habitat at Pakenham

5.2.7 An additional site for creating fen meadow habitat is proposed at Pakenham in West Suffolk (Change 11). The site comprises approximately 32ha and is located west of Fen Road, south of Thieves Lane / Broadway, east of Thurston Road and north of the Street. The changes are described in further detail in **Section 2.2** of the **ES Addendum** (Ref 6.14).

5.2.8 Several access points could be used temporarily by vehicles involved in the construction of the fen meadow habitat area, although given the temporary and low level of use of the access points they have not been scoped into the junction modelling assessment. The **Land Plans** (**Book 2.1(A)**) and **Work Plans** (**Book 2.3(A)**) show the location of highway access locations.

5.2.9 A number of public rights of way (PRoW) cross the compensation area at Pakenham. None of these footpaths will be closed or diverted (either temporarily or permanently) during construction or operation of the proposed development. Assessment of this change is described in **Chapter 12** of this Addendum. The **PRoW Plans** are shown in **Book 2.4(A)**.

e) New bridleway link between Aldhurst Farm and Kenton Hills

5.2.10 The DCO Application (May 2020) included a proposed new combined footpath, cycleway and bridleway from Sizewell Gap to the northern end of bridleway 19 on Eastbridge Road.

5.2.11 It is now proposed to also create a new bridleway link between Aldhurst Farm and Kenton Hills (Change 15). A new uncontrolled crossing would be added on Lover's Lane, enabling users of the proposed combined

footpath, cycleway and bridleway through Aldhurst Farm to cross Lover's Lane. The new link would then run east as far as Kenton Hills.

5.2.12 The link would be constructed to bridleway standards, but during the construction of Sizewell C it would be available for use by pedestrians and cyclists only. This is because the new bridleway link would cross the secondary site access. An uncontrolled bridleway crossing in this location would have greater space and sightline requirements, and it is not considered suitable for an uncontrolled crossing for equestrians. Furthermore, during the construction of Sizewell C, the existing bridleway 19 would be closed to all users north of Kenton Hills and so the new bridleway link would not connect to additional bridleway routes. The bridleway link would be open only to pedestrians and cyclists during Sizewell C construction when it would serve to provide access to Kenton Hills.

5.2.13 During the operation of Sizewell C, the secondary site access would no longer be present and the original bridleway 19 would be reopened to all users, who would therefore be able to use the new bridleway link to reach bridleway 19 from Aldhurst Farm. The changes are described in further detail in **Section 2.2** of the **ES Addendum** (Ref 6.14) and **Chapter 12** of this Addendum. The **PRoW Plans** are shown in **Book 2.4(A)**.

5.3 Proposed changes to associated development sites

a) Overview

5.3.1 **Table 5.2** summarises the proposed changes to the associated development sites and whether they are relevant to this Addendum or not.

Table 5.2 – Summary of changes to the associated development sites

Proposed change	Relevant to Transport Assessment
Extension of landscaped bund, other minor changes at the southern park and ride, including a minor reduction of the Order Limits. (Change 10)	No
Extensions and reductions of the Order Limits for works on the Two village bypass, Sizewell link road and Yoxford roundabout as well as minor changes to the public right of way proposals at these sites. (Change 12)	Yes – change to PRoW around Walk Barn Farm assessed in **Chapter 12**
Minor reductions to the Order Limits of the northern park and ride, the A12/B1119 junction at Saxmundham and the A1094/B1069 south of Knodishall. (Change 14)	No

b) Two village bypass – Extension of the Order Limits and other changes

5.3.2 A number of changes are proposed to the Order Limits along the two village bypass. They do not affect the assessments made in this Addendum. The changes are described in **Chapter 5** of the **ES Addendum** (Doc Ref. 6.14).

5.3.3 The proposed route for the two village bypass remains largely unchanged from the Application. There are a number of changes to the highway design proposed along the two village bypass as a result of design development, but none of these affect this Addendum.

5.3.4 A change is proposed to the PRoW around Walk Barn Farm by proposing a diversion of the PRoW to the north of Walk Barn Farm. This is considered within **Chapter 12** of this Addendum.

c) Sizewell link road – Extension of the Order Limits and other changes

5.3.5 A number of changes are proposed to the Order Limits along the Sizewell link road. The proposed route for the Sizewell link road remains largely unchanged from the Application, however there are a number of changes to the highway design as a result of new information (e.g. topographical survey, ground investigation) gathered through design development. None of these changes affect the assessments made in this Addendum. The changes are described in **Chapter 6** of the **ES Addendum** (Doc Ref. 6.14).

5.3.6 There are a number of changes to the PRoW diversions on the Sizewell link road, which are considered within **Chapter 12** of this Addendum.

d) Yoxford roundabout and other highway improvements – Extension of the Order Limits and other changes

5.3.7 A number of changes are proposed to the Order Limits around the Yoxford roundabout and other highway improvement schemes. Those changes are described in **Chapter 7** of the **ES Addendum** (Doc Ref. 6.14). None of these changes affect this Addendum.

6 MODELLING APPROACH

6.1 Introduction

6.1.1 **Chapter 6** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] described the traffic modelling approach used to assess the proposed

development. Since that assessment was prepared, SZC Co. has continued consultation with stakeholders, and adopted a number of changes to the traffic modelling approach. This chapter of the **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) describes those changes.

6.1.2 Two forms of traffic modelling were undertaken to inform the Development Consent Order ('DCO') Application (May 2020): strategic highway assignment modelling, and detailed traffic modelling (standalone junctions and microsimulation). Refinements and changes to the modelling approach are summarised in the following sections.

6.2 Strategic modelling approach

6.2.1 Some of the strategic highway assignment model inputs and assumptions have been refined following further engagement with stakeholders such as Suffolk County Council, East Suffolk Council and Highways England. The strategic highway assignment model has also been used to assess the implications of the potential changes to rail (Change 1) and marine capacity (Change 2), which would results in fewer heavy goods vehicle (HGV) movements, associated with the preferred option set out in the updated **Freight Management Strategy** (Doc Ref. 8.18). These model inputs associated with these changes are described in **Chapter 7** and assessed in **Chapter 8** of this addendum. However the strategic highway assignment modelling approach as set out in **Chapter 6** and **Plate 6.2** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] has not changed in a material way.

6.3 Detailed traffic modelling approach

6.3.1 Further refinements have been applied to the detailed and standalone traffic models following further engagement with Suffolk County Council and their appointed technical consultants. Detailed traffic modelling was also revised using refined strategic traffic model flows. Detailed traffic model refinements and updated results are presented in **Chapter 9** of this addendum (Doc Ref. 8.5(A)Ad).

6.3.2 In addition, SZC Co. has now undertaken detailed traffic microsimulation modelling (VISSIM) of the A12 between the A14 Seven Hills interchange and the A1152 Woods Lane roundabout at Melton to inform a detailed assessment of traffic implications of the proposed development on the A12 corridor. The VISSIM assessment was undertaken for 2023 Early Years and 2028 Peak Construction forecast years for both AM (06:00-09:00) and PM (15:00-18:00) peak periods. The A12 corridor VISSIM model has also been used to assess the effects of proposed Changes 1 and 2 and the resultant reduction in HGV movements during peak

construction. The development of the VISSIM model and results are discussed in **Chapter 9** of this addendum (Doc Ref. 8.5(A)Ad).

7 TRIP GENERATION, DISTRIBUTION AND MODE SHARE

7.1 Introduction

7.1.1 **Chapter 7** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] described the trip generation, distribution and mode share assumptions used in the strategic transport modelling assessment for the proposed development. Since that assessment was complete, engagement has continued with key stakeholders such as Suffolk County Council, East Suffolk Council and Highways England. Through these discussions additional information was requested to support the traffic modelling assumptions and, in some cases, refinements to the modelling assumptions have been adopted.

7.1.2 This chapter of the **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) describes refinements to the Sizewell C traffic generation, distribution, and mode share assumptions that informed the strategic traffic modelling results reported in **Chapter 8** of this addendum, and subsequent detailed and standalone junction modelling assessments described in **Chapter 9** of this addendum. Model refinements are summarised in **Section 7.2** for peak construction (2028) and **Section 7.3** for early years (2023) construction. Further detailed information is provided in **Appendix 7A** of this chapter.

7.1.3 **Section 7.4** also summarises the reduced heavy goods vehicle (HGV) movements that would result from the additional rail and marine capacity, associated with the preferred option comprising proposed changes 1 and 2 set out in the updated **Freight Management Strategy** (Doc. Ref. 8.18).

7.1.4 Other additional information that has been requested by Suffolk County Council to support the Sizewell C traffic assumptions that informed the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], is provided in **Appendix 7B** and **Appendix 7C** of this chapter.

7.2 Peak construction

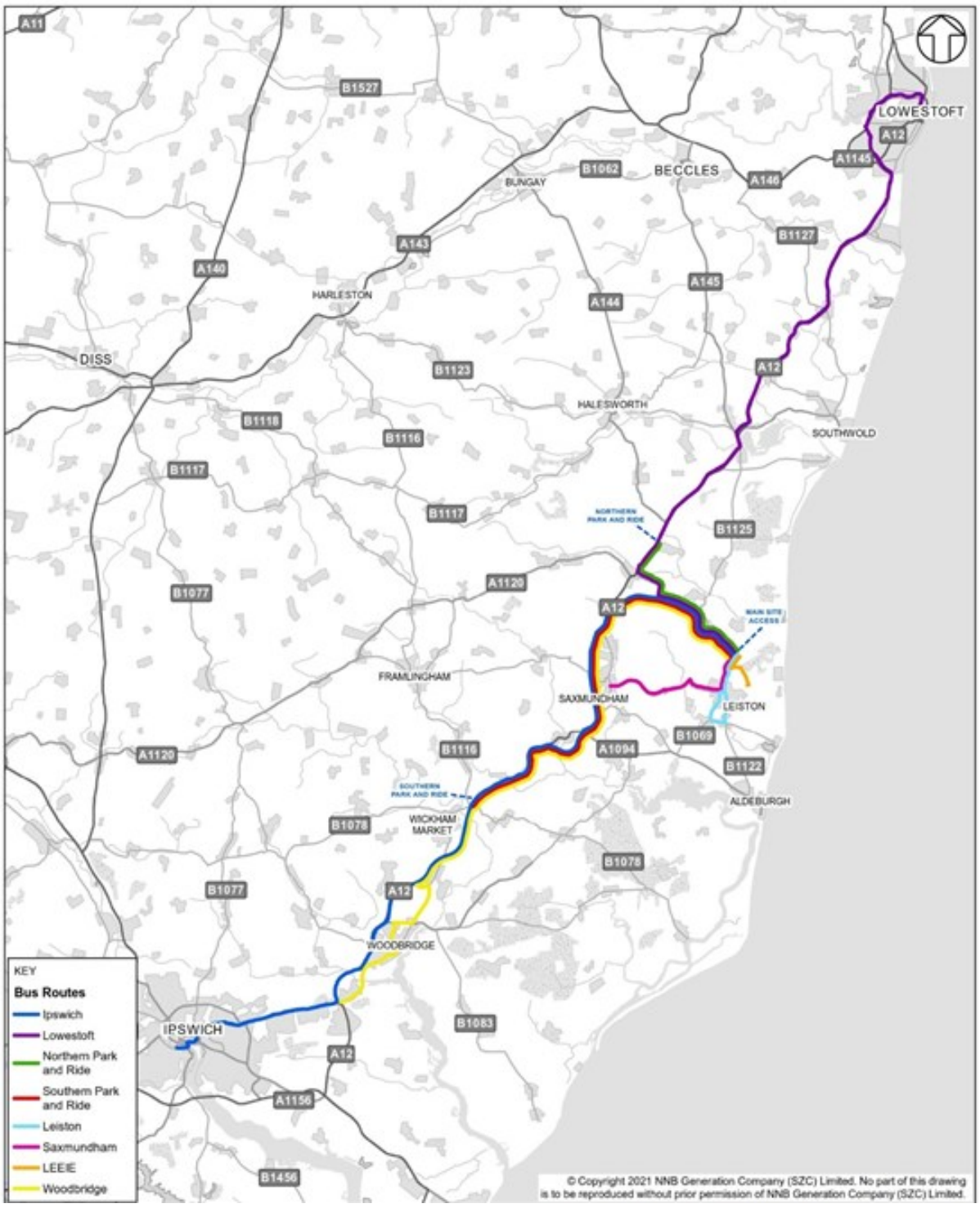
a) Modelling refinement

7.2.1 The majority of the peak construction traffic generation assumptions are unchanged from those set out in **Table 7.1** of the **Transport Assessment**

(Doc Ref. 8.5(A)) [AS-017]. The only change relates to the further refined direct bus strategy assumptions, as detailed in **Appendix 7D,** which includes an adjustment to the Leiston route and an additional Woodbridge route, as shown in **Plate 7.1**. In addition the service frequencies of proposed buses were changed to reflect the distribution and shift start/end times of the workforce.

7.2.2 Consequently, a refinement has been made to the assumed mode split of the peak construction workforce and this has formed part of the updated assessment reported in **Chapter 8** of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad), as well the updated transport, noise and vibration, and air quality assessments presented in **Volume 1, Chapter 3** of the **Environmental Statement Addendum** (Doc Ref. 6.14).

Plate 7.1: Proposed Sizewell C park and ride and direct bus routes – peak construction



b) Summary vehicle trips

7.2.3 No changes were made to other peak construction traffic generation elements including non-work trips, visitor trips and goods vehicles, or workers at the freight management facility.

7.2.4 The refinements to the peak construction workers trips as a result of the refined direct bus strategy assumptions resulted in a slightly different number of car trips forecast at the main development site car park and the park and ride sites. **Table 7.1** shows the total peak construction car trips (including workforce and other car trips) summarised for the main development site, southern park and ride and northern park and ride for the seven modelled hours. This table is a partial update of **Table 7.2** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] and numbers have been rounded.

Table 7.1: Sizewell C peak construction summary trips – car

Modelled hour	Main Development Site Car Park*		Southern Park and Ride		Northern Park and Ride	
	In	Out	In	Out	In	Out
06:00-07:00	262	33	286	4	324	10
07:00-08:00	299	52	167	34	238	41
08:00-09:00	85	24	5	25	22	21
15:00-16:00	40	199	4	119	9	155
16:00-17:00	36	113	4	85	12	82
17:00-18:00	39	259	0	81	2	133
18:00-19:00	47	243	0	240	0	289
Total (mod. hrs)	**808**	**922**	**466**	**588**	**608**	**731**
Total (24 hrs)	**1,781**	**1,781**	**980**	**980**	**1,206**	**1,206**

** Includes non-work trips for campus workers*

7.2.5 Car trips at the main site car park and the northern park and ride site have increased marginally from those presented in **Table 7.2** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], due to the reduction in workers using direct bus and rail services from Lowestoft, whilst those at the southern park and ride site have decreased, due to the additional direct bus services assessed from Ipswich and Woodbridge.

7.2.6 A revised assessment of car park accumulation is provided in **Appendix 7A** to this chapter, which updates the car park accumulation table in **Appendix 7B** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

The maximum accumulation at peak construction, which would likely occur between 13:00-14:00 hours, is 894 vehicles at the main development site car park and at the southern park and ride site, and 1,054 vehicles at the northern park and ride site.

7.2.7 The updated bus trips to and from the main development site, resulting from the bus service frequency refinement described in **Appendix 7D** are presented in **Table 7.2**. This table updates **Table 7.5** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. It shows a slight increase in the number of buses across the day, but fewer buses across the seven modelled hours as a result of the service frequency refinement.

Table 7.2: Sizewell C peak construction summary trips – bus

Modelled hour	Main Development Site	
	In	Out
06:00-07:00	27	27
07:00-08:00	39	26
08:00-09:00	17	14
15:00-16:00	17	17
16:00-17:00	17	17
17:00-18:00	18	31
18:00-19:00	20	19
Total (mod. hrs)	**155**	**151**
Total (24 hrs)	**378**	**378**

7.3 Early years construction

a) Modelling refinement

7.3.1 The majority of the early years construction traffic generation assumptions are unchanged from those set out in **Table 7.7** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

7.3.2 In the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] of the proposed development, the 900 main development site construction workers not living in caravans on the LEEIE , were all assumed to drive and park either on site (via the Temporary Construction Area) or at the Land East of Eastlands Industrial Estate (LEEIE) park and ride site, and get a bus to site.

7.3.3 However, this did not align with the parking permit system set out in the draft **Construction Worker Travel Plan** (Doc Ref. 8.8) [APP-609], which would not allocate parking permits to those workers living within Leiston. Instead, any workers living in Leiston would be required to walk or cycle to the main site or the LEEIE park and ride site to get a bus to site. The traffic modelling has therefore been revised on this basis.

7.3.4 The mode split of the early years construction workforce has been refined to reflect the proposed parking permit system, and results are reported in **Chapter 8** of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad). The updated traffic flows for the early years assessment has also formed the basis of the updated transport, noise and vibration, and air quality assessments presented in **Volume 1, Chapter 3** of the **ES Addendum** (Doc Ref. 6.14).

b) Summary vehicle trips

7.3.5 The refinement to the early years construction workers trips described above resulted in a change to the number of car trips at the main development site car park and the LEEIE park and ride car park. No changes were made to other early years traffic generation elements including non-work trips, visitor trips and goods vehicles, or construction workers at the associated development sites.

7.3.6 The summary of total early years car trips is shown in **Table 7.3** for the seven modelled hours. Numbers have been rounded.

Table 7.3: Sizewell C early years summary trips – car

Modelled hour	Main Development Site Car Park		LEEIE Caravan Site*	
	In	Out	In	Out
06:00-07:00	59	19	131	26
07:00-08:00	114	37	199	77
08:00-09:00	5	9	10	34
15:00-16:00	4	4	10	10
16:00-17:00	1	15	13	18
17:00-18:00	0	97	26	176
18:00-19:00	0	73	33	188
Total (mod. hrs)	**182**	**253**	**422**	**530**
Total (24 hrs)	268	268	656	656

** Includes non-work trips for caravan workers*

7.3.7 Car trips at the main site car park are virtually unchanged from those presented in **Table 7.8** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] for DCO, whilst those at the LEEIE park and ride car park have decreased slightly.

7.3.8 An updated assessment of car park accumulation is provided in **Appendix 7A** of this chapter, which updates the car park accumulation table in **Appendix 7B** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. The maximum accumulation in the early years would be 184 vehicles at the main development site car park between 10:00-16:00 hours, and 378 vehicles at the LEEIE park and ride site between 07:00-08:00 hours.

7.4 Assessment of the proposed changes to the potential for greater rail and marine freight transport

a) Overview

7.4.1 As set out in **Chapter 4** of this addendum, SZC Co. have carried out further refinement of the construction materials estimates and have updated the Material Management Strategy in **Appendix 2.2.C** of the **Environmental Statement Addendum** (Doc Ref. 6.14). Based on that further refinement, and to respond to feedback from stakeholders that sustainable modes must be optimised, SZC Co. propose two changes to the transport strategy, which are:

- **change 1:** operating four trains per day, five days a week with the resilience of being able to operate on a sixth day if necessary; and
- **change 2:** enhancement of the permanent beach landing facility (BLF) a second, temporary BLF for bulk material movements assumed to be operating at 70% of its campaign capacity.

7.4.2 The preferred option described in the updated **Freight Management Strategy** (Doc Ref. 8.18) would provide additional rail and marine capacity, which would result in fewer HGV movements by road when compared to the DCO Application (May 2020).

7.4.3 The assumed Sizewell C HGV demand for the proposed development at peak construction reported in the DCO application, and assessed in **Section 8.2** in this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad), are:

- 650 daily two-way HGVs on a typical day; and
- 1,000 daily two-way HGVs on the busiest day.

7.4.1 For the preferred option (i.e. proposed changes 1 and 2), the daily HGV movements would reduce as follows:

- Typical day: a reduction from 325 HGV deliveries (650 HGV movements) to 250 HGV deliveries (500 HGV movements); and
- Busiest day: a reduction from 500 HGV deliveries (1,000 HGV movements) to 350 HGV deliveries (700 HGV movements).

7.4.2 The traffic modelling assessment of these reduced HGV volumes is presented in **Section 8.3** in this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad).

b) Summary vehicle trips

7.4.3 The resultant HGV trips in and out of the main development site under the proposed changes to the rail and marine capacity (taking account of the updated material quantities) are presented in **Table 7.4** for the seven modelled hours. Note that these include the HGVs between the LEEIE and the main development site (140 movements, or 70 two-way deliveries) which are unchanged from the proposed development assumptions set out in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

7.4.4 **Table 7.4** can be compared against **Table 7.4** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

Table 7.4: Sizewell C peak construction summary trips – HGV (proposed changes 1 and 2)

Modelled hour	Main Development Site			
	Typical Day		Busiest Day	
	In	Out	In	Out
06:00-07:00				
07:00-08:00	39	10	52	12
08:00-09:00	39	18	52	23
15:00-16:00	36	25	48	33
16:00-17:00	24	27	31	35
17:00-18:00	16	26	20	34
18:00-19:00	9	23	10	30
Total (mod. hrs)	**161**	**129**	**211**	**166**
Total (24 hrs)	**320**	**320**	**420**	**420**

8 STRATEGIC MODELLING

8.1 Introduction

8.1.1 The overall approach to the traffic modelling assessment of Sizewell C is set out in **Chapter 6** of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad). The strategic modelling approach has remained unchanged from that described in **Chapter 6** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], however there were changes to some of the model inputs and underlying assumptions which has resulted in the need to report a revised set of strategic traffic modelling results. This is referred to as the 'Refined DCO' assessment within this chapter.

8.1.2 This chapter describes the development of a refined Sizewell C strategic traffic model and reports on the updated assessment results, set out in **Section 8.2** of this chapter. Importantly this chapter provides an updated set of tables of daily and peak hour traffic flow and journey time forecasts, which supersede those reported in **Chapter 8** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. The assumed distribution of Sizewell C HGVs on the A12 is unchanged from the Development Consent Order ('DCO'); however a sensitivity test, with 100% of Sizewell C heavy goods vehicles (HGVs) from the south, has been undertaken and this assessment is provided in **Appendix 8E** of this chapter.

8.1.3 As set out in **Chapter 4** of this addendum, SZC Co. have also considered a range of options for the delivery of materials to the main development site as described in the updated **Freight Management Strategy** (Doc Ref. 8.18). The preferred option would provide additional rail and marine capacity, which would result in fewer HGV movements by road when compared to the DCO Application (May 2020). The assessment of these changes is presented in **Section 8.3** of this chapter.

8.1.4 This chapter is set out as follows:

- **Section 8.2** – summarises the refinements to the 2015 base model validation in the Woodbridge area, which were undertaken following discussions with Suffolk County Council and other stakeholders. Revised traffic flow and journey time results are presented for the strategic modelling assessment of Sizewell C;
- **Section 8.3** – presents the results of the strategic traffic modelling assessment of the proposed changes to the rail and marine capacity, which would result in fewer HGV movements by road under the preferred option described in the **Freight Management Strategy** (Doc. Ref. 8.18); and

- **Section 8.4** – provides a summary of the key modelling results from the chapter.

8.2 Model refinement and updated results

8.2.1 The approach and assumptions around the base year and forecast year 'reference case' model scenarios are unchanged from those set out in **Chapter 8** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.2 Following the DCO Application (May 2020), and as part of on-going discussions with stakeholders led by Suffolk County Council, it was agreed that the 2015 base model, which was used as the basis for the DCO modelling assessment, would be refined using additional survey data in the area around Woodbridge to refine the accuracy of the base model representation in this area.

8.2.3 The validation of the 2015 base model for the DCO Application is described in a series of Local Model Validation Report (LMVR) documents provided in **Appendix 8A** [APP-604] of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. A technical note describing the Woodbridge refinement to the 2015 base model validation is provided in **Appendix 8A** of this chapter.

8.2.4 The minor network alterations around Woodbridge and traffic demand matrix adjustments, which were undertaken for the 2015 base model refinement, have subsequently been applied to all forecast year strategic model scenarios to form the basis of the assessment in this addendum.

a) Reference case

8.2.5 The development of the reference case models used for the DCO Application (May 2020) is described in detail in the technical notes provided in **Appendix 8B** [APP-604] of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017].

8.2.6 The reference case traffic demand matrices were revised for the model refinement. There were no changes to the committed development trips or background traffic growth factors assumed in the forecast year scenarios, however the minor adjustment to the base year traffic matrices in some hours, arising from the Woodbridge area refinement, resulted in revised forecast year reference case traffic matrices. The Refined DCO one-hour matrix total values are shown in **Table 8.1** for 2023, **Table 8.2** for 2028, and **Table 8.3** for 2034. These values supersede those reported in **Table 8.2**, **Table 8.3** and **Table 8.4** respectively, in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], although flow changes are very small in most cases, and not considered materially different from the previous values.

8.2.7 Trips generated by periodical outages at Sizewell B ('SZB outage') are included in all future year modelling scenarios. The inclusion of the proposed Scottish Power development presents a 'cumulative assessment' for the construction phases only. This was the same approach used for the previous assessment described in **Chapter 8** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

Table 8.1: 2023 reference case trips (Refined DCO)

Vehicle Class.	Hour	2015 Base Year.	2023 Background Traffic.	2023 Committed Development.	2023 Reference Case Total.	SZB Outage.	Final 2023 Reference Case Total.
Car	06:00–07:00	16,789	18,311	200	**18,511**	598	**19,109**
	07:00–08:00	39,155	41,163	1,933	**43,096**	174	**43,270**
	08:00–09:00	53,448	55,948	2,833	**58,781**	37	**58,818**
	15:00–16:00	49,926	54,122	2,627	**56,749**	13	**56,762**
	16:00–17:00	48,721	51,085	2,621	**53,706**	4	**53,710**
	17:00–18:00	50,804	52,972	3,002	**55,974**	199	**56,173**
	18:00–19:00	38,943	40,396	2,511	**42,907**	534	**43,441**
LGV	06:00–07:00	1,741	1,964	-	**1,964**	60	**2,024**
	07:00–08:00	3,785	4,270	-	**4,270**	20	**4,290**
	08:00–09:00	3,727	4,204	-	**4,204**	1	**4,205**
	15:00–16:00	3,062	3,454	-	**3,454**	19	**3,473**
	16:00–17:00	3,712	4,188	-	**4,188**	11	**4,199**
	17:00–18:00	2,771	3,126	-	**3,126**	13	**3,139**
	18:00–19:00	1,960	2,211	-	**2,211**	43	**2,254**
HGV	06:00–07:00	1,808	1,854	68	**1,922**	1	**1,923**
	07:00–08:00	2,456	2,517	81	**2,598**	4	**2,602**
	08:00–09:00	2,747	2,816	73	**2,889**	1	**2,890**
	15:00–16:00	2,744	2,812	111	**2,923**	1	**2,924**
	16:00–17:00	2,232	2,288	107	**2,395**	1	**2,396**
	17:00–18:00	1,623	1,663	91	**1,754**	1	**1,755**
	18:00–19:00	1,173	1,202	70	**1,272**	2	**1,274**
Total	06:00–07:00	20,338	22,129	268	**22,397**	659	**23,056**
	07:00–08:00	45,395	47,949	2,015	**49,964**	198	**50,162**
	08:00–09:00	59,923	62,968	2,906	**65,874**	40	**65,913**
	15:00–16:00	55,731	60,388	2,738	**63,126**	33	**63,159**
	16:00–17:00	54,665	57,561	2,728	**60,289**	16	**60,305**
	17:00–18:00	55,197	57,761	3,093	**60,854**	212	**61,067**
	18:00–19:00	42,076	43,810	2,580	**46,390**	579	**46,969**

Table 8.2: 2028 reference case trips (Refined DCO)

Vehicle Class.	Hour	2015 Base Year.	2028 Background Traffic.	2028 Committed Development.	2028 Reference Case Total.	SZB Outage.	Final 2028 Reference Case Total.
Car	06:00–07:00	16,789	19,213	209	**19,422**	598	**20,020**
	07:00–08:00	39,155	42,719	2,456	**45,175**	174	**45,349**
	08:00–09:00	53,448	57,709	3,880	**61,590**	37	**61,627**
	15:00–16:00	49,926	56,848	3,577	**60,425**	13	**60,438**
	16:00–17:00	48,721	52,710	3,644	**56,354**	4	**56,358**
	17:00–18:00	50,804	54,584	4,141	**58,724**	199	**58,923**
	18:00–19:00	38,943	41,560	3,450	**45,010**	534	**45,544**
LGV	06:00–07:00	1,741	2,064	-	**2,064**	60	**2,124**
	07:00–08:00	3,785	4,487	-	**4,487**	20	**4,507**
	08:00–09:00	3,727	4,418	-	**4,418**	1	**4,419**
	15:00–16:00	3,062	3,630	-	**3,630**	19	**3,649**
	16:00–17:00	3,712	4,401	-	**4,401**	11	**4,412**
	17:00–18:00	2,771	3,285	-	**3,285**	13	**3,298**
	18:00–19:00	1,960	2,323	-	**2,323**	43	**2,366**
HGV	06:00–07:00	1,808	1,887	68	**1,955**	1	**1,956**
	07:00–08:00	2,456	2,563	81	**2,644**	4	**2,648**
	08:00–09:00	2,747	2,868	73	**2,940**	1	**2,941**
	15:00–16:00	2,744	2,864	111	**2,975**	1	**2,976**
	16:00–17:00	2,232	2,329	107	**2,436**	1	**2,437**
	17:00–18:00	1,623	1,694	91	**1,784**	1	**1,785**
	18:00–19:00	1,173	1,224	70	**1,294**	2	**1,296**
Total	06:00–07:00	20,338	23,164	278	**23,442**	659	**24,101**
	07:00–08:00	45,395	49,769	2,537	**52,306**	198	**52,504**
	08:00–09:00	59,923	64,995	3,953	**68,948**	40	**68,987**
	15:00–16:00	55,731	63,341	3,688	**67,029**	33	**67,062**
	16:00–17:00	54,665	59,441	3,751	**63,192**	16	**63,208**
	17:00–18:00	55,197	59,562	4,231	**63,793**	212	**64,006**
	18:00–19:00	42,076	45,107	3,520	**48,627**	579	**49,206**

Table 8.3: 2034 reference case trips (Refined DCO)

Vehicle Class.	Hour	2015 Base Year.	2034 Background Traffic.	2034 Committed Development.	2034 Reference Case Total.	SZB Outage.	Final 2034 Reference Case Total.
Car	06:00–07:00	16,789	20,383	209	**20,592**	598	**21,190**

Vehicle Class.	Hour	2015 Base Year.	2034 Background Traffic.	2034 Committed Development.	2034 Reference Case Total.	SZB Outage.	Final 2034 Reference Case Total.
	07:00–08:00	39,155	44,784	3,033	**47,817**	174	**47,991**
	08:00–09:00	53,448	60,195	4,955	**65,150**	37	**65,187**
	15:00–16:00	49,926	60,356	4,465	**64,821**	13	**64,834**
	16:00–17:00	48,721	55,106	4,576	**59,682**	4	**59,686**
	17:00–18:00	50,804	56,967	5,207	**62,174**	199	**62,373**
	18:00–19:00	38,943	43,314	4,333	**47,647**	534	**48,181**
LGV	06:00–07:00	1,741	2,223	-	**2,223**	60	**2,283**
	07:00–08:00	3,785	4,833	-	**4,833**	20	**4,853**
	08:00–09:00	3,727	4,759	-	**4,759**	1	**4,760**
	15:00–16:00	3,062	3,909	-	**3,909**	19	**3,928**
	16:00–17:00	3,712	4,740	-	**4,740**	11	**4,751**
	17:00–18:00	2,771	3,538	-	**3,538**	13	**3,551**
	18:00–19:00	1,960	2,502	-	**2,502**	43	**2,545**
HGV	06:00–07:00	1,808	1,947	68	**2,016**	1	**2,017**
	07:00–08:00	2,456	2,645	81	**2,726**	4	**2,730**
	08:00–09:00	2,747	2,959	73	**3,032**	1	**3,033**
	15:00–16:00	2,744	2,955	111	**3,067**	1	**3,068**
	16:00–17:00	2,232	2,404	107	**2,511**	1	**2,512**
	17:00–18:00	1,623	1,748	91	**1,839**	1	**1,840**
	18:00–19:00	1,173	1,264	70	**1,334**	2	**1,336**
Total	06:00–07:00	20,338	24,554	278	**24,831**	659	**25,490**
	07:00–08:00	45,395	52,262	3,114	**55,376**	198	**55,574**
	08:00–09:00	59,923	67,913	5,028	**72,941**	40	**72,980**
	15:00–16:00	55,731	67,221	4,576	**71,797**	33	**71,830**
	16:00–17:00	54,665	62,250	4,683	**66,933**	16	**66,949**
	17:00–18:00	55,197	62,253	5,298	**67,550**	212	**67,763**
	18:00–19:00	42,076	47,079	4,403	**51,482**	579	**52,061**

8.2.8 A highway network update was also applied in the 2023 forecast scenario model to incorporate the highway schemes associated with the Brightwell Lakes (formerly known as Adastral Park) committed development. As set out in the '2023 Reference Case Inputs' technical note provided in **Appendix 8B** [APP-604] of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], it was previously assumed that none of the committed Brightwell Lakes highway mitigation would be in place by 2023. It has since been agreed with Suffolk County Council that it would be appropriate to assume

that the new signalised access on the A12, north of Foxhall Road, will be in place by 2023. This updated assumption has been included in all of the 2023 forecast year scenarios for this addendum.

b) Strategic model assessment – road link flows

8.2.9 This section tabulates estimates of the additional daily traffic that the Sizewell C Project is forecast to generate under the three phases of the project.

8.2.10 Average annual weekday traffic (AAWT) flows are compared between the reference case and the 'with Sizewell C' scenario in each forecast year. Additionally, traffic flows are presented for the cumulative scenarios, in 2023 and 2028, which include the Scottish Power development traffic.

8.2.11 The potential scale of changes in daily traffic flows was assessed for the locations shown in **Plates 8.1**, **8.2** and **8.3**, in line with the assessment presented in **Chapter 8** of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017]. Flow 'ranges' are presented where potential rerouting is forecast to occur – i.e. with or without rerouting, which is defined where there is a difference between the actual modelled flow in the 'with Sizewell C' scenario, and the direct additive value of reference case flow plus Sizewell C traffic.

Plate 8.1: Link flow assessment locations (1)

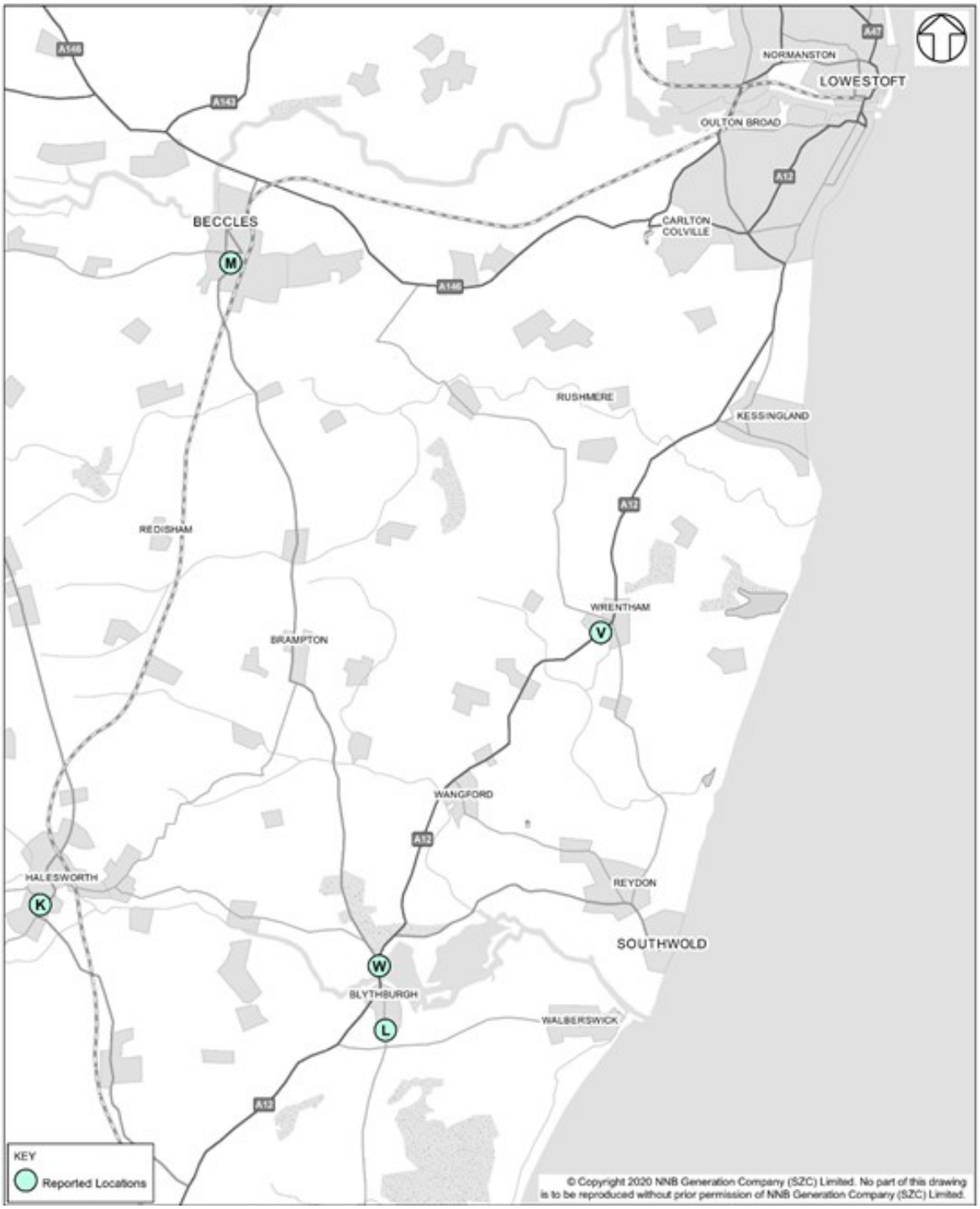


Plate 8.2: Link flow assessment locations (2)

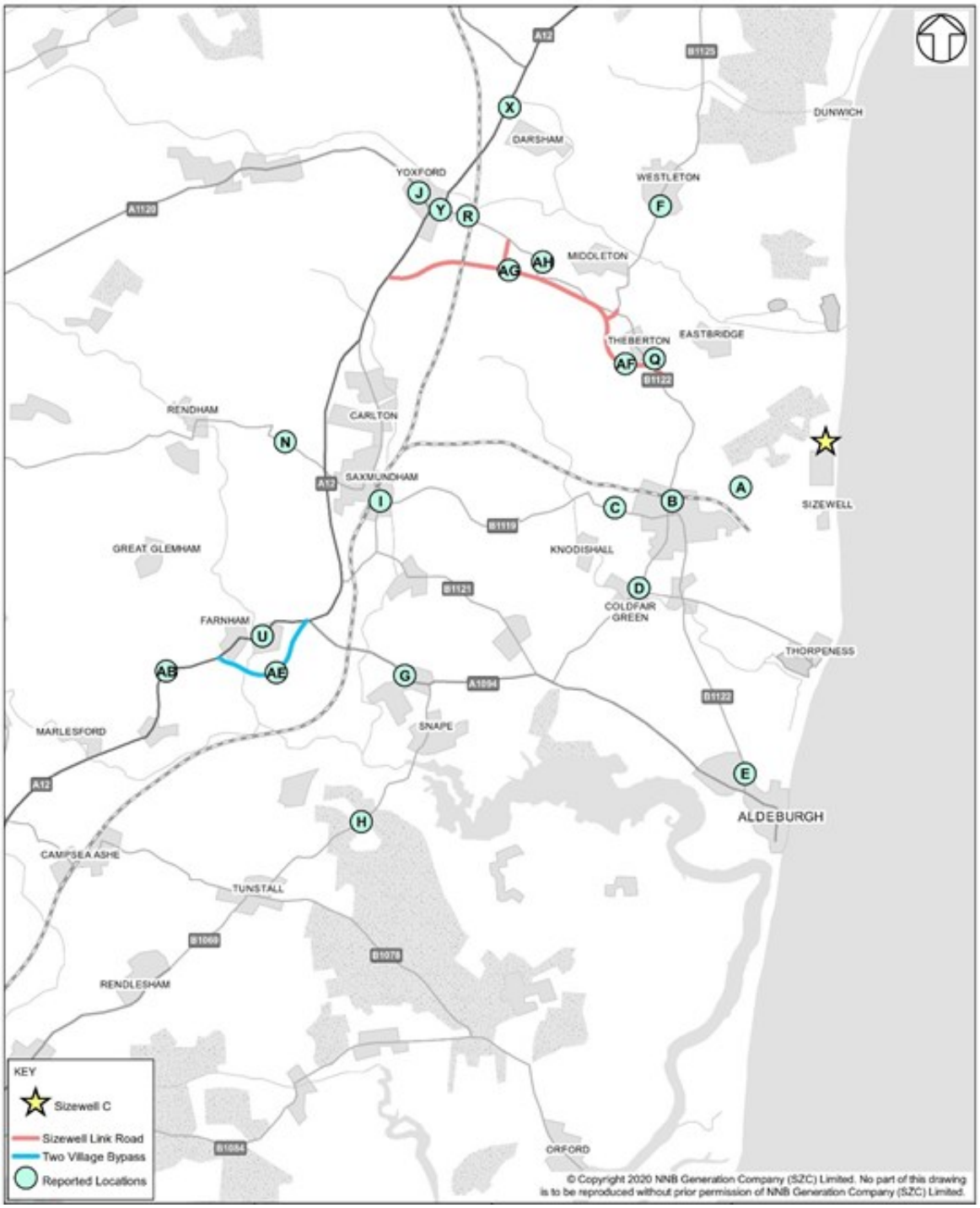
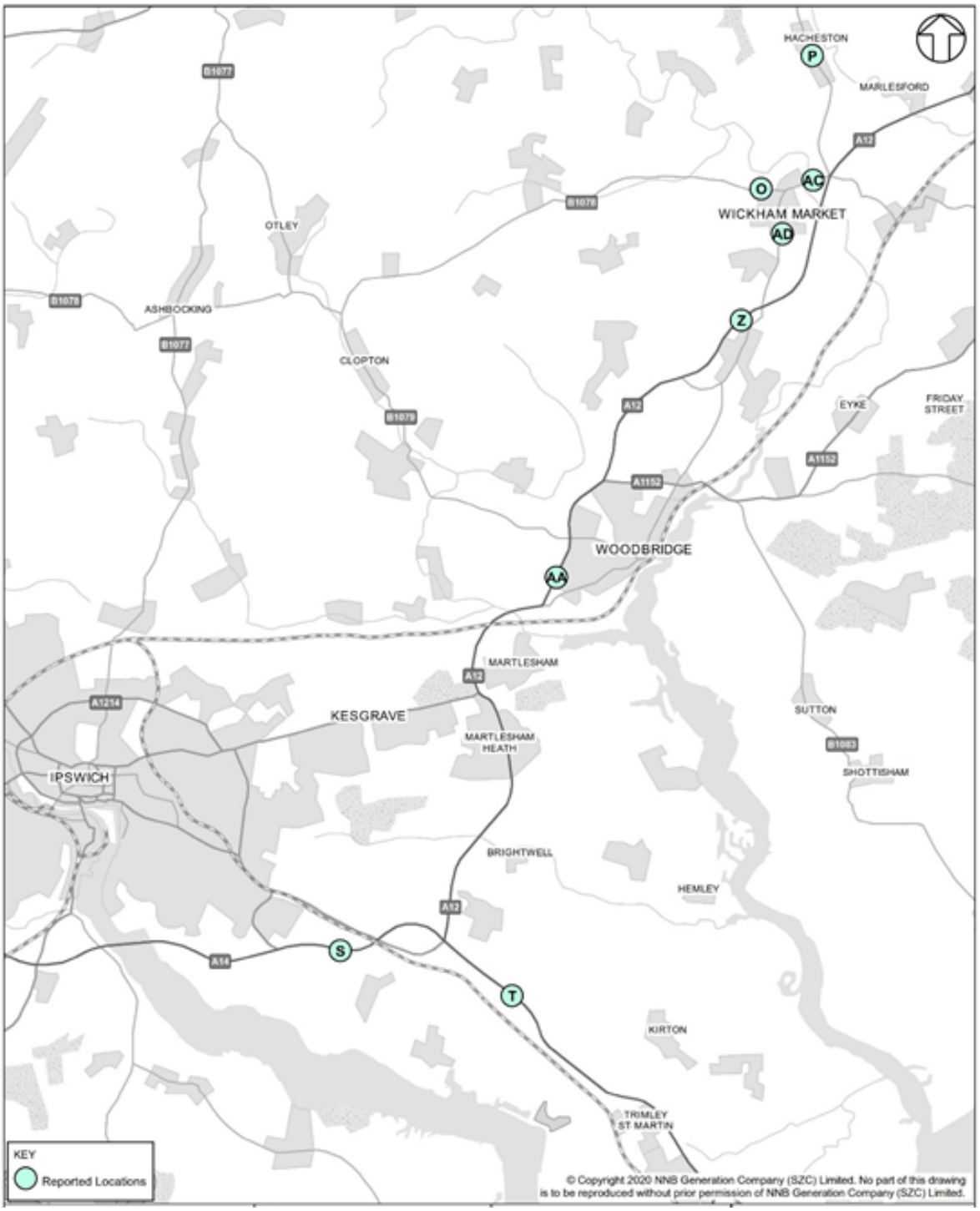


Plate 8.3: Link flow assessment locations (3)



ii. 2023 early years

8.2.12 **Table 8.4** shows the forecast daily 24-hour AAWT traffic flows during the early years of construction, rounded to 50 vehicles, at the locations shown

in **Plates 8.1**, **8.2** and **8.3**. This table replaces **Table 8.5** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.13 **Table 8.5** shows the hourly traffic flows, rounded to 10 vehicles, and percentage change from the reference case, during the network peak hours 08:00–09:00 and 17:00–18:00 hours. This table replaces **Table 8.6** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. Traffic flow plots showing the actual traffic flow volumes of Sizewell C cars, light goods vehicles (LGVs) and HGVs on the modelled highway are provided in **Appendix 8B** of this chapter.

Table 8.4: 2023 early years – forecast daily (24-hour) AAWT traffic flows (Refined DCO)

Location		2015 Base Year.	2023 Reference Case.	2023 Early Years.		2023 Early Years 'Cumulative'.	
				SZC Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.
Lover's Lane, Leiston.	A	2,500	3,250	1,500	4,750	200	4,900 - 5,000
B1122 Abbey Road, Leiston.	B	4,450	4,750	500	5,200 - 5,250	50	5,300
B1119 Saxmundham Rd, Leiston.	C	3,750	4,800	450	5,250 - 5,300	50	5,300
B1069 Coldfair Green.	D	5,400	6,550	500	7,000 - 7,050	150	7,150 - 7,200
B1122 Aldeburgh.	E	3,350	3,850	150	3,950 - 4,000	50	3,950 - 4,050
B1125 Westleton.	F	2,400	2,700	550	3,250	100	3,350 - 3,400
A1094 west of Snape Rd.	G	7,550	8,600	450	9,000 - 9,050	300	9,250 - 9,350
B1069 Tunstall.	H	3,050	3,600	150	3,750	0	3,750
B1121 Saxmundham.	I	4,600	5,500	200	5,700 - 5,850	50	5,750 - 5,900
A1120 Yoxford.	J	3,650	4,100	450	4,550 - 4,600	0	4,550 - 4,600
A144 Halesworth.	K	6,850	7,750	150	7,900	0	7,900
B1125 Blythburgh.	L	1,650	1,850	500	2,350	100	2,450
A145 Beccles.	M	15,400	9,500	150	9,600 - 9,650	50	9,650 - 9,700
B1119 Framlingham and A12.	N	2,700	3,150	50	3,200 - 3,250	0	3,200 - 3,250
B1078 Wickham Market.	O	3,900	5,250	150	5,400 - 5,600	50	5,450 - 5,750

Location		2015 Base Year.	2023 Reference Case.	2023 Early Years.		2023 Early Years 'Cumulative'.	
				SZC Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.
B1116 Hacheston.	P	6,950	7,550	50	7,550 - 7,600	0	7,500 - 7,600
B1122 Theberton.	Q	5,150	6,050	1,600	7,650	250	7,900
B1122 east of Yoxford.	R	3,450	4,150	1,100	5,250	100	5,350 - 5,400
A14 south of Ipswich (west of Seven Hills).	S	57,300	62,200	1,050	62,550 - 63,250	200	62,450 - 63,450
A14 east of Seven Hills.	T	44,350	49,100	250	49,250 - 49,350	50	49,250 - 49,400
A12 Farnham.	U	18,900	20,950	2,000	22,650	400	22,900 - 23,350
A12 Wrentham.	V	9,800	9,600	650	10,250	150	10,300 - 10,400
A12 Blythburgh.	W	10,400	10,950	950	11,800 - 11,900	150	11,900 - 12,050
A12 north of northern park and ride.	X	14,000	15,050	700	15,550 - 15,750	50	15,550 - 15,800
A12 Yoxford.	Y	14,700	15,700	1,500	17,050 - 17,200	150	17,100 - 17,350
A12 south of southern park and ride.	Z	24,550	26,250	1,850	27,600 - 28,100	350	27,650 - 28,450
A12 Woodbridge.	AA	36,300	38,500	1,650	38,900 - 40,150	300	38,550 - 40,450
A12 Marlesford.	AB	18,800	20,900	2,000	22,650 - 22,900	400	22,850 - 23,300
B1078 Wickham Market (east of B1438).	AC	3,250	4,300	150	4,450 - 4,700	50	4,500 - 4,800
B1438 High Street, Wickham Market.	AD	2,550	3,000	50	3,050	0	3,050 - 3,100
Two village bypass.	AE	-	-	-	-	-	-
Sizewell link road south of Theberton.	AF	-	-	-	-	-	-
Sizewell link road east of A12.	AG	-	-	-	-	-	-
B1122 Middleton Moor.	AH	3,450	4,150	1,100	5,250	100	5,350

Table 8.5: 2023 early years – percentage change in network peak hours (Refined DCO)

Location		08:00–09:00			17:00–18:00		
		2023 Reference Case.	2023 Early Years.	% change	2023 Reference Case.	2023 Early Years.	% change
Lover's Lane, Leiston.	A	220	310	42%	170	350	111%
B1122 Abbey Road, Leiston.	B	400	420	6%	350	420	21%
B1119 Saxmundham Road, Leiston.	C	390	410	5%	440	510	16%
B1069 Coldfair Green.	D	460	480	3%	500	560	13%
B1122 Aldeburgh.	E	290	290	1%	320	340	7%
B1125 Westleton.	F	190	200	8%	190	280	45%
A1094 west of Snape Road.	G	610	630	3%	660	710	9%
B1069 Tunstall.	H	210	220	2%	330	360	8%
B1121 Saxmundham.	I	460	460	0%	490	560	15%
A1120 Yoxford.	J	290	310	7%	340	430	26%
A144 Halesworth.	K	680	690	1%	570	600	4%
B1125 Blythburgh.	L	130	150	9%	130	210	63%
A145 Beccles.	M	820	830	1%	740	770	4%
B1119 between Framlingham and A12.	N	240	250	1%	330	340	4%
B1078 Wickham Market.	O	470	490	5%	420	480	16%
B1116 Hacheston.	P	780	770	-1%	530	550	3%
B1122 Theberton.	Q	440	530	20%	400	610	51%
B1122 east of Yoxford.	R	300	370	23%	300	420	40%
A14 south of Ipswich west of Seven Hills.	S	4,980	4,970	0%	5,060	5,080	Less than 1%
A14 east of Seven Hills.	T	3,730	3,730	Less than 1%	3,960	3,980	Less than 1%
A12 Farnham.	U	1,550	1,660	7%	1,640	1,850	13%
A12 Wrentham.	V	720	750	3%	730	860	18%
A12 Blythburgh.	W	840	870	4%	830	990	19%
A12 north of northern park and ride.	X	1,080	1,110	3%	1,230	1,350	10%
A12 Yoxford.	Y	1,190	1,270	7%	1,290	1,490	16%
A12 south of southern park and ride.	Z	2,090	2,160	3%	2,000	2,150	8%
A12 Woodbridge.	AA	2,900	2,920	1%	3,000	3,020	1%

Location		08:00–09:00			17:00–18:00		
		2023 Reference Case.	2023 Early Years.	% change	2023 Reference Case.	2023 Early Years.	% change
A12 Marlesford.	AB	1,560	1,670	7%	1,640	1,850	13%
B1078 Wickham Market (east of B1438).	AC	390	410	6%	340	400	20%
B1438 High Street, Wickham Market.	AD	240	240	1%	250	270	4%
Two village bypass.	AE	-	-	-	-	-	-
Sizewell link road south of Theberton.	AF	-	-	-	-	-	-
Sizewell link road east of A12.	AG	-	-	-	-	-	-
B1122 Middleton Moor.	AH	300	370	22%	300	420	40%

8.2.14 Compared with the daily traffic volumes reported in **Table 8.5** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], there is no material change at the majority of locations, apart from on the A12 between Woodbridge and Farnham (locations Z, AA, AB) which shows marginally higher flows from Sizewell C due to a reduction in the reported displacement of trips away from the A12.

8.2.15 Overall, there is no material change in the traffic flow changes reported in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] for early years of construction.

iii. 2028 peak construction

8.2.16 **Table 8.6** shows the forecast daily 24-hour AAWT traffic flows at peak construction, rounded to 50 vehicles, at the locations shown in **Plates 8.1**, **8.2** and **8.3**. This table replaces **Table 8.7** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.17 **Table 8.7** shows the hourly traffic flows, rounded to 10 vehicles, and percentage change from the reference case, during the network peak hours 08:00–09:00 and 17:00–18:00 hours. This table replaces **Table 8.8** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. Traffic flow plots showing the actual traffic flow volumes of Sizewell C cars, LGVs and HGVs on the modelled highway are provided in **Appendix 8B** of this chapter

Table 8.6: 2028 peak construction – forecast daily (24-hour) AAWT traffic flows (Refined DCO)

Location		2015 Base Year.	2028 Reference Case.	2028 Peak Construction.				2028 Peak Construction 'Cumulative'.			
				Typical Day.		Busiest Day.		Typical Day.		Busiest Day.	
				SZC Traffic.	Total Traffic.	SZC Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.
Lover's Lane, Leiston.	A	2,500	3,350	400	3,750 - 4,000	400	3,750 - 3,950	200	3,950 - 4,200	200	3,950 - 4,200
B1122 Abbey Road, Leiston.	B	4,450	4,950	3,350	8,300	3,350	8,300	50	8,350 - 8,400	50	8,350 - 8,400
B1119 Saxmundham Road, Leiston	C	3,750	5,250	1000	5,950 - 6,250	1,000	6,000 - 6,250	0	6,000 - 6,250	0	6,000 - 6,250
B1069 Coldfair Green.	D	5,400	6,850	950	7,700 - 7,800	950	7,700 - 7,800	150	7,850 - 7,950	150	7,850 - 7,950
B1122 Aldeburgh.	E	3,350	3,950	800	4,700 - 4,750	800	4,700 - 4,750	50	4,750 - 4,800	50	4,750 - 4,800
B1125 Westleton.	F	2,400	2,800	350	3,100 - 3,150	350	3,100 - 3,150	100	3,200 - 3,250	100	3,200 - 3,250
A1094 west of Snape Road.	G	7,550	8,900	200	9,100	200	9,100	300	9,400	300	9,350 - 9,400
B1069 Tunstall.	H	3,050	3,850	600	4,350 - 4,450	600	4,350 - 4,450	0	4,350 - 4,450	0	4,350 - 4,450
B1121 Saxmundham.	I	4,600	5,650	300	5,750 - 5,950	300	5,800 - 5,950	50	5,850 - 6,000	50	5,900 - 6,000
A1120 Yoxford.	J	3,650	4,350	500	4,850 - 4,900	500	4,850 - 4,950	0	4,850 - 4,950	0	4,850 - 5,000
A144 Halesworth.	K	6,850	8,100	650	8,750	650	8,750	0	8,750 - 8,800	0	8,750 - 8,800
B1125 Blythburgh.	L	1,650	1,850	150	2,000	150	2,000	100	2,100	100	2,100
A145 Beccles.	M	15,400	9,350	300	9,600 - 9,650	300	9,650	0	9,650	0	9,650
B1119 between Framlingham and A12	N	2,700	3,350	100	3,450	100	3,450	0	3,450	0	3,450
B1078 Wickham Market.	O	3,900	5,650	850	6,500 - 6,600	850	6,500 - 6,600	50	6,550 - 6,700	50	6,550 - 6,700
B1116 Hacheston.	P	6,950	7,750	250	7,950 - 8,000	250	7,950 - 8,000	0	7,900 - 8,000	0	7,900 - 8,000
B1122 Theberton.	Q	5,150	6,200	50	500	100	550	0	500	0	600

Location		2015 Base Year.	2028 Reference Case.	2028 Peak Construction.				2028 Peak Construction 'Cumulative'.			
				Typical Day.		Busiest Day.		Typical Day.		Busiest Day.	
				SZC Traffic.	Total Traffic.	SZC Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.
B1122 east of Yoxford.	R	3,450	4,300	700	4,550	750	4,600	50	4,600	50	4,650
A14 south of Ipswich west of Seven Hills	S	57,300	65,600	1,350	66,350 - 66,950	1,600	66,350 - 67,200	200	66,100 - 67,150	200	66,250 - 67,400
A14 east of Seven Hills.	T	44,350	50,850	200	50,950 - 51,050	200	50,950 - 51,050	50	50,950 - 51,100	50	50,950 - 51,100
A12 Farnham.	U	18,900	21,950	0	250	0	250	0	250	0	250
A12 Wrentham.	V	9,800	10,200	1,300	11,350 - 11,500	1,300	11,400 - 11,500	150	11,450 - 11,650	150	11,450 - 11,650
A12 Blythburgh.	W	10,400	11,350	1,900	13,100 - 13,250	1,950	13,100 - 13,300	150	13,200 - 13,400	150	13,200 - 13,450
A12 north of northern park and ride	X	14,000	15,600	2,650	18,150 - 18,250	2,700	18,150 - 18,300	100	18,150 - 18,350	100	18,150 - 18,400
A12 Yoxford.	Y	14,700	16,350	800	16,350 - 17,150	800	16,300 - 17,150	50	16,300 - 17,200	50	16,300 - 17,200
A12 south of southern park and ride	Z	24,550	27,500	2,550	29,550 - 30,050	2,850	29,700 - 30,350	350	29,650 - 30,400	350	29,700 - 30,700
A12 Woodbridge.	AA	36,300	39,450	2,300	40,200 - 41,750	2,550	40,100 - 42,000	300	39,800 - 42,050	300	39,600 - 42,300
A12 Marlesford.	AB	18,800	21,950	1,600	23,350 - 23,550	1,900	23,500 - 23,850	400	23,550 - 23,950	400	23,700 - 24,250
B1078 Wickham Market (east of B1438)	AC	3,250	4,500	900	5,400 - 5,450	900	5,400 - 5,500	50	5,450 - 5,550	50	5,450 - 5,550
B1438 High Street, Wickham Market	AD	2,550	3,300	50	3,350	50	3,350	0	3,350 - 3,400	0	3,350 - 3,400
Two village bypass.	AE	-	-	1,600	22,450	1,900	22,650	400	22,700	400	22,800
Sizewell link road south of Theberton	AF	-	-	2,250	8,550	2,600	8,850	250	8,800	250	9,050
Sizewell link road east of A12.	AG	-	-	1,200	2,350	1,500	2,650	100	1,300 - 2,450	100	1,600 - 2,700
B1122 Middleton Moor.	AH	3,450	4,300	0	350	0	350	0	350	0	350

Table 8.7: 2028 peak construction – percentage change in network peak hours (Refined DCO)

Location		08:00–09:00					17:00–18:00				
		2028 Reference Case.	2028 Peak Construction.				2028 Reference Case.	2028 Peak Construction.			
			Typical Day.	% Change	Busiest Day.	% change		Typical Day.	% Change	Busiest Day.	% Change
Lover's Lane, Leiston.	A	220	260	16%	250	15%	180	240	32%	240	32%
B1122 Abbey Road, Leiston.	B	410	520	28%	520	28%	370	630	71%	630	71%
B1119 Saxmundham Road, Leiston	C	440	460	6%	470	8%	460	520	12%	520	12%
B1069 Coldfair Green.	D	480	500	4%	500	4%	510	590	14%	590	14%
B1122 Aldeburgh.	E	300	320	8%	320	8%	320	390	21%	390	21%
B1125 Westleton.	F	190	200	2%	200	2%	200	230	14%	230	14%
A1094 west of Snape Road.	G	630	640	1%	640	1%	680	700	2%	690	2%
B1069 Tunstall.	H	230	240	4%	240	4%	350	400	13%	400	14%
B1121 Saxmundham.	I	490	480	-3%	490	0%	480	510	6%	510	6%
A1120 Yoxford.	J	300	320	6%	320	6%	360	400	10%	400	10%
A144 Halesworth.	K	710	720	2%	730	2%	590	630	6%	630	6%
B1125 Blythburgh.	L	140	140	3%	140	3%	130	140	10%	140	10%
A145 Beccles.	M	850	860	1%	860	1%	700	720	4%	730	4%
B1119 between Framlingham and A12	N	260	260	Less than 1%	260	1%	350	360	1%	360	1%
B1078 Wickham Market.	O	490	540	11%	530	9%	460	500	11%	510	11%
B1116 Hacheston.	P	790	800	1%	800	1%	550	560	1%	550	1%
B1122 Theberton.	Q	450	40	-90%	40	-90%	410	40	-91%	40	-91%

Location		08:00–09:00					17:00–18:00				
		2028 Reference Case.	2028 Peak Construction.				2028 Reference Case.	2028 Peak Construction.			
			Typical Day.	% Change	Busiest Day.	% change		Typical Day.	% Change	Busiest Day.	% Change
B1122 east of Yoxford.	R	310	310	0%	320	1%	310	310	-1%	320	1%
A14 south of Ipswich west of Seven Hills	S	5200	5220	Less than 1%	5240	1%	5360	5340	0%	5280	-2%
A14 east of Seven Hills.	T	3840	3840	0%	3830	0%	4100	4100	Less than 1%	4100	Less than 1%
A12 Farnham.	U	1620	30	-98%	30	-98%	1720	20	-99%	20	-99%
A12 Wrentham.	V	750	780	3%	780	3%	820	850	4%	850	4%
A12 Blythburgh.	W	860	900	5%	890	4%	870	960	10%	960	10%
A12 north of northern park and ride.	X	1110	1180	6%	1170	5%	1290	1420	10%	1420	10%
A12 Yoxford.	Y	1230	1180	-3%	1180	-4%	1350	1330	-1%	1330	-2%
A12 south of southern park and ride.	Z	2200	2270	3%	2280	4%	2090	2180	4%	2180	4%
A12 Woodbridge.	AA	3000	2970	-1%	2940	-2%	3070	3040	-1%	3010	-2%
A12 Marlesford.	AB	1630	1710	5%	1720	6%	1730	1820	5%	1820	5%
B1078 Wickham Market (east of B1438)	AC	380	410	10%	410	8%	360	410	14%	410	15%
B1438 High Street, Wickham Market	AD	280	300	5%	290	4%	280	280	1%	280	Less than 1%
Two village bypass.	AE	-	1630	-	1640	-	-	1760	-	1760	-
Sizewell link road south of Theberton	AF	-	560	-	580	-	-	590	-	610	-
Sizewell link road east of A12.	AG	-	160	-	180	-	-	180	-	200	-
B1122 Middleton Moor.	AH	310	30	-91%	30	-91%	310	30	-89%	40	-89%

8.2.18 Compared with the daily traffic volumes reported in **Table 8.7** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], there is no material change at the majority of locations.

8.2.19 A marginal increase in Sizewell C traffic is reported on the A12 north of the northern park and ride site (location X), due to an increase in workers assessed to be using this park and ride site rather than direct Lowestoft buses or rail services as part of the refinements to the direct bus strategy. A marginal increase in Sizewell C traffic is also shown on the A12 north of Wickham Market (reflected by location AB), as a result of the proposed additional Woodbridge bus service. This translates to a reduction in Sizewell C car trips on the A12 south of Wickham Market (location Z), due to the increased number of workers using direct buses from Ipswich or Woodbridge, instead of driving to the southern park and ride.

8.2.20 As in the early years, the displacement of trips away from the A12 at Woodbridge is reduced compared with that reported in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], as a result of refinement of the base model validation.

8.2.21 The differences in peak hour traffic flow changes, compared with that reported in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], are in line with the changes in daily traffic flows.

8.2.22 Overall, there is no material change in the traffic flow differences reported in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], for peak construction.

iv. 2034 operational traffic

8.2.23 **Table 8.8** shows the forecast daily 24-hour AAWT traffic flows during the operational phase, rounded to 50 vehicles, at the locations shown in **Plates 8.1**, **8.2** and **8.3**. This table replaces **Table 8.9** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.24 **Table 8.9** shows the hourly traffic flows, rounded to 10 vehicles, and percentage change from the reference case, during the network peak hours 08:00–09:00 and 17:00–18:00. This table replaces **Table 8.10** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. Traffic flow plots showing the actual traffic flow volumes of Sizewell C cars, LGVs and HGVs on the modelled highway are provided in **Appendix 8B** of this chapter.

Table 8.8: 2034 operational traffic – forecast daily (24-hour) AAWT traffic flows (Refined DCO)

Location		2015 Base Year.	2034 Reference Case.	2034 Operational Traffic.	
				SZC Traffic.	Total Traffic.
Lover's Lane, Leiston.	A	2,500	3,500	50	3,550 - 3,750
B1122 Abbey Road, Leiston.	B	4,450	5,250	1,100	6,250 - 6,350
B1119 Saxmundham Road, Leiston.	C	3,750	5,750	400	5,850 - 6,150
B1069 Coldfair Green.	D	5,400	7,200	450	7,550 - 7,650
B1122 Aldeburgh.	E	3,350	4,100	100	4,100 - 4,200
B1125 Westleton.	F	2,400	2,950	200	3,050 - 3,150
A1094 west of Snape Road.	G	7,550	9,400	0	9,400 - 9,450
B1069 Tunstall.	H	3,050	4,150	350	4,350 - 4,500
B1121 Saxmundham.	I	4,600	6,000	50	5,850 - 6,050
A1120 Yoxford.	J	3,650	4,650	0	4,650 - 4,700
A144 Halesworth.	K	6,850	8,650	0	8,650
B1125 Blythburgh.	L	1,650	1,950	0	1,900 - 1,950
A145 Beccles.	M	15,400	9,550	0	9,500 - 9,550
B1119 between Framlingham and A12.	N	2,700	3,700	0	3,600 - 3,700
B1078 Wickham Market.	O	3,900	6,300	0	6,300 - 6,350
B1116 Hacheston.	P	6,950	8,050	0	8,050
B1122 Theberton.	Q	5,150	6,400	0	400
B1122 east of Yoxford.	R	3,450	4,500	50	4,050
A14 south of Ipswich west of Seven	S	57,300	69,200	50	68,150 - 69,250
A14 east of Seven Hills.	T	44,350	53,500	0	53,050 - 53,500
A12 Farnham.	U	18,900	23,150	0	300
A12 Wrentham.	V	9,800	10,650	0	10,600 - 10,650
A12 Blythburgh.	W	10,400	11,750	0	11,700 - 11,750
A12 north of northern park and ride.	X	14,000	16,300	50	16,350 - 16,400
A12 Yoxford.	Y	14,700	17,100	0	16,400 - 17,100
A12 south of southern park and ride.	Z	24,550	28,650	50	28,600 - 28,700
A12 Woodbridge.	AA	36,300	41,100	50	40,200 - 41,150
A12 Marlesford.	AB	18,800	23,150	100	23,250
B1078 Wickham Market (east of	AC	3,250	5,000	0	5,000 - 5,050
B1438 High Street, Wickham Market.	AD	2,550	3,600	0	3,600
Two village bypass.	AE	-	-	250	22,500
Sizewell link road south of Theberton.	AF	-	-	400	7,000
Sizewell link road east of A12.	AG	-	-	150	1,400
B1122 Middleton Moor.	AH	3,450	4,500	0	350

Table 8.9: 2034 operational traffic – percentage change in network peak hours (Refined DCO)

Location		08:00–09:00			17:00–18:00		
		2034 Reference Case.	2034 Operational Traffic.	% change	2034 Reference Case.	2034 Operational Traffic.	% change
Lover's Lane, Leiston.	A	220	260	18%	180	200	11%
B1122 Abbey Road, Leiston.	B	430	800	87%	380	390	1%
B1119 Saxmundham Road, Leiston.	C	500	630	26%	500	480	-4%
B1069 Coldfair Green	D	520	610	17%	530	530	Less than 1%
B1122 Aldeburgh.	E	310	330	8%	340	330	-1%
B1125 Westleton.	F	200	280	40%	210	210	-3%
A1094 west of Snape Road.	G	680	670	-1%	710	720	1%
B1069 Tunstall.	H	250	290	17%	380	370	-2%
B1121 Saxmundham	I	530	540	Less than 1%	510	510	-1%
A1120 Yoxford.	J	330	330	1%	380	380	1%
A144 Halesworth.	K	760	760	Less than 1%	640	640	Less than 1%
B1125 Blythburgh.	L	140	140	-4%	130	130	-1%
A145 Beccles.	M	870	870	0%	690	690	Less than 1%
B1119 between Framlingham and	N	280	270	-3%	390	390	-1%
B1078 Wickham Market	O	560	560	Less than 1%	500	500	1%
B1116 Hacheston.	P	820	810	-1%	560	560	Less than 1%
B1122 Theberton.	Q	470	40	-91%	420	30	-92%
B1122 east of Yoxford	R	330	290	-11%	330	280	-14%
A14 south of Ipswich west of Seven Hills.	S	5,790	5,300	-9%	5,580	5,580	0%
A14 east of Seven Hills	T	4,170	3,960	-5%	4,290	4,290	0%
A12 Farnham.	U	1,730	30	-99%	1,790	20	-99%
A12 Wrentham.	V	800	790	-1%	840	840	Less than 1%
A12 Blythburgh.	W	900	880	-2%	890	890	Less than 1%
A12 north of northern park and ride.	X	1,180	1,180	Less than 1%	1,330	1,340	1%
A12 Yoxford.	Y	1,300	1,220	-6%	1,400	1,340	-5%
A12 south of southern park and	Z	2,320	2,250	-3%	2,160	2,170	1%
A12 Woodbridge.	AA	3,440	3,000	-13%	3,080	3,080	0%
A12 Marlesford.	AB	1,750	1,710	-2%	1,800	1,810	1%
B1078 Wickham Market (east of	AC	420	430	2%	390	390	0%

Location		08:00–09:00			17:00–18:00		
		2034 Reference Case.	2034 Operational Traffic.	% change	2034 Reference Case.	2034 Operational Traffic.	% change
B1438 High Street, Wickham Market.	AD	310	300	-4%	300	300	Less than 1%
Two village bypass.	AE	-	1,700	-	-	1,750	-
Sizewell link road south of Theberton.	AF	-	630	-	-	450	-
Sizewell link road east of A12.	AG	-	150	-	-	110	-
B1122 Middleton Moor	AH	330	30	-92%	330	30	-90%

8.2.25 The only refinements applied in the 2034 operational phase traffic modelling relate to the base year and reference case updates; there are no changes to the Sizewell C traffic inputs.

8.2.26 As in the construction phases, the traffic flows around the A12 at Woodbridge in the 2034 reference case are marginally affected by the refinement of the base year model in this area, but overall there is no material change in the operational phase traffic flow changes reported in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

c) Strategic model assessment – journey times

8.2.27 As part of the validation of the 2015 base model, journey times along a series of routes were observed and compared with modelled journey times to demonstrate that the model matched closely with existing observed traffic conditions in each modelled hour. Since the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], modelled traffic conditions around Woodbridge have been refined and two additional routes (11 and 12 in this addendum) have been incuded in the validation. Model refinements are described in **Appendix 8A** of this chapter.

8.2.28 The modelled journey times on these routes and the five additional routes (shown in **Plates 8.4** and **8.5**) have been compared in each scenario to assess the impact on these journey times in the forecast scenarios compared with reference case levels. Note that the routes labelled 11 to 14 in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], are now labelled routes A1 to A4. A further route A5 has been included to represent the A12 corridor covered by the VISSIM micro-simulation model which is discussed in **Chapter 9** of this addendum.

Plate 8.4: Journey time validation routes

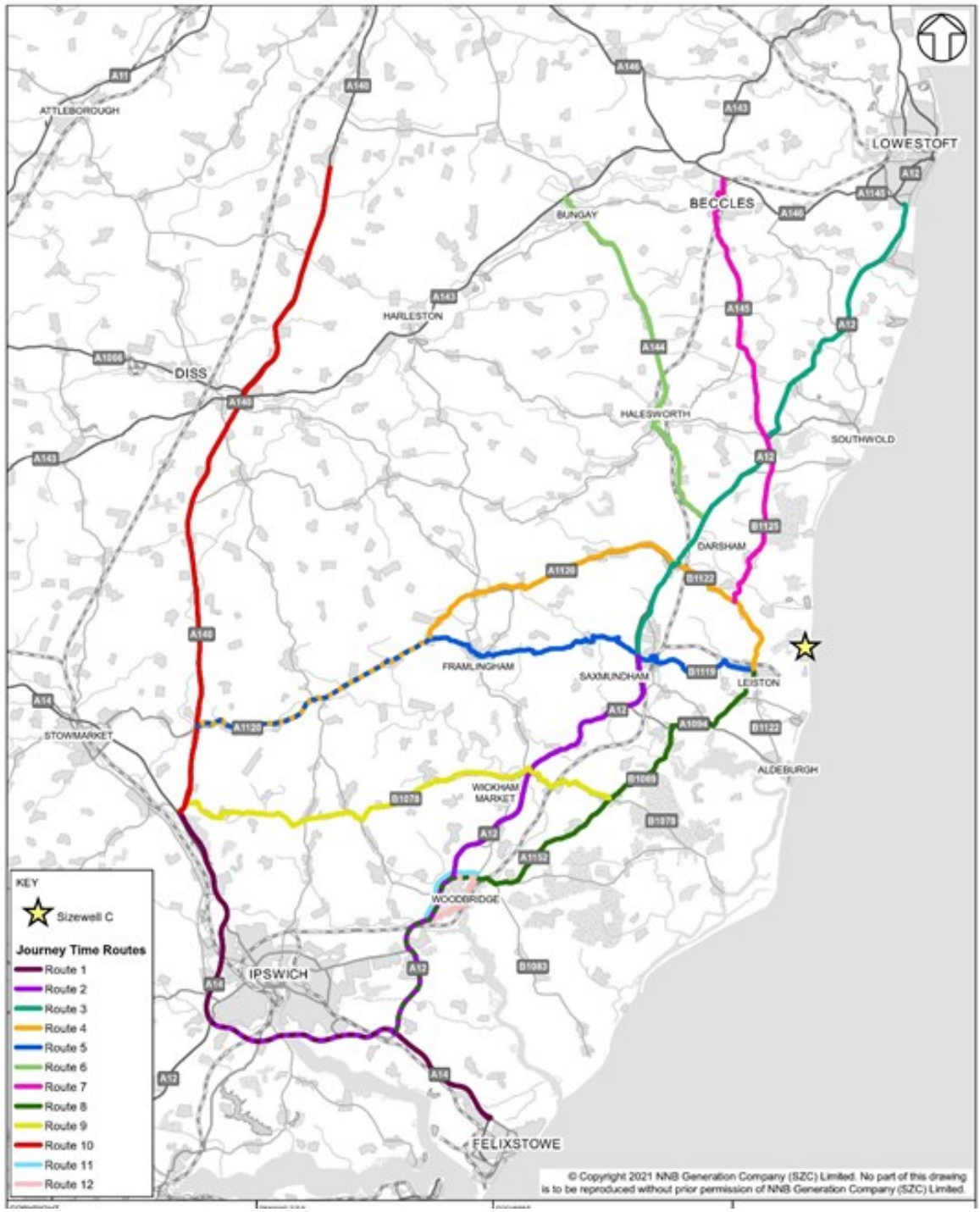
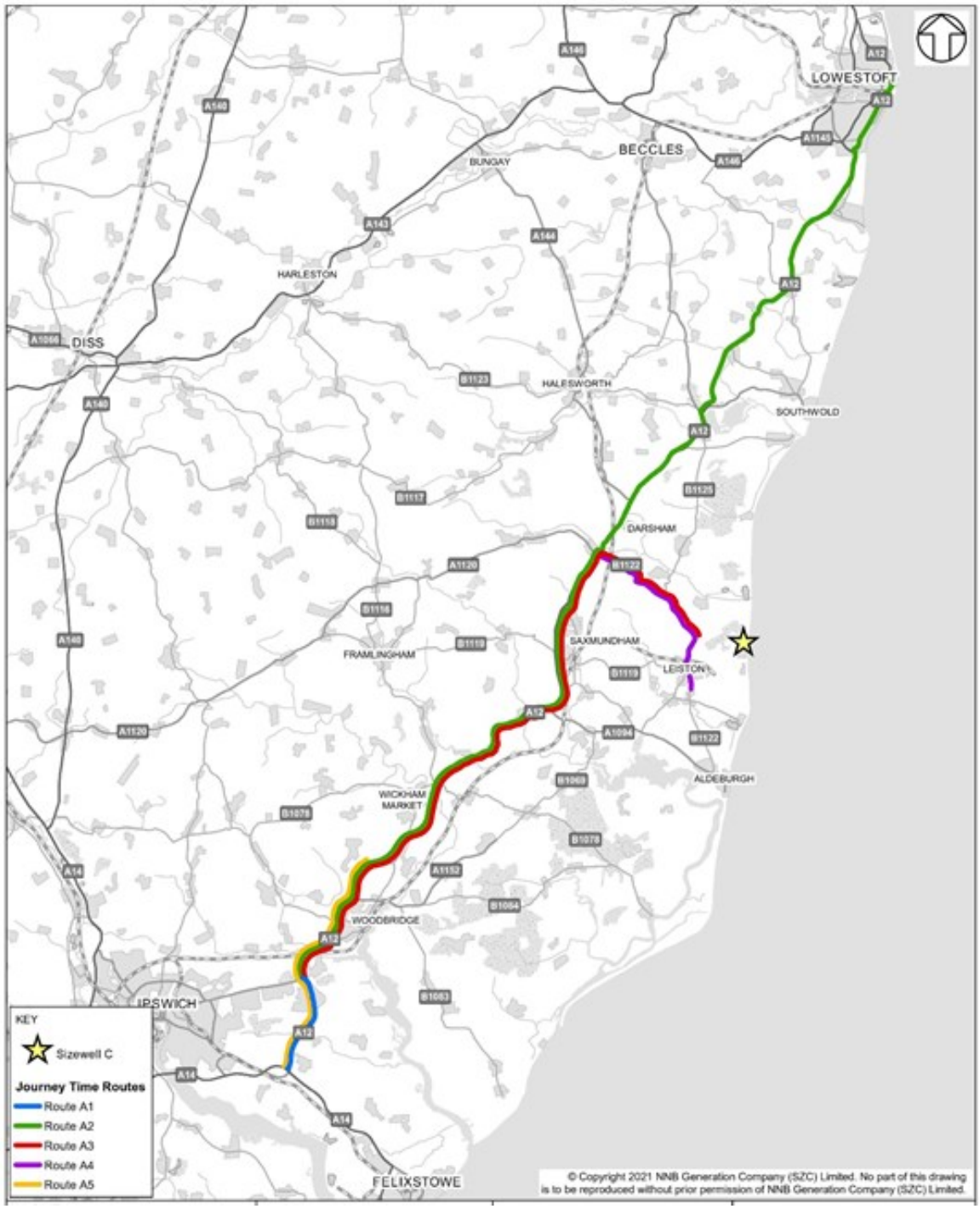


Plate 8.5: Additional journey time comparison routes



i. 2023 early years

8.2.29 The comparative modelled journey times of each route, during the existing network peaks of 08:00–09:00 and 17:00–18:00 hours, are presented in

Table 8.10 and **Table 8.11** respectively for the early years construction phase. These tables replace **Table 8.11** and **Table 8.12** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.30 Full tables for all seven modelled hours, including the cumulative scenario, are presented in **Appendix 8C** of this chapter. **Appendix 8C** also contains time-distance graphs for each route, for 0800:09:00 hours and 17:00-18:00 hours.

Table 8.10: 2023 early years – journey times 08:00-09:00 hours (Refined DCO)

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2023 Reference Case.	Seconds	%
				2023 Early Years.	
1	EB	21:06	22:21	5	0%
	WB	20:35	21:37	3	0%
2	NB	30:23	32:01	59	3%
	SB	32:58	36:34	34	2%
3	NB	25:55	25:56	4	0%
	SB	26:08	26:13	4	0%
4	EB	39:00	39:05	-4	0%
	WB	38:57	39:04	-10	0%
5	EB	37:35	37:43	-3	0%
	WB	37:17	37:26	7	0%
6	NB	23:07	23:13	0	0%
	SB	22:20	22:27	0	0%
7	NB	27:31	27:21	1	0%
	SB	27:44	27:47	4	0%
8	NB	31:48	32:30	22	1%
	SB	34:18	37:07	24	1%
9	EB	26:57	27:05	1	0%
	WB	27:22	28:07	4	0%
10	NB	31:26	31:42	2	0%
	SB	32:07	32:38	5	0%
11	NB	04:40	04:48	7	2%
	SB	06:48	07:43	8	2%
12	NB	08:50	08:52	-1	0%
	SB	08:34	08:47	1	0%
A1	NB	03:21	03:38	11	5%
	SB	03:27	05:11	15	5%
A2	NB	59:47	01:01:34	46	1%
	SB	53:06	54:31	20	1%
A3	NB	30:25	30:57	43	2%
	SB	33:08	34:30	12	1%

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2023 Reference Case.	Seconds	%
				2023 Early Years.	
A4	NB	12:11	12:11	-8	-1%
	SB	12:01	12:01	-4	-1%
A5	NB	09:55	10:27	30	5%
	SB	12:37	15:21	25	3%

Table 8.11: 2023 early years – journey times 17:00-18:00 hours (Refined DCO)

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2023 Reference Case.	Seconds	%
				2023 Early Years.	
1	EB	20:59	21:48	3	0%
	WB	20:36	22:03	10	1%
2	NB	32:06	34:48	42	2%
	SB	29:59	34:10	85	4%
3	NB	26:22	26:14	34	2%
	SB	25:51	25:53	4	0%
4	EB	38:59	39:04	-5	0%
	WB	38:38	38:46	-1	0%
5	EB	37:40	37:45	-7	0%
	WB	37:01	37:11	15	1%
6	NB	23:12	23:21	3	0%
	SB	22:14	22:16	0	0%
7	NB	27:07	27:09	10	1%
	SB	27:49	27:47	1	0%
8	NB	33:37	35:53	27	1%
	SB	31:25	34:32	45	2%
9	EB	27:02	27:15	6	0%
	WB	27:10	27:34	6	0%
10	NB	30:54	31:01	-2	0%
	SB	31:19	31:35	5	0%
11	NB	06:16	06:32	2	1%
	SB	04:11	04:19	25	10%
12	NB	08:50	08:50	0	0%
	SB	08:10	08:12	1	0%
A1	NB	03:26	04:15	0	0%
	SB	03:24	06:09	15	4%
A2	NB	54:08	56:31	32	1%
	SB	49:58	50:34	64	2%
A3	NB	32:09	33:45	39	2%
	SB	30:09	30:43	62	3%

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2023 Reference Case.	Seconds	%
				2023 Early Years.	
A4	NB	12:12	12:12	-1	0%
	SB	11:56	11:57	-6	-1%
A5	NB	11:41	13:47	33	4%
	SB	09:49	12:45	44	6%

8.2.31 The changes in journey time in the early years of construction are not materially different to those reported in **Table 8.11** and **Table 8.12** in the **Transport Assessment** (Doc Ref. 8.5) [AS-017].

8.2.32 The impacts of Sizewell C are marginally increased on the A12 northbound in the 08:00-09:00 hour, shown in routes 2, 8, A2 and A3, though the relative impacts compared to the reference case are still less than 3% over the length of the routes. This is considered to be well within 'daily variation' of journey times, i.e. how much a journey time can vary on a day-to-day basis.

8.2.33 Department for Transport (DfT) Trafficmaster data, which provided the 2015 observed journey times on routes 1 to 10 as described in **Appendix 8A** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], provides minimum and maximum observed times as well as average observed times across the reported dates, for each section of road in the database and for each of the seven assessed hours. This demonstrates how much journey times have been observed to vary; whilst it differs across road sections and time periods, the data, which is presented in **Appendix 8D** of this chapter, indicates an average level of journey time variability of around 14%.

8.2.34 The impacts of Sizewell C on the assessed journey time routes are well within this range (less than 5% apart from the very short section around Woodbridge shown by route 11), indicating that on the whole such impacts are unlikely to be distinguishable from typical daily fluctuations. These changes are reflected in the journey time graphs presented in **Appendix 8C** of this chapter.

8.2.35 SZC Co. agreed with Suffolk County Council to undertake a detailed traffic micro-simulation study (VISSIM) of the A12 between Ipswich and Woodbridge to further inform the assessment of journey times. This assessment is reported in **Chapter 9** of this addendum.

ii. 2028 peak construction

8.2.36 Modelled journey times during the network peak hours of 08:00–09:00 and 17:00–18:00 are presented in **Table 8.12** and **Table 8.13**, respectively, for the peak construction phase. These tables replace **Table 8.13** and **Table 8.14** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.37 Full tables for all seven modelled hours, including the cumulative scenarios, are presented in **Appendix 8C** of this chapter. **Appendix 8C** also contains time-distance graphs for each route, for 0800:09:00 hours and 17:00-18:00 hours.

Table 8.12: 2028 peak construction – journey times 08:00-09:00 hours (Refined DCO)

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.			
				Seconds	%	Seconds	%
		2015 Base Year.	2028 Reference Case.	2028 Peak Construction (Typical Day).		2028 Peak Construction (Busiest Day).	
1	EB	21:06	22:50	1	0%	1	0%
	WB	20:35	21:58	-1	0%	14	1%
2	NB	30:23	33:16	58	3%	87	4%
	SB	32:58	38:51	7	0%	46	2%
3	NB	25:55	26:01	10	1%	10	1%
	SB	26:08	26:13	13	1%	15	1%
4	EB	39:00	39:06	-63	-3%	-59	-3%
	WB	38:57	39:11	-79	-3%	-76	-3%
5	EB	37:35	37:44	-5	0%	-5	0%
	WB	37:17	37:34	6	0%	9	0%
6	NB	23:07	23:20	1	0%	1	0%
	SB	22:20	22:27	1	0%	1	0%
7	NB	27:31	27:26	4	0%	4	0%
	SB	27:44	27:50	-1	0%	-1	0%
8	NB	31:48	33:20	62	3%	84	4%
	SB	34:18	38:47	24	1%	52	2%
9	EB	26:57	27:10	4	0%	4	0%
	WB	27:22	29:50	-29	-2%	17	1%
10	NB	31:26	31:57	0	0%	1	0%
	SB	32:07	32:57	-1	0%	-1	0%
11	NB	04:40	04:53	1	0%	2	1%
	SB	06:48	08:10	17	3%	17	3%
12	NB	08:50	08:55	-2	0%	-2	0%
	SB	08:34	09:03	0	0%	-1	0%
A1	NB	03:21	04:08	16	6%	33	13%
	SB	03:27	06:20	2	1%	30	8%

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.			
		2015 Base Year.	2028 Reference Case.	Seconds	%	Seconds	%
				2028 Peak Construction (Typical Day).		2028 Peak Construction (Busiest Day).	
A2	NB	59:47	54:30	60	2%	72	2%
	SB	53:06	55:02	19	1%	21	1%
A3	NB	30:25	31:25	-141	-7%	-126	-7%
	SB	33:08	35:00	-180	-9%	-181	-9%
A4	NB	12:11	12:11	-78	-11%	-77	-11%
	SB	12:01	12:01	-64	-9%	-60	-8%
A5	NB	09:55	11:16	61	9%	84	12%
	SB	12:37	17:02	22	2%	50	5%

Table 8.13: 2028 peak construction – journey times 17:00-18:00 hours (Refined DCO)

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.			
		2015 Base Year.	2028 Reference Case.	Seconds	%	Seconds	%
				2028 Peak Construction (Typical Day).		2028 Peak Construction (Busiest Day).	
1	EB	20:59	22:23	3	0%	5	0%
	WB	20:36	22:29	5	0%	2	0%
2	NB	32:06	35:50	4	0%	13	1%
	SB	29:59	35:54	68	3%	91	4%
3	NB	26:22	26:27	12	1%	13	1%
	SB	25:51	25:57	10	1%	10	1%
4	EB	38:59	39:09	-69	-3%	-68	-3%
	WB	38:38	38:50	-72	-3%	-72	-3%
5	EB	37:40	37:51	-8	0%	-8	0%
	WB	37:01	37:14	14	1%	14	1%
6	NB	23:12	23:31	4	0%	4	0%
	SB	22:14	22:16	1	0%	1	0%
7	NB	27:07	27:10	10	1%	10	1%
	SB	27:49	27:46	-3	0%	-3	0%
8	NB	33:37	36:33	14	1%	21	1%
	SB	31:25	35:36	79	4%	102	5%
9	EB	27:02	27:26	6	0%	7	0%
	WB	27:10	27:52	21	1%	25	1%
10	NB	30:54	31:01	0	0%	2	0%
	SB	31:19	31:54	3	0%	3	0%
11	NB	06:16	06:55	10	2%	15	4%
	SB	04:11	04:31	60	22%	74	27%
	NB	08:50	08:53	0	0%	0	0%

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.			
		2015 Base Year.	2028 Reference Case.	Seconds	%	Seconds	%
				2028 Peak Construction (Typical Day).		2028 Peak Construction (Busiest Day).	
12	SB	08:10	08:13	1	0%	3	1%
A1	NB	03:26	03:53	4	2%	4	2%
	SB	03:24	06:53	12	3%	21	5%
A2	NB	54:08	56:57	14	0%	22	1%
	SB	49:58	50:55	63	2%	80	3%
A3	NB	32:09	34:50	-182	-9%	-173	-8%
	SB	30:09	31:03	-127	-7%	-110	-6%
A4	NB	12:12	12:13	-71	-10%	-71	-10%
	SB	11:56	11:57	-69	-10%	-68	-9%
A5	NB	11:41	14:26	15	2%	22	3%
	SB	09:49	13:45	74	9%	98	12%

8.2.38 A similar picture is shown in the peak construction assessment in that the impacts of Sizewell C are not materially different to those reported in **Table 8.13** and **Table 8.14** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], and the changes are reported in the same locations, i.e. the A12 routes 2, 8, A1, A2 and A5.

8.2.39 At peak construction journey times would be reduced on route A3 as traffic travelling between the main development site and the A12 would use the proposed Sizewell link road, avoiding Yoxford, instead of the existing B1122. Reductions would also occur on routes 4 and A4, which follow the B1122 between Leiston and A12 at Yoxford Junction – as traffic would use the faster Sizewell link road to bypass Theberton and Middleton Moor, rejoining the B1122 via the Middleton Moor Link.

8.2.40 As in the early years, the impacts of Sizewell C are marginally increased on the A12 northbound in the 08:00-09:00 hour, and southbound in the 17:00-18:00 hour, though the relative impacts compared to the reference case are still generally less than 5% over the length of the routes. An increase of 1m 14s is shown on the A12 between Seven Hills and the A1152 from reference case to peak construction on a typical day (1m 38s on the busiest day), which is represented by route A5. The changes on this section are reflected in the journey time graphs presented for routes 2, 8, A1, A2 and A5 in **Appendix 8C** of this chapter, and more detailed assessment of journey times along this stretch is provided through the A12 micro-simulation study discussed in **Chapter 9** of this addendum. The increase on this stretch of road in route 3 is offset by the reduction in journey time induced by the implementation of the Sizewell link road.

iii. 2034 operational traffic

8.2.41 Modelled journey times during the network peak hours of 08:00–09:00 and 17:00–18:00 hours are presented in **Table 8.14** and **Table 8.15** respectively for the operational phase. These tables replace **Table 8.15** and **Table 8.16** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.42 Similar tables for the other modelled hours are presented in **Appendix 8C** of this chapter. **Appendix 8C** also contains time-distance graphs for each route, for 0800:09:00 hours and 17:00-18:00 hours.

Table 8.14: 2034 operational traffic – journey times 08:00-09:00 hours (Refined DCO)

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2034 Reference Case.	Seconds	%
				2034 Operational Traffic.	
1	EB	21:06	23:07	-2	0%
	WB	20:35	22:36	4	0%
2	NB	30:23	34:43	7	0%
	SB	32:58	41:43	-106	-4%
3	NB	25:55	26:05	8	1%
	SB	26:08	26:13	9	1%
4	EB	39:00	39:12	-68	-3%
	WB	38:57	39:21	-70	-3%
5	EB	37:35	37:50	-5	0%
	WB	37:17	37:49	5	0%
6	NB	23:07	23:30	0	0%
	SB	22:20	22:29	0	0%
7	NB	27:31	27:26	3	0%
	SB	27:44	27:53	-3	0%
8	NB	31:48	34:40	27	1%
	SB	34:18	41:22	-82	-3%
9	EB	26:57	27:31	-8	0%
	WB	27:22	31:51	-61	-3%
10	NB	31:26	32:15	-4	0%
	SB	32:07	33:10	2	0%
11	NB	04:40	04:54	0	0%
	SB	06:48	08:46	-21	-4%
12	NB	08:50	08:54	1	0%
	SB	08:34	09:06	-4	-1%
A1	NB	03:21	05:34	-26	-8%
	SB	03:27	08:14	-63	-13%
	NB	59:47	56:14	301	9%

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2034 Reference Case.	Seconds	%
				2034 Operational Traffic.	
A2	SB	53:06	55:40	-31	-1%
A3	NB	30:25	31:26	-150	-8%
	SB	33:08	35:38	-228	-11%
A4	NB	12:11	12:11	-68	-9%
	SB	12:01	12:02	-67	-9%
A5	NB	09:55	12:36	18	2%
	SB	12:37	19:35	-85	-7%

Table 8.15: 2034 operational traffic – journey times 17:00-18:00 hours (Refined DCO)

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2034 Reference Case.	Seconds	%
				2034 Operational Traffic.	
1	EB	20:59	23:24	-2	0%
	WB	20:36	23:11	-1	0%
2	NB	32:06	37:07	-18	-1%
	SB	29:59	38:56	-12	-1%
3	NB	26:22	26:26	3	0%
	SB	25:51	26:01	10	1%
4	EB	38:59	39:11	-75	-3%
	WB	38:38	39:01	-82	-4%
5	EB	37:40	37:53	-8	0%
	WB	37:01	37:26	7	0%
6	NB	23:12	23:48	0	0%
	SB	22:14	22:17	0	0%
7	NB	27:07	27:12	3	0%
	SB	27:49	27:48	-4	0%
8	NB	33:37	37:22	0	0%
	SB	31:25	38:11	9	0%
9	EB	27:02	27:49	1	0%
	WB	27:10	29:01	7	0%
10	NB	30:54	31:07	0	0%
	SB	31:19	32:19	1	0%
11	NB	06:16	06:58	1	0%
	SB	04:11	05:35	8	2%
12	NB	08:50	08:54	0	0%
	SB	08:10	08:17	-1	0%
A1	NB	03:26	04:03	1	0%
	SB	03:24	06:58	3	1%

Route	Direction	Average Journey Time (mm:ss).		Difference from Reference Case.	
		2015 Base Year.	2034 Reference Case.	Seconds	%
				2034 Operational Traffic.	
A2	NB	54:08	57:36	-14	0%
	SB	49:58	53:36	-5	0%
A3	NB	32:09	35:30	-202	-9%
	SB	30:09	33:38	-203	-10%
A4	NB	12:12	12:14	-76	-10%
	SB	11:56	11:57	-75	-10%
A5	NB	11:41	15:15	0	0%
	SB	09:49	16:18	8	1%

8.2.43 During the operational phase, the impacts of Sizewell C are not materially different to those reported in **Table 8.15** and **Table 8.16** in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.2.44 As at peak construction, journey times would be reduced on routes 4, A3 and A4 as traffic travelling between the main development site and the A12 would use the proposed Sizewell link road instead of the existing B1122.

d) Sensitivity test – 100% of HGVs from south

8.2.45 For the assessment presented in **Section 8.2** of this chapter, the assumed distribution of Sizewell C HGVs on the A12, which is unchanged from the DCO, is as follows:

- 85% from the south; and
- 15% from the north.

8.2.46 Further work has been undertaken by SZC Co.'s supply chain partners, which has led to more certainty on the likely source of principal materials, although there remain choices to be made during the procurement negotiations. The further detail on likely material sources and mode share (i.e. road, rail, marine) is summarised in the **Freight Management Strategy** (Doc Ref 8.18).

8.2.47 As set out in the **Freight Management Strategy** (Doc Ref 8.18), it is not economic to load smaller or specialist materials onto rail or sea and these are therefore likely to arrive by road to the main development site. These types of materials include consumables, PPE fuels, oil, greases, timber, skips, lifting and construction equipment, small plant, general stores, and catering/food supplies. Based on the more detailed work, the HGV distribution assessed within the **Transport Assessment** (Doc Ref. 8.5(A))

[AS-017] is still considered to be reasonable and takes account of these smaller materials as well as locally supplied materials.

8.2.48 However, a sensitivity test has been undertaken based on 100% of HGVs from the A12 south in order to understand if an alternative HGV distribution would result in any changes to the effects summarised in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] or the environmental assessment on transport in **Volume 2**, **Chapter 10** of the **Environmental Statement ('ES')** (Doc Ref. 6.3) [APP-198]).

8.2.49 The sensitivity test with 100% of the Sizewell C HGVs from the south is summarised in **Appendix 8E** of this chapter. It is considered that, in operational terms, the additional HGVs from the south would not cause road capacity to be exceeded on any of the affected roads, though it is noted that the A12 at Woodbridge is already congested in the base year and will worsen in future years, without Sizewell C. Impacts on noise and vibration, air quality and transport effects of this sensitivity test are discussed in **Volume 1, Chapter 3** of the **ES Addendum** (Doc Ref. 6.14).

8.2.50 An assessment of this sensitivity test has also been undertaken using the VISSIM micro-simulation model of the A12 corridor between the Seven Hills junction and Woodbridge, which is summarised in **Appendix 9C** of **Chapter 9** of this addendum.

8.3 Assessment of the proposed changes to the potential for greater rail and marine freight transport – link flows

a) 2028 peak construction

8.3.1 This section describes the peak construction traffic with the proposed changes to rail and marine capacity, under the preferred option which comprises changes 1 and 2 described in the updated **Freight Management Strategy** (Doc. Ref. 8.18), which would result in fewer HGV movements by road than the outcome from the proposed Integrated Freight Strategy presented in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.3.2 The changes to Sizewell C traffic inputs resulting from these proposed changes are set out in **Chapter 7** of this addendum, and these have been assessed through a manual adjustment to the traffic link flows reported in **Table 8.6** and **Table 8.7**, to reflect the reduced Sizewell C HGV volumes in the relevant locations. **Table 8.16** and **Table 8.17** present the 24-hour AAWT traffic flow (rounded to 50 vehicles) and peak hour traffic flow changes (rounded to 10 vehicles), respectively, for the peak construction phase with the proposed changes to the rail and marine capacity (changes 1 and 2) under the preferred option set out in the **Freight Management Strategy** (Doc. Ref. 8.18).

8.3.3 **Table 8.18** shows the changes in Sizewell C traffic volumes with the proposed changes to the rail and marine capacity, in comparison with the Refined DCO scenario presented in **Table 8.6** and **Table 8.7**, at daily (24-hour) level and in the network peak hours. Flows are rounded to 50 vehicles for 24-hour AAWT, and 10 vehicles for the peak hours.

Table 8.16: 2028 peak construction (proposed changes 1 and 2) – forecast daily (24-hour) AAWT traffic flows

Location		2015 Base Year.	2028 Reference Case.	2028 Peak Construction.				2028 Peak Construction 'Cumulative'.			
				Typical Day.		Busiest Day.		Typical Day.		Busiest Day.	
				SZC Traffic.	Total Traffic.	SZC Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.	Scottish Power Traffic.	Total Traffic.
B1122 east of Yoxford.	R	3,450	4,300	650	4,500	700	4,550	50	4,550	50	4,600
A14 south of Ipswich west of Seven Hills	S	57,300	65,600	1,250	66,250 - 66,850	1,400	66,150 - 67,000	200	66,000 - 67,050	200	66,000 - 67,200
A14 east of Seven Hills.	T	44,350	50,850	200	50,950 - 51,050	200	50,900 - 51,050	50	50,950 - 51,100	50	50,950 - 51,100
A12 Wrentham.	V	9,800	10,200	1,250	11,350 - 11,450	1,300	11,350 - 11,500	150	11,450 - 11,600	150	11,450 - 11,650
A12 Blythburgh.	W	10,400	11,350	1,900	13,100 - 13,250	1,950	13,050 - 13,300	150	13,200 - 13,400	150	13,200 - 13,450
A12 north of northern park and ride	X	14,000	15,600	2,600	18,100 - 18,200	2,650	18,100 - 18,250	100	18,100 - 18,300	100	18,100 - 18,350
A12 south of southern park and ride	Z	24,550	27,500	2,400	29,450 - 29,900	2,550	29,450 - 30,050	350	29,550 - 30,250	350	29,450 - 30,400
A12 Woodbridge.	AA	36,300	39,450	2,150	40,100 - 41,600	2,300	39,850 - 41,750	300	39,650 - 41,900	300	39,350 - 42,050
A12 Marlesford.	AB	18,800	21,950	1,500	23,200 - 23,450	1,650	23,250 - 23,600	400	23,450 - 23,850	400	23,450 - 24,000
Two village bypass.	AE	-	-	1,450	22,300	1,650	22,350	400	22,550	400	22,550
Sizewell link road south of Theberton	AF	-	-	2,100	8,400	2,300	8,550	250	8,650	250	8,750
Sizewell link road east of A12.	AG	-	-	1,050	2,250	1,250	2,400	100	1,150 - 2,300	100	1,300 - 2,450

Table 8.17: 2028 peak construction (proposed changes 1 and 2) – percentage change in network peak hours

Location		08:00–09:00					17:00–18:00				
		2028 Reference Case.	2028 Peak Construction.				2028 Reference Case.	2028 Peak Construction.			
			Typical Day.	% Change	Busiest Day.	% change		Typical Day.	% Change	Busiest Day.	% Change
B1122 east of Yoxford.	R	310	310	-1%	310	Less than 1%	310	310	-1%	310	Less than 1%
A14 south of Ipswich west of Seven Hills	S	5,200	5,210	Less than 1%	5,220	1%	5,360	5,340	0%	5,270	-2%
A14 east of Seven Hills.	T	3,840	3,840	0%	3,830	0%	4,100	4,100	0%	4,100	0%
A12 Wrentham.	V	750	780	3%	770	3%	820	850	4%	850	4%
A12 Blythburgh.	W	860	900	4%	890	4%	870	960	10%	950	9%
A12 north of northern park and ride.	X	1,110	1,170	5%	1,170	5%	1,290	1,420	10%	1,410	10%
A12 south of southern park and ride.	Z	2,200	2,260	3%	2,260	3%	2,090	2,170	4%	2,160	3%
A12 Woodbridge.	AA	3,000	2,960	-1%	2,920	-3%	3,070	3,030	-1%	3,000	-2%
A12 Marlesford.	AB	1,630	1,700	4%	1,700	4%	1,730	1,810	5%	1,810	5%
Two village bypass.	AE	-	1,620	-	1,620	-	-	1,750	-	1,750	-
Sizewell link road south of Theberton	AF	-	550	-	560	-	-	580	-	590	-
Sizewell link road east of A12.	AG	-	150	-	160	-	-	180	-	180	-

Table 8.18: 2028 peak construction (proposed changes 1 and 2) – difference in Sizewell C traffic from proposed development

Location		Proposed change to FMS vs. Proposed development.					
		Typical Day.			Busiest Day.		
		24hr AAWT.	08:00-09:00.	17:00-18:00.	24hr AAWT.	08:00-09:00.	17:00-18:00.
B1122 east of Yoxford.	R	-50	0	-10	-50	0	-10
A14 south of Ipswich west of Seven Hills.	S	-100	-10	-20	-200	0	-10
A14 east of Seven Hills.	T	0	0	0	0	0	0
A12 Wrentham.	V	-50	0	-10	0	0	0
A12 Blythburgh.	W	0	0	0	0	0	-10
A12 north of northern park and ride.	X	-50	-10	0	-50	0	-10
A12 south of southern park and ride.	Z	-150	-10	-20	-300	-10	-20
A12 Woodbridge.	AA	-150	-10	-20	-250	-10	-10
A12 Marlesford.	AB	-100	-10	-20	-250	-10	-10
Two village bypass.	AE	-150	-10	-20	-250	-10	-10
Sizewell link road south of Theberton.	AF	-150	-10	-20	-300	-10	-20
Sizewell link road east of A12.	AG	-150	-10	-20	-250	0	-20

8.3.4 Compared with the Refined DCO flows presented in **Table 8.6** and **Table 8.7**, there would be reductions in traffic impact on the B1122 east of Yoxford, the Sizewell link road, the A12 and A14, as these routes would carry fewer Sizewell C HGVs.

8.3.5 To the north of the B1122, which is assumed to carry around 15% of the Sizewell C HGVs, the reduction in daily two-way flow would be around 23 vehicles on a typical day and 45 vehicles on the busiest day. To the south of the Sizewell link road, which is assumed to carry around 85% of the Sizewell C HGVs, the reduction in daily two-way flow would be around 128 vehicles on a typical day and 255 vehicles on the busiest day. On the Sizewell link road approaching the site, combining all of the Sizewell C HGVs, there would be a reduction of around 150 vehicles on a typical day and 300 vehicles on the busiest day.

8.3.6 Since the strategic models have not been reassigned for this assessment, as the change in traffic flows and reassignment at an hourly level would be relatively small in percentage change terms, journey time analysis is not reported. The impact on journey times and delays, of the proposed changes to the rail and marine capacity (changes 1 and 2) under the preferred option set out in the **Freight Management Strategy** (Doc Ref. 8.18), has been assessed in the microsimulation model of the A12 corridor which is described in **Appendix 9C** of **Chapter 9** of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad).

8.3.7 There would also be other environmental benefits which are described in **Volume 1, Chapter 2** of the **ES Addendum** (Doc Ref. 6.14).

8.4 Summary

8.4.1 Following the DCO Application (May 2020), and as part of on-going discussions with stakeholders lead by Suffolk County Council, refinements have been made to the Sizewell C strategic traffic modelling which informed the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] and **Volume 2, Chapter 10** of the **Environment Statement** (Doc Ref. 6.3) [APP-198].

8.4.2 The 2015 base model has been adjusted and revalidated using additional survey data in the area around Woodbridge to refine the model representation in this area. A technical note describing the Woodbridge refinement to the 2015 base model validation is provided in **Appendix 8A** of this chapter. For completeness the minor changes to the 2015 base model have subsequently been applied to all forecast year strategic model scenarios to form the basis of this refined assessment.

8.4.3 Further refinements have been made to the Sizewell C traffic inputs to the early years and peak construction phases, and these are described in **Chapter 7** of this addendum.

8.4.4 Analysis of the likely impacts on daily traffic flows and journey times has been undertaken and is presented in **Section 8.2** of this chapter. Overall the differences in traffic flows and journey times forecast by the refined models are small, and there is no material change to the assessment of traffic flow changes reported in **Chapter 8** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. The displacement of trips away from the A12, due to congestion at Woodbridge, is reduced compared with the assessment presented in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

8.4.5 The assumed distribution of Sizewell C HGVs on the A12, which is unchanged from the DCO, is as follows:

- 85% from the south; and
- 15% from the north.

8.4.6 A sensitivity test has been undertaken with 100% of the Sizewell C HGVs from the south, and this assessment is presented in **Appendix 8E** of this chapter.

8.4.7 As set out in **Chapter 4** of this addendum, SZC Co. have considered a range of options for the delivery of materials to the main development site as described in the updated **Freight Management Strategy** (Doc Ref. 8.18). The preferred option, comprising changes 1 and 2, would provide additional rail and marine capacity, which would result in fewer HGV movements by road when compared to the DCO Application (May 2020). An assessment of the change in link flows has been carried out and reported in **Section 8.3** of this chapter. The assessment concluded that the reduction in Sizewell C HGVs on the highway network would be small in terms of traffic flow proportions, but that the proposed change would derive other environmental benefits as reported in **Volume 1, Chapter 3** of the **ES Addendum** (Doc Ref. 6.14), as well as improvements in traffic conditions that have been assessed through the microsimulation model of the A12 corridor, summarised in **Chapter 9** of this **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad).

9 DETAILED TRAFFIC MODELLING

9.1 Background

9.1.1 Since the submission of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] with the DCO Application (May 2020), SZC Co. has continued to refine the detailed traffic modelling (i.e. junction models and the Yoxford micro-simulation model) to address Suffolk County Council (SCC) comments, and also to incorporate revised traffic flows from the refined strategic transport model (VISUM) detailed in **Chapters 7** and **8** of this **Transport Assessment Addendum** (Doc Ref. 8.5Ad). This is referred to as the 'Refined DCO' assessment within this chapter.

9.1.2 All of the junctions that have undergone a junction assessment are shown in **Plate 9.1** of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017]

9.1.3 First, this chapter summarises the Refined DCO junction assessment based on the refined information summarised in **Chapters 7** and **8**. The Refined DCO assessment summarised in this chapter is based on the same scenarios modelled in the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017], namely:

- **2023 Reference Case** (with Sizewell B outage, with Scottish Power).
- **2023 Early Years** (with Sizewell B outage, with early years Sizewell C construction traffic, with Scottish Power).
- **2028 Reference Case** (with Sizewell B outage, with Scottish Power).
- **2028 Peak Construction** (with Sizewell B outage, with peak Sizewell C construction traffic 'busiest day' (1,000 two-way HGV movements), with Scottish Power).
- **2034 Reference Case** (with Sizewell B outage).
- **2034 Operational Phase** (with Sizewell B outage, with operational Sizewell C traffic, post construction).

9.1.4 In addition, through ongoing engagement with SCC since the DCO Application was submitted, it was agreed that SZC Co. would undertake a detailed traffic micro-simulation modelling study of the A12 corridor between the A14 Seven Hills interchange and the A1152 junction at Melton. The purpose of this model is to inform a more detailed assessment of traffic conditions expected on the A12 corridor during Sizewell C construction by considering the effects of traffic over the fully

modelled period as well as allowing for the interaction of traffic between junctions to be assessed to establish the effects on journey times.

9.1.5 The A12 VISSIM (microsimulation software) model has been used to supplement the Refined DCO junction capacity assessment for the A12 corridor. The VISSIM model results for the Refined DCO assessment are presented alongside the individual junction model results for junctions along the A12 corridor between the Seven Hills and Melton junction. Where junctions have been assessed in both VISSIM and as stand-alone junctions (i.e. using Junctions9 or LinSig software), the VISSIM results should be more heavily relied on as VISSIM is a more reliable modelling tool for corridors nearing capacity.

9.1.6 Finally, this chapter also considers the reduced HGV flows resulting from the changes 1 and 2 described in the **Freight Management Strategy** (Doc. Ref. 8.18) and summarised in **Chapter 4** of this **Transport Assessment Addendum** (Doc. Ref. 8.5(A)Ad). It is only the A12 corridor VISSIM model that has been used to assess the effects of the reduced HGV volumes during peak construction resulting from the proposed changes described in the **Freight Management Strategy** (Doc. Ref. 8.18). For all other junctions within the study area, only the Refined DCO busiest day scenario at peak construction (i.e. 1,000 two-way HGV movements) has been assessed in terms of junction capacity as this provides a worst case assessment.

9.2 Model updates

9.2.1 **Chapter 8** of this **Transport Assessment Addendum** (Doc. Ref. 8.5(A)Ad) summarises the updates that have been made to the strategic traffic model since the DCO Application (May 2020) was submitted.

9.2.2 Checks have been made to determine whether the magnitude of strategic model flow changes were significant enough to warrant re-running the junction models. Checks have also been made to confirm which of the junction models have had parameters (mainly visibilities and re-calibration of intercepts, plus a small number of major road widths) adjusted after the DCO Application (May 2020) submission. These two checks have led to the following decision-making process being used to determine which of the junction models should be re-run (see **Table 9.1**).

Table 9.1: Criteria for deciding whether to produce revised junction model results

Category	Have the junction model parameters changed?	Have the VISUM flows changed significantly*?	Proposed approach
1	No	No	No further junction modelling required. The **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] results and conclusions still apply.
2	No	Yes	Re-run the latest junction model with the revised flows from VISUM and present new results in this addendum.
3	Yes	No	
4	Yes	Yes	

*Significantly has been defined as an increase in flows on any arm of more than 20 vehicles per hour, or a notable decrease in flows that has the potential to change the conclusions.

9.2.3 The location of the junctions that have been assessed are shown in Plate 9.1 of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017].

9.2.4 Following the process in **Table 9.1** three of the junctions were found to fall within category 1 and therefore have not been updated and revised results are not presented within this addendum. The results presented **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] therefore still apply for these junctions. The junctions that fall into this category and have not been updated are:

- Junction 7: A12 / B1119, Saxmundham (6 models of the junction)
- Junction 33: A12 / B1438, Ufford (1 Design Manual for Roads and Bridges (DMRB) capacity assessment)
- Junction 36b: A12 southbound off-slip / Main Road, Kelsale (1 model)

9.2.5 Forty-five junctions were found to fall into categories 2, 3 and 4 (i.e. 'significant' change in flows, and/or model parameters adjusted through consultation with SCC) and have subsequently been updated with revised traffic flows from VISUM. The revised DCO junction model results are summarised in **Appendix 9A**.

9.2.6 The VISUM model flow updates focussed on 2023 and 2028, however five junctions (J6, J8, J9, J14 and J45) were also re-assessed for the 2034

scenario using updated flows. The changes in 2034 flows since the DCO Application (May 2020) were small and therefore a targeted approach was applied to the 2034 assessment whereby the only junction models that were updated are those where:

- The junction has been scoped-in, i.e. the maximum recorded RFC exceeds 0.7 in at least one scenario or time period.
- Sizewell C flows are present in 2034 (i.e. 2034 impact is a possibility); and
- The flows have changed 'significantly' since the DCO Application (May 2020), which, for the purposes of this screening exercise, was taken to be an increase of more than 20vph on any arm.

9.2.7 The Yoxford VISSIM model covering the A12 corridor between the A1120 and the A144 has also been updated with the revised DCO flows. This model has also been adjusted slightly to address comments provided by SCC. The documentation for the Yoxford VISSIM model has been revised in line with these changes and is provided in **Appendix 9B**.

9.3 Scoping exercise

9.3.1 Within the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017], the results from each junction model were reviewed and junctions operating with sufficient spare capacity (maximum Ratio of Flow to Capacity – RFC of 0.7 or less) were scoped-out from any further analysis. This scoping-out process has been repeated based on the latest detailed traffic modelling results. The revised maximum RFCs and delays from each junction model are summarised in **Appendix 9A**. Nineteen junctions were found to result in RFCs below 0.7 and have been scoped-out of any further analysis within this chapter. The nineteen scoped out junctions are as follows:

- Junction 4a: B1069 / B1078 (Woodbridge Rd)
- Junction 4b: B1069 / B1078 (Snape Rd)
- Junction 10: B1122 / B1125 (2 models - existing and proposed layouts)
- Junction 12b: A1120 / A1120 slip road, Yoxford
- Junction 12c: A12 / A1120 slip road, Yoxford
- Junction 15: A12 northbound on-slip / Southern park and ride access
- Junction 30: A12 / Button's Rd / Glemhall

- Junction 31: A12 / A145
- Junction 32: A12 / A1095 (3 models, one for each T-junction)
- Junction 34a: B1078 / A12 northbound off-slip
- Junction 35: A12 / B1121 / Mitford Rd (3 models, one for each T-junction)
- Junction 36a: A12 / Main Rd
- Junction 37: A12 / B1387
- Junction 39: A12 / Marlesford Rd
- Junction 40: A12 / Bell Lane
- Junction 41: A1156 / Felixstowe Rd
- Junction 42: A12 / Sizewell Link Rd
- Junction 43: B1122 / Sizewell C main site access
- Junction 44: B1122 / Lover's Lane

9.3.2 The majority of these junctions were previously scoped-out within the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017]. The only exception is junction 29 which was previously scoped-out but is now scoped-in.

9.4 New junction models / corridor models

9.4.1 In addition to the junction models that were previously documented within **Chapter 9** of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017], the following new junction or micro-simulation corridor models have been produced:

- Junction 34bc: B1078 / A12 southbound slip roads – the two T-junction models (J34b and J34c) were replaced with a single staggered crossroads model to better represent the junction layout.
- Junction 22b: Proposed A12 / Brightwell Lakes access junction just north of Newbourne Road.
- An additional VISSIM model covering the A12 corridor between the A14 and the A1152 at Melton, referred to as the A12 VISSIM model. This model is intended to provide a more detailed assessment of the

operation of junctions 21 to 28. The VISSIM model is considered to produce a more reliable estimate of junction performance when a junction is near capacity whilst junction models become increasingly sensitive. In this state, junction models have a tendency to predict exponential increases in queues and delays due to small increases in demand. The VISSIM model is able to be calibrated to a much higher degree using travel times in addition to queue length data to achieve the closest possible representation of the road network. As the VISSIM model has fewer limitations than the junction models, a higher degree of confidence is placed in the VISSIM model results compared to the junction model results. The A12 corridor VISSIM model is documented in detail within **Appendix 9C** of this addendum.

9.4.2 All of these additional junction models fall into the 'scoped-in' category as the RFCs exceed 0.7 in at least one flow scenario. VISSIM is not able to estimate RFCs so the two VISSIM models are automatically considered to be scoped in.

9.4.3 All of the changes to the detailed traffic modelling that have occurred since the modelling documented within the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] are summarised in **Table 9.2**. Note that this table summarises the maximum RFCs predicted by the model and not the difference between the Reference Case and with-Sizewell scenarios.

Table 9.2: Summary of changes since DCO submission

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
1	A140 / B1078	Junctions 9	0.97	Scoped-in	Yes	Yes (-123 to +44)	0.98	Scoped-in
2	B1078 / B1079	Junctions 9	1.38	Scoped-in	Yes	Yes (-104 to +165)	1.16	Scoped-in
3	B1078 / B1116	Junctions 9	0.80	Scoped-in	Yes	Yes (-76 to +90)	0.71	Scoped-in
4a	B1069 / B1078 (Woodbridge Rd)	Junctions 9	0.23	Scoped-out	Yes	No (-51 to +15)	0.22	Scoped-out
4b	B1069 / B1078 (Snape Rd)	Junctions 9	0.49	Scoped-out	Yes	No (-53 to +14)	0.62	Scoped-out
5	B1069 / A1094 Snape Road, East (existing layout)	Junctions 9	1.09	Scoped-in	Yes	No (-28 to +16)	0.99	Scoped-in
5_miti	B1069 / A1094 Snape Road, East (proposed layout)	Junctions 9	1.06	Scoped-in	Yes	No (-28 to +16)	0.96	Scoped-in
5_miti_ No SPR	B1069 / A1094 Snape Road, East (proposed layout, SPR removed)	Junctions 9	0.87	Scoped-in	Yes	No (-28 to +8)	0.80	Scoped-in
6_miti	A12 / A1094 (proposed layout)	Junctions 9	0.84	Scoped-in	No	Yes (-49 to +60)	0.86	Scoped-in
7(N)a	A12 / B1119	Junctions 9	0.33	Scoped-in	No	No (-43 to +12)	Unchanged, see DCO	
7(N)a_miti	A12 / B1119 (proposed layout)	Junctions 9	0.31	Scoped-in	No	No (-43 to +12)	Unchanged, see DCO	
7(N)b	A12 / B1119	Junctions 9	0.33	Scoped-out	No	No (-49 to +1)	Unchanged, see DCO	
7(S)a	A12 / B1119	Junctions 9	0.65	Scoped-in	No	No (-50 to +14)	Unchanged, see DCO	

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
7(S)a_miti	A12 / B1119 (proposed layout)	Junctions 9	0.64	Scoped-in	No	No (-50 to +14)	Unchanged, see DCO	
7(S)b	A12 / B1119	Junctions 9	0.26	Scoped-out	No	No (-45 to +1)	Unchanged, see DCO	
8	B1121 / B1119, Saxmundham	Linsig	0.94	Scoped-in	Yes	No (-26 to +9)	0.94	Scoped-in
9	B1119 / B1122 / B1069, Leiston	Linsig	1.04	Scoped-in	No	Yes (-99 to +95)	1.06	Scoped-in
10	B1122 / B1125	Junctions 9	0.50	Scoped-out	Yes	No (-82 to 0)	0.44	Scoped-out
10_miti	B1122 / B1125 (proposed layout)	Junctions 9	0.09	Scoped-out	No	No (-91 to +204)	0.08	Scoped-out
11	A12 / A144	Yoxford VISSIM	n/a	Scoped-in	Yes	No (-17 to +11)	Appendix 9B	Scoped-in
12a	A12 / A1120	Junctions 9 and Yoxford VISSIM	0.80	Scoped-in	J9: No VISSIM: Yes	Yes (-28 to +26)	0.80 Appendix 9B	Scoped-in
12b	A12 / A1120	Junctions 9 and Yoxford VISSIM	0.12	Scoped-out	J9: No VISSIM: Yes	Yes (-156 to +3)	0.11 Appendix 9B	Scoped-out
12c	A12 / A1120	Junctions 9 and Yoxford VISSIM	0.20	Scoped-out	J9: No VISSIM: Yes	Yes (-79 to +61)	0.19 Appendix 9B	Scoped-out
13	A12 / B1122	Yoxford VISSIM	n/a	Scoped-in	J9: No VISSIM: Yes	No (-25 to +8)	Appendix 9B	Scoped-in

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
13_miti	A12 / B1122 (proposed layout)	Junctions 9 and Yoxford VISSIM	0.86	Scoped-in	J9: No VISSIM: Yes	No (-25 to +8)	0.87 Appendix 9B	Scoped-in
14	A1094 / B1069 Church Road	Junctions 9	0.87	Scoped-in	Yes	No (-33 to +15)	0.80	Scoped-in
15_miti	Southern Park & Ride Access (proposed layout)	Junctions 9	0.31	Scoped-out	Yes	Yes (-46 to +110)	0.25	Scoped-out
17_miti	Northern Park & Ride Access (proposed layout)	Yoxford VISSIM and Junctions 9	0.75	Scoped-in	No	Yes (-10 to +14)	0.74	Scoped-in
21	A12 / A14 / A1156 Seven Hills Interchange (existing layout)	Junctions 9	1.61	Scoped-in	Yes	Yes (-117 to +122)	1.26	Scoped-in
21_sens	A12 / A14 / A1156 Seven Hills Interchange (existing layout, no fuel and income)	Junctions 9	1.28	Scoped-in	Yes	Yes (-150 to +99)	1.01	Scoped-in
21_miti	A12 / A14 / A1156 Seven Hills Interchange (proposed signalisation scheme)	Linsig	1.78	Scoped-in	Yes	Yes (-117 to +122)	1.56	Scoped-in
21_miti_sens	A12 / A14 / A1156 Seven Hills Interchange (proposed signalisation scheme, no fuel & income)	Linsig and A12 VISSIM	1.81	Scoped-in	Yes	Yes (-150 to +99)	1.35 Appendix 9C	Scoped-in

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
22	A12 / Foxhall Road / Newbourne Road (existing layout)	Junctions 9	1.50	Scoped-in	Yes	Yes (-243 to +278)	2.23	Scoped-in
22_sens	A12 / Foxhall Road / Newbourne Road (existing layout, no fuel & income)	Junctions 9 and A12 VISSIM	1.52	Scoped-in	Yes	Yes (-194 to + 205)	2.19 Appendix 9C	Scoped-in
22_miti	A12 / Foxhall Road / Newbourne Road (proposed signalisation scheme)	Linsig	1.10	Scoped-in	Yes	Yes (-243 to +282)	1.75	Scoped-in
22_miti_sens	A12 / Foxhall Road / Newbourne Road (proposed signalisation scheme, no fuel & income)	Linsig and A12 VISSIM	1.02	Scoped-in	Yes	Yes (-194 to + 205)	1.18 Appendix 9C	Scoped-in
22b_miti	A12 / New Brightwell Lakes Access (proposed layout)	*NEW* Linsig	n/a	n/a	NEW	n/a	1.66	Scoped-in
22b_miti_sens	A12 / New Brightwell Lakes Access (proposed layout, no fuel & income)	*NEW* Linsig and A12 VISSIM	n/a	n/a	NEW	n/a	0.96 Appendix 9C	Scoped-in
23	A12 / Eagle Way / Barrack Square (existing layout)	Junctions 9	4.28	Scoped-in	Yes	Yes (-283 to +431)	1.30	Scoped-in
23_sens	A12 / Eagle Way / Barrack Square (existing layout, no fuel & income)	Junctions 9 and A12 VISSIM	4.21	Scoped-in	Yes	Yes (-271 to +231)	2.02 Appendix 9C	Scoped-in
23_miti	A12 / Eagle Way / Barrack Square + Gloster Rd (proposed layout)	Linsig	2.51	Scoped-in	Yes	Yes (-236 to +281)	1.74	Scoped-in
23_miti_sens	A12 / Eagle Way / Barrack Square + Gloster Rd (proposed layout + no fuel & income)	Linsig and A12 VISSIM	1.25	Scoped-in	Yes	Yes (-271 to +231)	1.38 Appendix 9C	Scoped-in

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
24	A12 / Eagle Way / Anson Rd (existing layout)	Junctions 9	1.59	Scoped-in	Yes	Yes (-301 to +234)	1.53	Scoped-in
24_sens	A12 / Eagle Way / Anson Rd (existing layout + no fuel & income)	Junctions 9 and A12 VISSIM	1.38	Scoped-in	Yes	Yes (-274 to +180)	1.23 Appendix 9C	Scoped-in
25	A12 / Main Road / P&R (existing layout)	Linsig	1.52	Scoped-in	No	Yes (-333 to +252)	2.11	Scoped-in
25_sens	A12 / Main Road / P&R (existing layout + no fuel & income)	Linsig and A12 VISSIM	1.22	Scoped-in	No	Yes (-236 to +213)	2.78 Appendix 9C	Scoped-in
26	A12 / B1438 (existing layout)	Junctions 9	1.19	Scoped-in	Yes	Yes (-196 to +163)	1.24	Scoped-in
26_sens	A12 / B1438 (existing layout + no fuel & income)	Junctions 9 and A12 VISSIM	1.16	Scoped-in	Yes	Yes (-247 to +105)	1.23 Appendix 9C	Scoped-in
27	A12 / B1079 Grundisburgh Road (existing layout)	Junctions 9	1.41	Scoped-in	Yes	Yes (-122 to +199)	1.38	Scoped-in
27_sens	A12 / B1079 Grundisburgh Road (existing layout + no fuel & income)	Junctions 9 and A12 VISSIM	1.42	Scoped-in	Yes	Yes (-145 to +205)	1.21 Appendix 9C	Scoped-in
28	A12 / A1152 Woods Lane (existing layout)	Junctions 9	1.09	Scoped-in	Yes	Yes (-110 to +222)	0.93	Scoped-in

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
28_sens	A12 / A1152 Woods Lane (existing layout + no fuel & income)	Junctions 9 and A12 VISSIM	1.06	Scoped-in	Yes	Yes (-123 to +240)	0.91 Appendix 9C	Scoped-in
29	A12 / New Road / Woodbridge Road	Junctions 9	0.65	Scoped-out	Yes	No (-554 to +340)	1.00	Scoped-in
30	A12 / Button's Rd / Glemham Hall	Junctions 9	0.34	Scoped-out	Yes	No (-135 to 0)	0.31	Scoped-out
31	A12 / A145	Junctions 9	0.41	Scoped-out	Yes	Yes (-131 to +31)	0.40	Scoped-out
32a	A12 / A1095 East	Junctions 9	0.00	Scoped-out	Yes	Yes (-77 to +27)	0.00	Scoped-out
32b	A12 / A1095 West	Junctions 9	0.53	Scoped-out	Yes	Yes (-85 to +30)	0.52	Scoped-out
32c	A1095 / Slip Road	Junctions 9	0.01	Scoped-out	Yes	No (-10 to +3)	0.01	Scoped-out
33	A12 / B1438	DMRB	n/a	Scoped-out	No	No (-230 to +8)	Unchanged, see DCO	
34a	A12 Northbound off slip / B1078	Junctions 9	0.66	Scoped-out	Yes	Yes (-59 to +96)	0.59	Scoped-out
34bc	A12 southbound on-slip / A12 southbound off-slip / B1078	*NEW* Junctions 9 (replaces J34b & J34c)	0.61 / 0.86	n/a	NEW	Yes (-62 to +96)	0.92	Scoped-in
35a	A12 / Mitford Road	Junctions 9	0.06	Scoped-out	Yes	No (-123 to +1)	0.05	Scoped-out

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
35b	A12 / B1121 Main Road	Junctions 9	0.47	Scoped-out	Yes	No (-211 to 0)	0.35	Scoped-out
35c	B1121 Main Road / Slip Road	Junctions 9	0.25	Scoped-out	No	Yes (-93 to +32)	0.21	Scoped-out
36a	A12 / Main Road	Junctions 9	0.31	Scoped-out	Yes	Yes (-68 to +22)	0.30	Scoped-out
36b	A12 Slip / Main Road	Junctions 9	0.19	Scoped-out	No	No (-27 to +9)	Unchanged, see DCO	
37	A12 / B1387	Junctions 9	0.10	Scoped-out	No	Yes (-69 to +28)	0.09	Scoped-out
38	A12 / B1125 Angel Lane	Junctions 9	0.61	Scoped-in	Yes	No (-11 to +11)	0.71	Scoped-in
39	A12 / Marlesford Road	Junctions 9	0.07	Scoped-out	No	Yes (-140 to 0)	0.06	Scoped-out
40	A12 / Bell Lane	Junctions 9	0.60	Scoped-out	Yes	Yes (-78 to +37)	0.63	Scoped-out
41	A1156 / Felixstowe Road	Junctions 9	0.46	Scoped-out	No	Yes (-83 to +56)	0.48	Scoped-out
42_miti	A12 / Sizewell Link Road (proposed layout)	Junctions 9	0.66	Scoped-out	No	Yes (-78 to +28)	0.63	Scoped-out
43_miti	B1122 / Site Access (proposed layout)	Junctions 9	0.66	Scoped-out	No	Yes (-252 to +45)	0.58	Scoped-out
44_miti	B1122 / Lover's Lane (proposed layout)	Junctions 9	0.58	Scoped-out	Yes	No (-79 to +11)	0.56	Scoped-out

Model no.	Model name	Capacity assessment type	TA Max RFC	TA scoping decision (Max RFC < 0.7)	Model parameter changes since TA?	Significant change in refined DCO flows?	Updated Max RFC	Updated scoping decision (Max RFC < 0.7)
45_miti	A12 / Tinker Brook (proposed layout)	Junctions 9	0.88	Scoped-in	No	Yes (-77 to +37)	0.72	Scoped-in

9.5 Scoped-in junction assessment (Refined DCO results)

9.5.1 The updated junction model results based on the Refined DCO assessment have been compared to those presented in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. Most of the predicted RFCs and delays have not changed significantly as a result of revisions to model parameters and modelled traffic flows. Analysis is provided below for all of the scoped-in junctions to explain how the results have changed relative to those presented within the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017].

9.5.2 As with the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017], the modelling results summarised within this chapter have been colour coded based on the ratio of flow to capacity (RFC) for unsignalised junctions and degree of saturation (DoS) for signalised junctions based on the thresholds summarised in **Table 9.3**. To give a more in-depth summary, analysis of junction delay is also provided as part of the revised DCO assessment. The delays are presented per vehicle and are colour coded as specified in **Table 9.3**. The colour coding is based on the maximum RFCs DoS and delay being forecast in each scenario (Reference Case and with-Sizewell respectively) and does not reflect the level of comparison between the two.

Table 9.3: Junction modelling performance criteria

	Non-signalised junction	Signalised junction
Ratio of Flow to Capacity (RFC)		
	All arms operate with an RFC of 0.85 or less	All arms operate with a DoS of 90% or less
	At least one arm operates with an RFC greater than 0.85 but less than or equal to 1.0	At least one arm operates with a DoS of greater than 90% but less than or equal to 100%
	At least one arm operates with an RFC greater than 1.0	At least one arm operates with a DoS of greater than 100%
Delay per vehicle (seconds)		
	All arms operate with a delay per vehicle of less than 20 seconds	
	At least one arm operates with a delay per vehicle of 20 to 30 seconds	
	At least one arm operates with a delay per vehicle of 30+ seconds	

a) Junction 1: A140 / B1078, Coddenham

9.5.3 The latest Refined DCO results show slightly reduced RFCs and delays in 2023 due to reduced flows on the A12 southbound and on the B1078. Slight fluctuations in RFCs and delays are seen in 2028 and 2034 as predicted flows have remained similar / increased slightly in these scenarios.

9.5.4 The B1078 minor arm is predicted to be congested from 08:00-09:00 and 17:00-18:00 but this issue is predicted to originate in the Reference Case scenarios with little/no worsening of RFCs or delays due to the addition of Sizewell C demand (Note that RC is reference case, EY is the 2023 reference case + SZC early years, PC is the 2028 reference case + SZC peak construction and OP is the 2034 reference case + SZC operational phase).

Table 9.4: J1 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.16	0.19	0.19	0.20	0.28	0.23	0.23
07:00-08:00	0.35	0.40	0.43	0.48	0.51	0.51	0.51
08:00-09:00	0.63	0.79	0.81	0.91	0.90	0.97	0.98
15:00-16:00	0.41	0.54	0.58	0.62	0.65	0.78	0.74
17:00-18:00	0.47	0.60	0.60	0.68	0.72	0.85	0.85

Table 9.5: J1 - Updated maximum junction delay (seconds/vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	8	8	8	8	9	8	8
07:00-08:00	11	12	13	14	15	15	15
08:00-09:00	21	35	38	68	64	103	110
15:00-16:00	12	15	17	19	21	34	29
17:00-18:00	13	17	18	22	25	46	46

b) Junction 2: B1078 / B1079, near Suffolk Rural College (formerly Otley College)

9.5.5 Lower RFCs and delays are predicted in all scenarios due to reduced flows being predicted as a result of the Refined DCO assessment, particularly on the B1078 minor arm in 2023.

9.5.6 The B1078 minor arm was previously predicted to operate over capacity from 2023 onwards, however the revised flows now result in the minor arm reaching capacity from 2028 onwards. The revised flows result in lower delays in all scenarios.

9.5.7 Little to no Sizewell C impact is predicted in 2023 and 2034. Slight Sizewell C impacts are predicted in 2028 with RFCs on the minor arm increasing by up to 0.12. The largest impact predicted is an increase in minor arm delays from 50 to 92 seconds per vehicle from 08:00-09:00 in 2028. This impact is predicted to be temporary and no Sizewell C impact is predicted by 2034. In 2034 the junction is expected to become more noticeably overcapacity due to background growth in traffic flows rather than Sizewell C impact.

Table 9.6: J2 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.12	0.14	0.16	0.15	0.27	0.16	0.16
07:00-08:00	0.39	0.43	0.47	0.48	0.59	0.60	0.59
08:00-09:00	0.62	0.77	0.80	0.87	0.96	1.16	1.16
15:00-16:00	0.49	0.73	0.78	0.79	0.85	0.93	0.93
17:00-18:00	0.55	0.72	0.74	0.82	0.87	0.98	0.98

Table 9.7: J2 - Updated maximum junction delay (seconds/vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	7	7	7	7	8	7	7
07:00-08:00	11	12	13	13	16	17	16
08:00-09:00	19	31	35	50	92	301	312
15:00-16:00	12	24	29	31	42	70	71
17:00-18:00	14	23	25	34	45	100	99

c) Junction 3: B1078 / B1116, Wickham Market

9.5.8 Lower RFCs and delays are now predicted in all scenarios, predominately due to a slight reduction in flows on the southern approach in the Refined DCO 2028 and 2034 flow forecasts. The maximum RFC predicted is 0.71 and the highest delay is 16s per vehicle, so the junction is considered to operate well within capacity.

9.5.9 There are some small increases in RFCs (up to +0.12) which translate to an increase in delays of up to +2s per vehicle. The Sizewell C impact is therefore considered to be negligible.

Table 9.8: J3 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.13	0.14	0.15	0.14	0.29	0.15	0.15
07:00-08:00	0.37	0.39	0.43	0.40	0.47	0.42	0.42
08:00-09:00	0.61	0.64	0.65	0.66	0.68	0.70	0.71
15:00-16:00	0.37	0.42	0.42	0.43	0.47	0.46	0.47
17:00-18:00	0.37	0.41	0.47	0.43	0.45	0.49	0.49

Table 9.9: J3 - Updated maximum junction delay (seconds / vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	5	5	5	5	6	5	5
07:00-08:00	7	7	8	7	9	8	8
08:00-09:00	12	13	14	14	15	16	16
15:00-16:00	8	9	9	9	10	10	10
17:00-18:00	8	8	9	9	9	10	10

d) Junction 5: B1069 / A1094, near Knodishall Common

9.5.10 Slightly lower RFCs and delays are now predicted due to a slight reduction in traffic flows in the Refined DCO flow forecasts, predominately on the A1094 western arm. The junction operates within capacity with a maximum RFC of 0.80 and a maximum delay of 38 seconds per vehicle being predicted on the B1069 minor arm across all scenarios.

9.5.11 The junction model results summarised below take account of the proposed mitigation scheme at this location and do not include traffic flows associated with the nearby Scottish Power (SPR) development site. The addition of Sizewell C traffic flows results in the minor arm RFCs increasing in both 2023 and 2028 and only slightly in 2034 but not above the capacity threshold of 0.85 RFC in any scenarios. The delay results show that the Sizewell C traffic causes delays to increase in 2023 and 2028 by up to 12 seconds per vehicle and by no more than 3 seconds per vehicle in 2034.

Table 9.10: J5 mitigation (no SPR) - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.00	0.36	0.39	0.37	0.40	0.38	0.38
07:00-08:00	0.00	0.70	0.80	0.73	0.77	0.76	0.77
08:00-09:00	0.00	0.56	0.58	0.57	0.58	0.61	0.65
15:00-16:00	0.00	0.62	0.66	0.67	0.78	0.77	0.77
17:00-18:00	0.00	0.49	0.63	0.51	0.66	0.58	0.58

Table 9.11: J5 mitigation (no SPR) - Updated maximum junction delay (seconds / vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0	12	12	12	12	12	12
07:00-08:00	0	26	38	28	35	33	35
08:00-09:00	0	18	19	19	20	21	24
15:00-16:00	0	23	26	27	38	37	38
17:00-18:00	0	16	22	17	24	20	20

e) Junction 6: A12 / A1094, Friday Street proposed roundabout

9.5.12 Slight fluctuations in RFCs (- 0.07 to +0.02) and delays (-5 to +2s) have occurred as a result of changes in the Refined DCO forecast flows. The junction operates with a maximum RFC of 0.86 and a maximum delay of 21 seconds per vehicle being predicted on the B1069 minor arm across all scenarios.

9.5.13 A roundabout layout has been proposed to improve capacity and safety at the existing T-junction and to allow the northern extent of the two village bypass to connect to the A12. The roundabout layout is predicted to operate within capacity in 2028 and 2034 (four-arms) and only comes under slight stress in 2023 (three-arms) as the bypass is not planned to open until after 2023.

Table 9.12: J6 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00			0.41		0.26		0.24
07:00-08:00			0.86		0.54		0.54
08:00-09:00			0.84		0.67		0.67
15:00-16:00			0.80		0.71		0.70
17:00-18:00			0.84		0.68		0.67

Table 9.13: J6 - Updated maximum junction delay (seconds / vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00			5		4		4
07:00-08:00			19		6		6
08:00-09:00			21		7		7
15:00-16:00			16		9		9
17:00-18:00			17		9		7

f) Junction 8: B1121 / B1119, Saxmundham

9.5.14 Small reductions in the Refined DCO forecast flows, particularly from 15:00-16:00 have resulted in the need to re-optimise the signal timings in the Linsig model. This has resulted in slight fluctuations in the Degree of Saturation (DoS) of +/- 0.04. The updated results show some changes in the locations and magnitudes of delays, with the largest increase from 17:00-18:00 in 2023.

9.5.15 The model continues to predict that the junction will operate at or near capacity across all three modelled years with delays of 1 - 2 minutes per vehicle expected regardless of whether Sizewell C traffic materialises.

Table 9.14: J8 - Updated maximum ratio of flow to capacity (DoS)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	17%	48%	52%	49%	47%	50%	37%
07:00-08:00	56%	65%	77%	80%	78%	70%	66%
08:00-09:00	94%	79%	78%	81%	82%	75%	82%
15:00-16:00	78%	79%	79%	81%	87%	87%	84%
17:00-18:00	75%	84%	91%	84%	89%	86%	87%

Table 9.15: J8 - Updated maximum junction delay (seconds / vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	36	45	46	45	44	45	41
07:00-08:00	46	54	65	66	64	59	55
08:00-09:00	105	72	70	76	78	76	81
15:00-16:00	68	89	89	97	97	104	104
17:00-18:00	71	103	132	95	117	103	91

g) Junction 9: B1119 / B1122 / B1069, Leiston

9.5.16 The overall level of demand that is forecast to use the junction has remained the same or decreased slightly across all scenarios. However, the distribution of flows across the four approaches has changed in the Refined DCO flow forecasts and the signal timings have therefore been re-optimised for the revised demands.

9.5.17 The junction was predicted to operate at or near capacity in some scenarios in 2028 and in most scenarios in 2034. The latest results show a similar pattern with peak Sizewell C impact expected from 15:00-16:00 in 2028 and from 08:00-09:00 in 2034.

9.5.18 Modifications at this junction are being considered as part of the Leiston town centre improvement scheme described in **Chapter 12** of this addendum. The proposals include converting the Main Street arm to one-way eastbound which is expected to provide some operational benefits to traffic. Proposals are not yet fixed, and so have not been presented in this assessment.

Table 9.16: J9 - Updated maximum ratio of flow to capacity (DoS)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	24%	41%	65%	32%	75%	44%	44%
07:00-08:00	65%	52%	56%	54%	81%	72%	89%
08:00-09:00	90%	80%	74%	83%	89%	86%	102%
15:00-16:00	77%	88%	82%	85%	106%	92%	93%
17:00-18:00	76%	68%	70%	71%	78%	80%	78%

Table 9.17: J9 - Updated maximum junction delay (seconds / vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	40	44	55	43	49	45	45
07:00-08:00	55	56	64	57	66	58	82
08:00-09:00	83	76	72	81	99	86	176
15:00-16:00	53	81	94	91	213	111	125
17:00-18:00	57	62	81	64	82	68	79

h) Junction 11: A12 / A144, Darsham

9.5.19 Junction 11 was assessed within the Yoxford VISSIM model which has been re-run using the Refined DCO forecast flows. The Yoxford VISSIM model development and latest results are documented in detail within **Appendix 9B**.

9.5.20 In 2023, the junction is assumed to operate under the existing layout as a ghost island T-junction. The VISSIM model predicts that the junction operation will be similar in the 2023 Reference Case and 2023 Early Years scenarios. The only exception is from 07:00-08:00 when the A144 minor arm queue is expected to be approximately 5 vehicles longer but would otherwise be anticipated to remain at Reference Case levels.

9.5.21 In 2028, the junction is assumed to be upgraded to a single lane dualled arrangement whereby right turners from the A144 would be able to cross the northbound A12 carriageway and wait in the central reserve to safely join the southbound A12 carriageway when a sufficient gap is available. This layout is intended to make it easier for right turning vehicles to exit the A144 as gaps in traffic on both carriageways would not need to be found concurrently. The upgraded junction layout helps to reduce queues on the A144 in the Peak Construction scenario to Reference Case levels with the exception of some small short-term increases in maximum queue lengths (up to 5 vehicles) from 06:45-07:00.

9.5.22 By 2034, the Operational Phase scenario is predicted to operate better than the Reference Case due to relatively low Sizewell C demands and the benefit of the junction upgrade. By 2034, the junction upgrade mitigates both the Sizewell C demand and also some of the background growth.

i) Junction 12a: A12 / A1120, Yoxford (south-eastern t-junction)

9.5.23 Junction 12 was assessed within the Yoxford VISSIM model which has been re-run using the Refined DCO forecast flows. The Yoxford VISSIM model development and latest results are documented in detail within **Appendix 9B**.

9.5.24 In 2023, the VISSIM model predicts that the junction will operate with small queues in both the 2023 Reference Case and 2023 Early Years scenarios. Some small increases in queues on the A1120 minor arm (+1-2 vehicles) are predicted from 07:00-08:00 as a result of the Sizewell C flows.

9.5.25 In 2028, the VISSIM model predicts that the junction will operate similarly in the 2028 Reference Case and 2028 peak construction scenarios. The results also suggest that the upgrade and relocation of the neighbouring

A12 / B1122 junction (junction 13) should reduce the likelihood of queues from the A1120 junction extending back to the B1122 junction. The relocation of the A12 / B1122 junction further north is expected to increase queue stacking space at the A1120 junction from 150m to 230m.

9.5.26 In 2034, the VISSIM model predicts that the junction will operate similarly in the 2034 Reference Case and 2034 Operational Phase scenarios. In 2034, the relocation of the B1122 junction significantly reduces the risk of queues from the A1120 junction reaching the B1122 in the PM period.

j) Junction 13: A12 / B1122

9.5.27 Junction 13 was assessed within the Yoxford VISSIM model which has been re-run using the Refined DCO forecast flows. The Yoxford VISSIM model development and latest results are documented in detail within **Appendix 9B**.

9.5.28 In 2023, the junction is assumed to operate under the existing layout as a ghost island T-junction. The VISSIM model predicts that the T-junction will operate with slightly longer queues in the 2023 Early Years scenario than it would otherwise in the 2023 Reference Case scenario. Queues for the A12 northbound right turn into the B1122 are expected to increase by approximately 2 vehicles from 07:00-08:00. Maximum queues on the B1122 minor arm are predicted to increase by approximately 5-8 vehicles from 07:30-08:00, 15:00-15:15 and 16:45-18:00 but otherwise queue lengths remain similar to the 2028 Reference Case.

9.5.29 In 2028, the junction is assumed to be relocated approximately 80m further north and upgraded to a roundabout. The VISSIM model predicts that the upgrade will result in some small increases in queues and delays on the A12 due to the introduction of the roundabout but queues on the B1122 will be similar / less than the current observed queue lengths.

9.5.30 In 2034, the roundabout upgrade is predicted to significantly reduce queues on the B1122 to 3-4 vehicles in length which were otherwise predicted to be up to 14 vehicles in length in the 2034 Reference Case. Queues on the A12, which are non-existent on the free-flow lanes in the existing layout, are predicted to increase to a maximum of 9 vehicles due to the introduction of the roundabout. Queues on the A12 approaches are likely to be variable and this maximum is forecast to dissipate quickly with maximum queues typically in the 2-5 vehicle range.

k) Junction 14: B1069 / A1094, near Snape

9.5.31 Slight fluctuations in RFCs (-0.09 to +0.01) and delays (-15 to +1 second per vehicle) are now predicted due to slight changes in the Refined DCO forecast flows, predominately on the B1069 minor arm.

9.5.32 The junction is predicted to operate better than previously forecast in 2023 and 2028 with maximum RFCs of 0.69 and 0.74 respectively and delays not exceeding 35 seconds per vehicle.

9.5.33 In 2034, the junction is predicted to operate similarly or better than previously assessed. RFCs are predicted to increase from a maximum of 0.78 in the Reference Case to a maximum of 0.80 in the Operational Phase and delays are expected to increase from a maximum of 40 to 43 seconds per vehicle. In 2034, delays on the minor arm are expected to increase slightly from approximately 20 to 40 seconds per vehicle from 07:00-08:00 and 08:00-09:00 due to the Sizewell C traffic. A similar magnitude of delay (40 seconds) is anticipated on the minor arm from 15:00-16:00 in the 2034 Reference Case scenario regardless of whether Sizewell C demand is introduced.

Table 9.18: J14 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.13	0.29	0.32	0.30	0.43	0.30	0.31
07:00-08:00	0.37	0.44	0.54	0.46	0.63	0.49	0.76
08:00-09:00	0.51	0.60	0.63	0.65	0.68	0.66	0.80
15:00-16:00	0.57	0.67	0.68	0.72	0.74	0.78	0.77
17:00-18:00	0.53	0.66	0.69	0.69	0.72	0.69	0.69

Table 9.19: J14 - Updated maximum junction delay (seconds/vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	9	11	11	11	14	11	11
07:00-08:00	13	15	19	16	25	17	37
08:00-09:00	17	23	24	26	29	26	43
15:00-16:00	20	27	28	33	35	40	39
17:00-18:00	17	26	31	28	33	27	27

l) Junction 17: A12 / Northern park and ride access, Darsham

9.5.34 Forecast flows at this location have not changed significantly and therefore the junction model results remain the same as those presented within the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

9.5.35 Junction 17 was also assessed within the Yoxford VISSIM model which was re-run using the latest forecast flows. The Yoxford VISSIM model development and latest results are documented in detail within **Appendix 9B**.

9.5.36 The VISSIM model results have not changed significantly compared to those presented in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-

017] and therefore the overall conclusions have not changed in this addendum. The introduction of a new roundabout on the A12 increases delays on the A12 but due to the relatively low levels of demand exiting the northern park and ride site (up to 160 vehicles per hour), the A12 flow is not interrupted frequently. Queues on the A12 approaches build temporarily up to 6-7 vehicles in length when opposing flows are present and then quickly dissipate. As a result, average delays at the junction are 3-4 seconds per vehicle.

m) Junction 21: A14 / A12 Seven Hills Interchange

9.5.37 The Seven Hills interchange is already planned to be signalised by 2023 irrespective of Sizewell C development and has therefore been assessed as a signalised junction in all forecast year scenarios using LinSig modelling software.

9.5.38 Since the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] the Seven Hills Interchange LinSig model has been updated using the Refined DCO forecast flows. The latest forecast flows have mostly reduced with the exception of the A12 northern approach from 15:00-16:00 and 17:00-18:00 in 2028 and 2034 which have increased by 50-90 vehicles per hour. As a result of the change in demand, the LinSig model has been re-optimised to distribute green time more appropriately. This resulted in a number of changes to the Degree of Saturation and delays which are predominantly reductions with the exception of the A12 northern approach from 15:00-16:00 and 17:00-18:00 in 2028 and 2034.

9.5.39 The junction model results presented in this Addendum for junctions 21 to 28 are based on actual flows (rather than demand flows) and contain no fuel and income adjustments to bring the modelling into line with the modelling exercise undertaken for the consented Adastral Park development. Whilst the majority of the junction models are based on demand flows and include fuel and income adjustments (worst case), this was not felt to be appropriate for the A12 corridor between the A14 and A1152. This approach was also adopted previously in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] as described in **Section 9.19.32**.

9.5.40 Overall, the LinSig model predicts that the junction is currently operating over-capacity in the AM period and is likely to worsen over time with particularly high delays expected from 07:00-08:00 and 08:00-09:00. The large delays being predicted are located on the A12 and Felixstowe Road approaches.

9.5.41 The A14 eastbound off-slip has a left turn bypass lane which aids throughput and results in a maximum DoS of 36% and a maximum delay of 17 seconds per vehicle.

9.5.42 The A14 westbound off-slip is predicted to operate near to capacity (92% DoS) from 08:00-09:00 under the existing base flows and is predicted to remain similar in the 2023 and 2034 scenarios, with or without Sizewell C. In 2028, the presence of the Sizewell C demand from Felixstowe is expected to increase the DoS from 90% in the 2028 Reference Case to 98% in the 2028 Peak Construction scenario (busiest day). On the busiest day during peak Sizewell C construction, the largest impact predicted is an increase in delays from 59 to 87 seconds per vehicle and an increase in queue lengths from 12 to 18 PCUs. The A14 eastbound off-slip is in excess of 300m in length and is anticipated to provide sufficient stacking space for a queue of this magnitude with the signalisation scheme in operation.

Table 9.20: J21 - Updated maximum degree of saturation (DoS) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	52%	56%	55%	50%	54%	53%	53%
07:00-08:00	96%	98%	118%	120%	102%	105%	122%
08:00-09:00	124%	117%	135%	130%	119%	117%	118%
15:00-16:00	82%	86%	89%	90%	90%	90%	90%
17:00-18:00	85%	87%	89%	88%	88%	91%	91%

Table 9.21: J21 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	33	33	29	31	35	33	33
07:00-08:00	86	101	345	369	138	132	389
08:00-09:00	419	324	531	485	319	330	337
15:00-16:00	43	49	56	57	57	54	54
17:00-18:00	48	50	53	53	53	57	57

9.5.43 The LinSig assessment presented above has required the optimisation of signal green times and offsets to minimise delays. This process was conducted with a view to preventing queues on the roundabout circulatory from exceeding the available stacking space. This is to avoid queues on the circulatory lanes blocking any of the junction exits which LinSig is not able to take account of inherently. The circulatory green times have therefore been set at a level that could be considered generous, resulting in relatively low green times on the roundabout approaches.

9.5.44 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model (see **Appendix 9C**). Fixed signal timings from LinSig have been

input into VISSIM for each hour respectively which has confirmed that approach green times could be increased, and circulatory green times reduced in places to achieve better junction performance. It should be noted, however, that the VISSIM assessment is also likely to underestimate the capacities that could be achieved on-street due to the way fixed signal timings have been implemented in each hour. Whilst the fixed times are likely to give a reasonable representation of the maximum greens likely to be running during most cycles, there will be cycles where green times are under-utilised and could be better distributed. A vehicle actuated controller will be implemented on-street (e.g. MOVA), allowing green times to be optimised on a cycle-by-cycle basis in line with demand, which will improve the level of throughput.

9.5.45 As this junction is near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impact for reasons summarised earlier in this chapter.

9.5.46 The VISSIM model has been used to conduct two 2023 scenarios; the 2023 Reference Case and the 2023 Early Years scenario (600 Sizewell C HGVs/day). In 2028, five VISSIM scenarios have been conducted; the 2028 Reference Case and four 2028 Peak Construction scenarios which test different volumes of Sizewell C HGVs as listed in **Table 9.22**:. The A12 VISSIM model 2028 Peak Construction results reported in this chapter represent the 1000 HGVs per day scenario unless otherwise stated. This presents a worst case in terms of impacts which are not expected to be present on a typical day.

Table 9.22: Peak Construction HGV volume tests

Scenario description	Sizewell C daily HGV volume
DCO Freight Management Strategy – busiest day estimate	1000 HGVs / day
Preferred option (changes 1 & 2) – busiest day estimate	700 HGVs / day
DCO Freight Management Strategy – typical day estimate	650 HGVs / day
Preferred option (changes 1 & 2) – typical day estimate	500 HGVs / day

9.5.47 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increase in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered to be indiscernible and are not referenced.

9.5.48 Based on the A12 VISSIM model, the Sizewell C flows are not anticipated to have a significant impact on the performance of J21 in the 2023 Early Years scenario with no significant increases in travel times expected, except for an 8 second increase on Felixstowe Road from 17:00-18:00, and small increases in queue lengths (up to +3 PCUs).

9.5.49 In 2028, Sizewell C flows are anticipated to have the following impact relative to the Reference Case:

- Felixstowe Road queue lengths are predicted to increase by up to +7 PCUs. Despite this, travel times on Felixstowe Road are not expected to increase significantly, except for 08:00-09:00 when an increase of 17 seconds (+15%) is predicted on the busiest day (1000 HGVs/day) and up to +6 seconds on a typical day (650 HGVs/day).

- An increase of 10 seconds in travel times (+12%) on the A14 eastbound off-slip from 06:00-07:00.

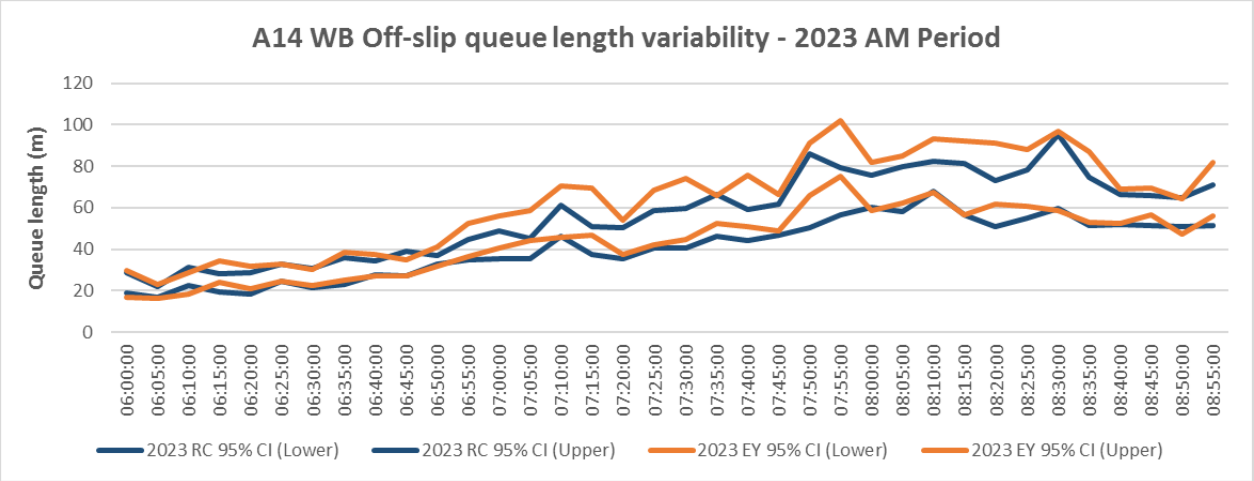
- Queues on the A12 north are expected to increase in all time periods except 06:00-07:00. This is due to green times on the A12 north being redistributed to provide additional green time for the west-to-south movement (SZC HGVs accessing the Freight Management Facility on Felixstowe Road). The increase in queues on the A12 north is below +5 PCUs, except from 16:00-17:00 when an increase of approximately 15 PCUs is predicted on the busiest day (1000 HGVs/day). On a typical day (650 HGVs/day) queues are expected to increase by 7 PCUs. Despite this, travel times are not predicted to increase significantly with the exception of 16:00-17:00 when an increase of 12 seconds (+9%) is expected on the busiest day and 6 seconds (+4%) on a typical day.

9.5.50 The operation of the A14 off-slips at Seven Hills are of importance to Highways England as queues from the roundabout could tail back on the A14 mainline. The A14 eastbound off-slip has a left-turn bypass lane at Seven Hills which allows the majority of flows to proceed without giving way and subsequently there is a very low chance of queues forming on the eastbound off-slip. The A14 westbound off-slip does not have a bypass lane and there is a consented scheme for it to be signalised by 2023 which could increase the risk of queues forming. Further analysis of the variability of queue lengths on the A14 westbound off-slip has therefore been conducted (see **Plate 9.1** to **Plate 9.4**).

9.5.51 **Plate 9.1** presents the modelled queue length 95% confidence interval for the 2023 Reference Case (blue upper and lower bound) and for the 2023 Early Years (orange upper and lower bound) during the AM period. This demonstrates that in 2023, queues on the westbound off-slip are likely to

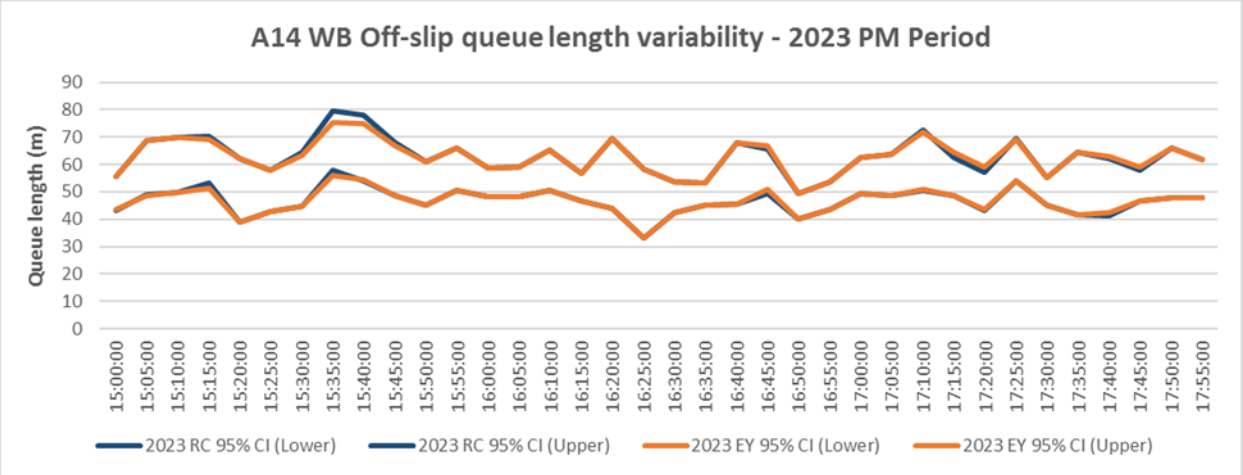
be variable but the addition of Sizewell C traffic is unlikely to greatly affect the range of queues experienced in the AM period in 2023.

Plate 9.1: A14 westbound off-slip queue variability analysis (2023 AM)



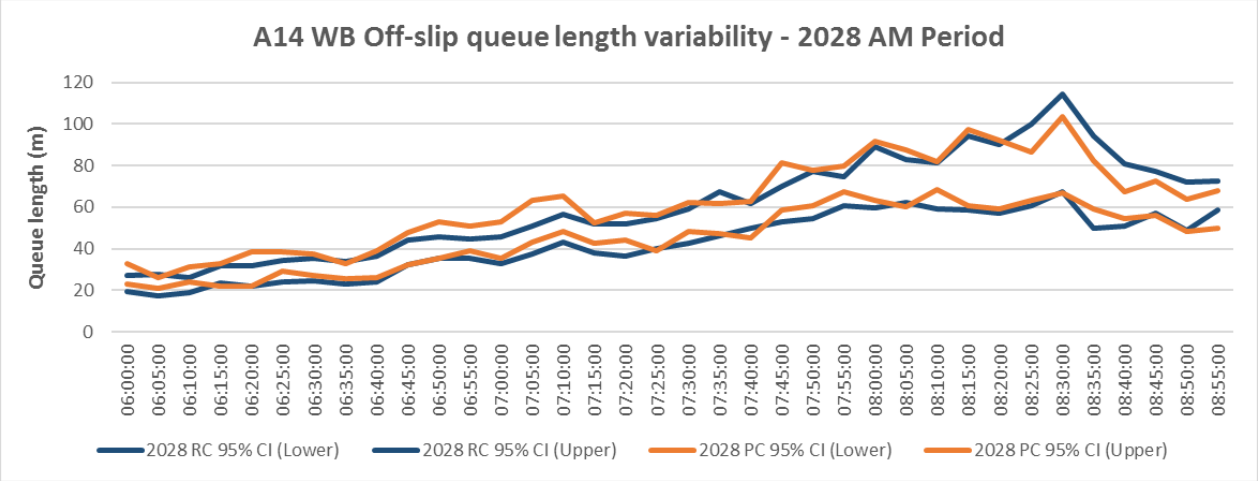
9.5.52 **Plate 9.2** presents the modelled queue length 95% confidence interval for the 2023 Reference Case (blue upper and lower bound) and for the 2023 Early Years (orange upper and lower bound) during the PM period. This demonstrates that during the PM period, queues are unlikely to change due to the addition of Sizewell C traffic.

Plate 9.2: A14 westbound off-slip queue variability analysis (2023 PM)



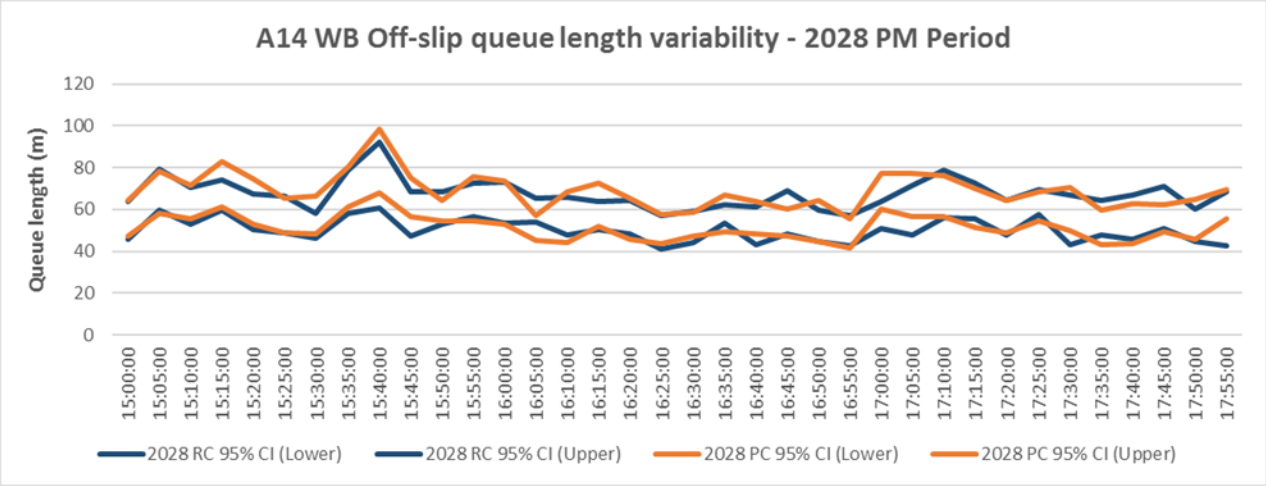
9.5.53 **Plate 9.3** presents the modelled queue length 95% confidence interval for the 2028 Reference Case (blue upper and lower bound) and for the 2028 Peak Construction (1000 HGVs) scenario (orange upper and lower bound) during the AM period. This demonstrates that in 2028, queues on the westbound off-slip are likely to be variable but the addition of Sizewell C traffic is unlikely to greatly affect the range of queues experienced in the AM period in 2028.

Plate 9.3: A14 westbound off-slip queue variability analysis (2028 AM)



9.5.54 **Plate 9.4** presents the modelled queue length 95% confidence interval for the 2028 Reference Case (blue upper and lower bound) and for the 2028 Peak Construction (1000 HGVs) scenario (orange upper and lower bound) during the PM period. This demonstrates that the addition of Sizewell C traffic is unlikely to affect the range of queues experienced in the PM period in 2028.

Plate 9.4: A14 westbound off-slip queue variability analysis (2028 PM)



9.5.55 In addition to analysing the Reference Case and with-Sizewell queue length 95% confidence intervals, a comparison of the absolute maximum queue length reported across all 10 model iterations (random seeds) is presented in **Table 9.23**:. This demonstrates that the worst-case queue lengths predicted on the A14 westbound off-slip are not predicted to exceed the 370m stacking space available.

Table 9.23: Maximum predicted queues on A14 westbound off-slip

Scenario	Absolute maximum queue length on A14 westbound off-slip (m)	
	AM period	PM period
2023 Reference Case	130	102
2023 Early Years	135	102
2028 Reference Case	174	102
2028 Peak Construction (DCO busiest day, 1000 HGVs/day)	135	91

9.5.56 Due to the introduction of the committed signalisation scheme at J21, it will be possible to manage traffic to a greater degree at this location in future. The introduction of a signal controller will provide additional mechanisms that could be deployed if needed to prevent queues on the A14 off-slips from tailing back onto the A14.

9.5.57 It should be noted that within VISSIM, a simplified approach has been taken with regards to signal timings. An average set of fixed optimised signal timings have been input for each modelled hour respectively to cater for the average demands within that hour. The optimised timings used in the Peak Construction scenario provide a greater proportion of green time to the A14 westbound off-slip which results in queue lengths remaining similar to the Reference Case despite an increase in flows.

9.5.58 The absolute maximum queue recorded in the 2028 Reference Case (174m) was only observed in one model iteration and lower maximum queues were recorded in all other model iterations (next highest queue of 139m) as shown in **Table 9.24**. In some model iterations, the Sizewell C flows result in a small increase in queue lengths on the A14 westbound off-slip relative to the Reference Case and in other iterations we see a small decrease but on average queue lengths are predicted to remain consistent with the Reference Case.

Table 9.24: A14 westbound off-slip maximum modelled queue by model iteration

Scenario	Model iteration										
	1	2	3	4	5	6	7	8	9	10	Average of 10 iterations
2028 RC	174	88	87	139	118	102	92	118	82	101	110
2028 PC	132	90	95	131	135	98	108	106	84	105	108
Diff	-42	2	7	-8	17	-4	16	-12	3	5	-2

9.5.59 Analysis of the predicted travel times (route #17) also confirms that travel times on the A14 westbound off-slip are not anticipated to increase by more than 4 seconds in the AM period or 1 second in the PM period as a result of the Sizewell C traffic.

n) Junction 22: A12 / Foxhall Road / Newbourne Road

9.5.60 The A12 / Foxhall Road junction is currently a priority roundabout but there is a committed scheme for it to be partially signalised by 2028. This junction has therefore been assessed in Junctions 9 in 2023 and in LinSig in 2028 and 2034.

9.5.61 The Refined DCO forecast flows have mostly reduced in 2023 at this junction, however some large flow increases (up to 200vph) have occurred in 2028 and 2034, particularly on the A12 northern approach from 15:00-16:00 and 17:00-18:00. As a result of the change in demand, the LinSig model has been re-optimised to distribute green time more appropriately. This has resulted in a number of changes to the DoS and delays. Few differences are seen in the 06:00-07:00 and 07:00-08:00 DoS results but increases of up to +0.22 are seen in the other three time periods.

9.5.62 Overall, the latest junction model results predict that delays in 2023 are modelled to increase on Foxhall Road as a result of the Sizewell C traffic, from 26 to 80 seconds per vehicle from 07:00-08:00 and from 763 to 1020 seconds per vehicle from 08:00-09:00.

9.5.63 Flows are predicted to fluctuate in 2028 and 2034 resulting in some fluctuation in DoS and delays, mainly from 08:00-09:00 when the junction is under the most stress. In 2028 from 08:00-09:00, the Peak Construction results are slightly better than the Reference Case results as more vehicles are expected to use Foxhall Road in the Reference Case. In 2034, despite flows on Foxhall Road being higher in the Operational Phase scenario, circulating flows are higher in the Reference Case scenario and Foxhall Road therefore performs better in the Operational Phase. The maximum RFCs and delays at the junction are at Foxhall Road in all scenarios.

Table 9.25: J22 - Updated maximum ratio of flow to capacity (RFC) or degree of saturation (DoS) – no fuel and income, actual flow

RFC	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.34	0.36	0.36				
07:00-08:00	0.69	0.79	0.96				
08:00-09:00	1.43	1.69	1.95				
15:00-16:00	0.75	0.79	0.80				
17:00-18:00	0.81	0.81	0.82				
DoS	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00				33%	35%	34%	34%
07:00-08:00				65%	69%	76%	75%
08:00-09:00				111%	109%	118%	106%
15:00-16:00				79%	78%	87%	87%
17:00-18:00				88%	88%	100%	100%

Table 9.26: J22 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	4	4	4				
07:00-08:00	17	26	80				
08:00-09:00	513	763	1020				
15:00-16:00	17	19	22				
17:00-18:00	15	16	15				
	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0	0	0	5	5	5	5
07:00-08:00	0	0	0	11	14	17	16
08:00-09:00	0	0	0	230	207	324	164
15:00-16:00	0	0	0	17	15	30	30
17:00-18:00	0	0	0	25	25	72	73

9.5.64 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model (see **Appendix 9C**). Fixed signal timings from LinSig have been input into VISSIM for each hour respectively which has confirmed that the signal timings in LinSig are fairly conservative and VISSIM therefore predicts lower queues and delays. Despite this, the VISSIM model is still considered to underestimate capacities and the VISSIM results are therefore considered to be robust, as detailed earlier in this chapter with respect to MOVA. As this junction is also near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impacts.

9.5.65 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increase in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered indiscernible and are not referenced.

9.5.66 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J22 with no significant increases in travel times or queue lengths expected, except for a 38 second increase (+21%) on Foxhall Road from 08:00-09:00. Foxhall Road is currently congested in the morning peak (22 PCU average queue) and is anticipated to continue operating in this way in both the 2023 Reference Case (31 PCU queue) and Early Years scenario (38 PCU queue).

9.5.67 In 2028, Sizewell C flows are anticipated to have a small impact on the A12 south approach in the AM period and on the A12 north approach in the PM period. Queue lengths are not predicted to increase by more than 2-3 PCUs and travel times therefore do not change significantly.

o) Junction 22b: A12 / Brightwell Lakes Access

9.5.68 The Brightwell Lakes Access junction was not previously assessed within the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. The junction is planned to open by 2023 just north of Newbourne Road to provide a dedicated access to the Brightwell Lakes development which is planned to deliver new homes and jobs to the south and east of Adastral Park. The access junction is planned to be signalised and has therefore been assessed within LinSig.

9.5.69 The LinSig model predicts that the junction will operate at or near capacity from 08:00-09:00 in all scenarios and will reach capacity from 15:00-16:00 and 17:00-18:00 in 2034.

9.5.70 The presence of the Sizewell C flows does not impact the operation of the junction.

Table 9.27: J22b - Updated maximum degree of saturation (DoS) – no fuel and income, actual flow

DoS	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00		42%	42%	42%	42%	43%	43%
07:00-08:00		73%	73%	74%	74%	76%	77%
08:00-09:00		95%	95%	95%	95%	96%	92%
15:00-16:00		83%	83%	88%	87%	92%	92%
17:00-18:00		84%	83%	89%	86%	92%	92%

Table 9.28: J22b - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00		40	40	40	40	40	40
07:00-08:00		33	41	33	34	34	35
08:00-09:00		43	43	51	50	85	31
15:00-16:00		41	41	42	43	45	44
17:00-18:00		41	41	40	43	42	42

9.5.71 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model (see **Appendix 9C**). Fixed signal timings from LinSig have been input into VISSIM for each hour respectively which has confirmed that the signal timings in LinSig are fairly conservative and VISSIM therefore predicts lower queues and delays. Despite this, the VISSIM model is still considered to underestimate capacities and the VISSIM results are therefore considered to be robust, as detailed earlier in this chapter. As this junction is also near capacity, the VISSIM model is considered to be the more robust tool for assessing the impact (see paragraph 9.4.1).

9.5.72 The VISSIM model predicts that the Sizewell C flows will not have an impact on travel times. Any increase in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered indiscernible and are not referenced.

9.5.73 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J22b with no significant increases in travel times or queue lengths predicted.

9.5.74 In 2028, Sizewell C flows are anticipated to have a negligible impact on queue length on the A12 approaches (+2-4 PCUs) from 06:00-08:00 and 15:00-17:00. No impact is anticipated from 08:00-09:00 and 17:00-18:00.

p) Junction 23: A12 / Barrack Square / Eagle Way

9.5.75 The A12 / Barrack Square junction is currently a priority roundabout but there is a committed scheme for it to be partially signalised by 2028. This junction has therefore been assessed in Junctions 9 for 2023 and LinSig for 2028 and 2034.

9.5.76 Since the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] was produced, both junction models have been updated using the Refined DCO forecast flows. The latest forecast flows have reduced in 2023 but have increased in 2028 and 2034, predominately on the A12-north approach from 15:00-16:00 and 17:00-18:00. This leads to reductions in the 2023 RFC and delays and increases in the 2028 and 2034 DoS and delays.

9.5.77 Overall, the latest junction model results predict that the junction will operate at or near capacity from 08:00-09:00 in all scenarios and will also reach capacity from 07:00-08:00, 15:00-16:00 and 17:00-18:00 in the future despite the signalisation scheme.

9.5.78 Based on the LinSig model, the presence of the Sizewell C flows is predicted to increase delays on the Eagle Way west approach from 08:00-09:00 in 2023 and also on the A12-south approach from 07:00-08:00 in 2028.

Table 9.29: J23 - Updated maximum ratio of flow to capacity (RFC) or degree of saturation (DoS) – no fuel and income, actual flow

RFC	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.40	0.42	0.43				
07:00-08:00	0.78	0.80	0.84				
08:00-09:00	0.89	0.92	1.04				
15:00-16:00	0.73	0.75	0.75				
17:00-18:00	0.74	0.79	0.79				
DoS	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00				43%	51%	47%	47%
07:00-08:00				95%	102%	103%	102%
08:00-09:00				115%	114%	134%	128%
15:00-16:00				111%	110%	137%	138%
17:00-18:00				108%	106%	121%	120%

Table 9.30: J23 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	3	4	4				
07:00-08:00	9	12	17				
08:00-09:00	30	79	166				
15:00-16:00	16	18	18				
17:00-18:00	17	22	22				
	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00				7	7	7	7
07:00-08:00				21	68	78	71
08:00-09:00				277	266	481	443
15:00-16:00				198	189	531	535
17:00-18:00				183	145	352	345

9.5.79 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model (see **Appendix 9C**). Fixed signal timings from LinSig have been input into VISSIM for each hour respectively which has confirmed that the signal timings in LinSig are fairly conservative and VISSIM therefore predicts lower queues and delays. Despite this, the VISSIM model is still considered to underestimate capacities and the VISSIM results are therefore considered to be robust. As this junction is also near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impacts.

9.5.80 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increase in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered indiscernible and are not referenced.

9.5.81 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J23 with no significant increases in travel times or queue lengths expected on the A12. Queue lengths on Barrack Square are expected to increase slightly (+4 PCUs) which is likely to impact delays on Gloster Road (+28 seconds) in the PM period.

9.5.82 In 2028, the Sizewell C flows are not anticipated to have a significant impact on J23. The only notable impact is on the A12 north approach from 08:00-09:00 when queues are predicted to increase by 6 PCUs (from 23 to 29 PCUs), causing travel times to increase by 16 seconds (+21%).

q) Junction 24: A12 / Anson Road / Eagle Way

9.5.83 The A12 / Anson Road junction is currently a priority roundabout but is consented to be signalised after 2034. The signalised layout therefore is not within the scope of this assessment. The results presented below represent the existing unsignalised layout and are produced by Junctions 9.

9.5.84 Since the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] was produced, the junction model has been updated using the Refined DCO forecast flows. The latest forecast flows have reduced in 2023 but have increased in 2028 and 2034, predominately on the A12-north approach from 15:00-16:00 and 17:00-18:00.

9.5.85 The junction model predicts that the junction will operate at or near capacity from 08:00-09:00, 15:00-16:00 and 17:00-16:00 from 2023 onwards. Delays at the junction are predicted to increase over time regardless of the presence of Sizewell C flows. The Sizewell C flows increase delays slightly from 15:00-16:00 in 2023 and 2028 and from 08:00-09:00 in 2034 by approximately 20s per vehicle. Some small reductions in RFCs and delays are also predicted in the Operational Phase as overall flows are expected to be lower in this scenario compared to the Reference Case, particularly from 07:00-08:00.

Table 9.31: J24 - Updated maximum ratio of flow to capacity (RFC) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.34	0.35	0.36	0.36	0.36	0.40	0.38
07:00-08:00	0.65	0.66	0.73	0.70	0.78	0.83	0.78
08:00-09:00	0.81	0.82	0.86	0.91	0.91	0.89	0.93
15:00-16:00	0.84	0.88	0.90	0.99	1.02	1.23	1.23
17:00-18:00	0.86	0.88	0.88	0.92	0.91	0.99	0.98

Table 9.32: J24 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	4	4	4	4	4	4	4
07:00-08:00	8	9	12	11	15	19	16
08:00-09:00	14	20	27	51	48	51	69
15:00-16:00	28	46	67	129	148	336	341
17:00-18:00	21	25	25	36	38	145	83

9.5.86 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model. As this junction is near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impact.

9.5.87 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increase in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered indiscernible and are not referenced.

9.5.88 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J24 with no significant increases in travel times or queue lengths expected.

9.5.89 In 2028, the Sizewell C flows are anticipated to have a slight impact on queue lengths on the A12 approaches (up to +9 PCUs) but no significant increase in travel times. Delays on Eagle Way are expected to increase by 28 seconds (+35%) from 15:00-16:00 on the busiest day but no difference is expected on the typical day. Eagle Way is also expected to experience an impact of 14 seconds (+14%) from 17:00-18:00 on the busiest day and 12 seconds (+12%) on a typical day. Delays on Anson Road are expected to increase in the PM period by up to 38 seconds (+31%). Anson Road is currently congested during the PM period with queues of up to 18 PCUs in the base scenario which is predicted to increase to 80 PCUs in the 2028 Reference Case and 130 PCUs in the 2028 Peak Construction scenario.

9.5.90 Anson Road, Gloster Road and Barrack Square serve the Martlesham Heath commercial and industrial parks and therefore experience particularly heavy traffic in the PM peak period. As there are multiple access points, it is likely that traffic would re-route to select the best route at that moment in time rather than sit in a queue on one route whilst the other routes continue to operate well. This is a limitation of the VISSIM model as route choice is not permitted but in reality, drivers would optimise their route choice either using a sat nav or due to local knowledge. The queues predicted on Anson Road are therefore considered unlikely to materialise.

9.5.91 It should be noted that committed highway improvements are scheduled for the A12 / Anson Road junction but not until after 2034 so they have not been included in the VISSIM model but they would be expected to relieve congestion at this junction.

r) Junction 25: A12 / A1214 / Main Road / Martlesham P&R

9.5.92 The Refined DCO forecast flows at this location have fluctuated with some relatively large increases and decreases predicted. The results predicted by the LinSig model have therefore changed as signal timings have been re-optimised to better suit the latest flows.

9.5.93 Overall, the LinSig model predicts that Sizewell C flows may impact operation of the junction from 17:00-18:00 in all three years, however this is largely due to the junction becoming significantly over capacity on the A12 southern approach from 2023 onwards, regardless of the Sizewell C flows. As the junction is over capacity, the results are extremely sensitive to small changes in green time distribution which is why the DoS is improved in some Sizewell C scenarios relative to the Reference Case.

Table 9.33: J25 - Updated maximum degree of saturation (DoS) – no fuel and income, actual flow

DoS	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	67%	68%	72%	71%	76%	72%	69%
07:00-08:00	86%	87%	91%	88%	89%	89%	86%
08:00-09:00	141%	90%	90%	105%	94%	104%	107%
15:00-16:00	80%	94%	99%	119%	123%	116%	128%
17:00-18:00	95%	135%	148%	129%	132%	108%	152%

Table 9.34: J25 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	36	37	38	38	41	41	41
07:00-08:00	35	36	43	37	40	39	35
08:00-09:00	586	34	34	122	44	118	161
15:00-16:00	40	43	84	353	400	316	459
17:00-18:00	46	548	662	479	509	179	701

9.5.94 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model (see **Appendix 9C**). Fixed signal timings from LinSig have been input into VISSIM for each hour respectively which has confirmed that the signal timings in LinSig are fairly conservative and VISSIM therefore predicts lower queues and delays. Despite this, the VISSIM model is still considered to underestimate capacities and the VISSIM results are therefore considered to be robust. As this junction is also near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impacts.

9.5.95 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increase in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered indiscernible and are not referenced.

9.5.96 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J25 with no significant increases in travel times expected and only small increases in queue lengths (+2 to 3 PCUs).

9.5.97 In 2028, the Sizewell C flows are not anticipated to have an impact on the A1214, Main Road east or Martlesham P&R approaches. A slight impact is anticipated on the A12 approaches (up to +4 PCUs) but no significant increase in travel times. The one exception is from 08:00-09:00 when an increase in queue lengths of +14 PCUs is predicted on the A12 south approach on the busiest day or +8 PCUs on a typical day. This results in an increase in travel times of 19 seconds (+32%) on the busiest day or only 11 seconds (+18%) on a typical day.

s) Junction 26: A12 / B1438

9.5.98 The Refined DCO forecast flows at this location have fluctuated with some relatively large increases and decreases predicted. The results predicted by the Junctions 9 model have therefore changed significantly with reductions in RFC of up to -0.36 and increases up to +0.11 with changes in delay showing a similar pattern.

9.5.99 Overall, the latest junction model assessment predicts that the junction will continue to operate near or above capacity with significant delays predicted across all three approaches from 07:00-08:00, 08:00-09:00 and 15:00-16:00.

Table 9.35: J26 - Updated maximum ratio of flow to capacity (RFC) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.35	0.37	0.37	0.38	0.40	0.40	0.40
07:00-08:00	0.66	0.95	1.19	1.06	1.21	1.23	1.23
08:00-09:00	0.79	0.79	1.06	1.08	1.06	1.11	1.11
15:00-16:00	0.89	1.01	1.00	1.03	1.03	1.01	1.01
17:00-18:00	0.67	0.67	0.67	0.94	0.71	0.70	0.70

Table 9.36: J26 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	4	4	4	4	4	4	4
07:00-08:00	6	30	330	103	358	423	422
08:00-09:00	10	10	94	121	98	158	160
15:00-16:00	20	63	62	78	77	70	68
17:00-18:00	8	10	11	34	11	10	10

9.5.100 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model. As this junction is also near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impact.

9.5.101 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increases in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered indiscernible and are not referenced.

9.5.102 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J26 with no significant increases in travel times expected and only small increases in queue lengths (+2 to 3 PCUs).

9.5.103 In 2028, the Sizewell C flows are not anticipated to have an impact on the B1438 or A12 north approaches. A slight impact is anticipated on the A12 south approach with queue lengths expected to increase by +5 to 9 PCUs and up to 19 PCUs from 08:00-09:00 on the busiest day and by up to +10 PCUs on a typical day. Travel times on the A12 south approach are also expected to increase by up to 16 seconds (+12%) on the busiest day or up to 9 seconds (+7%) on a typical day.

t) Junction 27: A12 / B1079 Grundisburgh Road

9.5.104 The Refined DCO forecast flows at this location have fluctuated with some relatively large increases and decreases predicted. The results predicted by the Junctions 9 model have therefore changed significantly with reductions in RFC of up to -0.62 and increases up to +0.03 with changes in delay showing a similar pattern.

9.5.105 Overall, the latest junction model assessment predicts that the junction will continue to operate near or above capacity from 08:00-09:00 with delays of up to around 5 minutes predicted in 2034 regardless of the presence of Sizewell C flows. There are some signs of stress from 07:00-08:00 in 2034 but delays remain low (below 17s per vehicle).

9.5.106 The addition of Sizewell C flows is not predicted to increase delays significantly at this location.

Table 9.37: J27 - Updated maximum ratio of flow to capacity (RFC) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.31	0.32	0.34	0.33	0.40	0.38	0.38
07:00-08:00	0.69	0.73	0.87	0.78	0.87	0.90	0.89
08:00-09:00	0.88	0.89	0.93	0.95	0.96	1.21	1.18
15:00-16:00	0.79	0.80	0.80	0.82	0.81	0.83	0.83
17:00-18:00	0.74	0.75	0.75	0.76	0.75	0.79	0.79

Table 9.38: J27 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	3	3	3	4	4	4	4
07:00-08:00	8	8	14	9	14	17	17
08:00-09:00	32	41	58	58	78	291	253
15:00-16:00	13	14	15	19	19	24	24
17:00-18:00	8	9	9	10	10	12	12

9.5.107 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model. As this junction is also near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impacts.

9.5.108 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increase in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered discernible and are not referenced.

9.5.109 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J27.

9.5.110 In 2028, the Sizewell C flows are not anticipated to have an impact on the B1079 west approach. The B1079 east is expected to experience a slight impact from 16:00-17:00 with queue lengths predicted to increase by 7 PCUs and travel times by 37 seconds on the busiest day but by only 5 PCUs and 30 seconds on a typical day. The A12 north approach is predicted to experience a small increase in delays of up to 10 seconds (+9%) from 08:00-09:00 on the busiest day and a similar impact on a typical day. The A12 south approach is only impacted by Sizewell C flows from 08:00-09:00 when queues are predicted to increase by 14 PCUs and travel times by 11 seconds (+11%) on the busiest day with a similar impact predicted on a typical day.

u) Junction 28: A12 / A1152, Melton

9.5.111 The Refined DCO forecast flows at this location have fluctuated with some relatively large increases and decreases predicted. The results predicted by the Junctions 9 model have therefore changed with reductions in RFC of up to -0.22 with changes in delay showing a similar pattern.

9.5.112 Overall, the latest junction model assessment predicts that the junction will continue to operate near capacity from 08:00-09:00 however delays are expected to remain low (less than 23s per vehicle). From 07:00-08:00, the junction shows some signs of stress in terms of RFCs due to the addition of Sizewell C flows but delays are not predicted to increase by more than 6s per vehicle. The junction is therefore predicted to continue to operate in a similar manner to current conditions.

Table 9.39: J28 - Updated maximum ratio of flow to capacity (RFC) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.29	0.31	0.37	0.32	0.42	0.34	0.34
07:00-08:00	0.69	0.73	0.86	0.76	0.86	0.80	0.80
08:00-09:00	0.84	0.87	0.88	0.90	0.91	0.83	0.86
15:00-16:00	0.79	0.80	0.82	0.83	0.83	0.81	0.82
17:00-18:00	0.78	0.79	0.80	0.80	0.80	0.78	0.78

Table 9.40: J28 - Updated maximum junction delay (seconds per vehicle) – no fuel and income, actual flow

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	3	3	3	3	3	3	3
07:00-08:00	6	6	12	7	12	8	8
08:00-09:00	14	16	16	22	23	13	15
15:00-16:00	8	8	9	10	10	10	10
17:00-18:00	7	8	8	8	8	11	11

9.5.113 Due to the sensitivities of the A12 corridor from Seven Hills to Melton, this junction has also been assessed in more detail within the A12 VISSIM model. As this junction is also near capacity, the VISSIM model is considered to be the more reliable tool for assessing the impacts.

9.5.114 The VISSIM model predicts that the Sizewell C flows will have a small impact on average queue lengths and travel times. Any increases in queue lengths of less than 2 PCUs or travel time increases of 5 seconds or less are considered indiscernible and are not referenced.

9.5.115 In 2023, Sizewell C flows are not anticipated to have a significant impact on the performance of J28 with no significant increases in travel times expected and negligible increases in queue lengths (+2 PCUs).

9.5.116 In 2028, the Sizewell C flows are not anticipated to have an impact on the A1152 approach. The A12 north approach is predicted to experience a small increase in queue lengths of 2-4 PCUs. The A12 south approach is predicted to experience a similar impact with queue lengths expected to increase by 3-4 PCUs. Travel times on the approach to J28 are not expected to change as a result of the Sizewell C flows.

v) Junction 29: A12 / New Road / Woodbridge Road, Boulge

9.5.117 The Refined DCO forecast flows at this location have reduced compared to the flows being assessed within the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. Overall, the results predicted by the Junctions 9 model have increased as detailed below.

9.5.118 In addition to this change, the modelled major carriageway width at J29 has been reduced in response to comments from SCC. The major carriageway widths used for the modelling presented in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] included the A12 diverge lanes. Including the diverge lanes in their entirety is likely to provide an overestimate of minor arm capacities, whilst excluding them entirely is likely to result in a particularly conservative assessment.

9.5.119 TRL advise conducting sensitivity tests to determine how sensitive the model is to the presence of left turning flows (the vehicles using the diverge lanes). It is recommended that this sensitivity analysis is then used to determine an appropriate manual capacity reduction to allow for the right level of diverge lane impact within the model[1]. Due to limitations within the Junctions 9 modelling software, a manual capacity adjustment cannot be applied in a staggered crossroads model so an alternative approach to model calibration is therefore required.

9.5.120 Further analysis of the junction model has demonstrated that the results are particularly sensitive to the major carriageway width at this location. A series of carriageway width sensitivity tests have therefore been conducted with the intention of identifying the most representative approach to modelling J29. This is intended to identify the major carriageway width that provides the most balanced estimate of the impacts of the diverge lanes and the resulting delay and RFC forecasts.

9.5.121 The following three major carriageway widths have been tested to determine the width that is likely to provide the best representation of J29.

1. A major carriageway width of 12.2m north of the junction and 11.65m south of the junction (including the diverge lanes in their entirety) as assumed in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

2. A major carriageway width of 7m (completely excluding the diverge lanes).

3. A major carriageway width of 9.6m north of the junction and 9.3m south of the junction (midway between the two options above, i.e. partially including the diverge lanes).

9.5.122 During the development of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], the junction model was calibrated against observed queue length data in lieu of any other observed metrics. As demand on the minor arms is low (no more than 67 vehicles per hour), observed queues are typically low and for large periods of time no vehicles are observed. Occasional queues of 1 to 5 vehicles were observed to form for short periods when vehicles arrived in small platoons but queues were typically at the lower end of this range when they were observed. The junction model (option 1 above) was found to compare well with the observed queues on Woodbridge Road and New Road (the two minor arms). Similar base model queue lengths were also predicted by the two additional junction models (option 2 and 3).

[1] https://trlsoftware.com/support/knowledgebase/modelling-a-diverge-lane-for-left-turners-into-a-side-road/

9.5.123 Whilst the base model queue lengths were found to match observations in all three of the junction model options listed above, additional comparison of modelled and observed delays has helped to highlight shortcomings of some of the options. Delays on Woodbridge Road and New Road were recorded through observations of the video footage collected as part of the turning count surveys in March 2019. Delays were estimated by recording the length of time between arriving at the junction and joining the A12 for each vehicle respectively and taking an average of these observations. Peak flows on the A12 and the minor arms at J29 were found to occur from 08:00-09:00 and 15:00-16:00 so detailed analysis of the observed delays has therefore focussed on these time periods. The observed average vehicle delays are presented in **Table 9.41**.

Table 9.41: Observed average delay per vehicle (seconds) – March 2019

Time	Woodbridge Road (west)		New Road (east)	
	Left turn	Right turn	Left turn	Right turn
08:00-09:00	16	29	11	38
15:00-16:00	31	52	14	17

9.5.124 Vehicles were observed to make the left turn onto the A12 relatively easily from both minor arms. Right turning movements, which are particularly popular from Woodbridge Road, were more difficult to undertake due to the need to find a gap in traffic on both the A12 northbound and southbound concurrently. The left turn from New Road was made easier due to the presence of vehicles on the A12 southbound allowing vehicles from New Road to merge which the junction model is not able to account for.

9.5.125 Delays from the three base year (2019) junction models (options 1 to 3) have been compared to the observed delays as shown in **Plate 9.5** and **9.6**.

Plate 9.5: J29 Modelled vs Observed delay per vehicle (08:00-09:00)

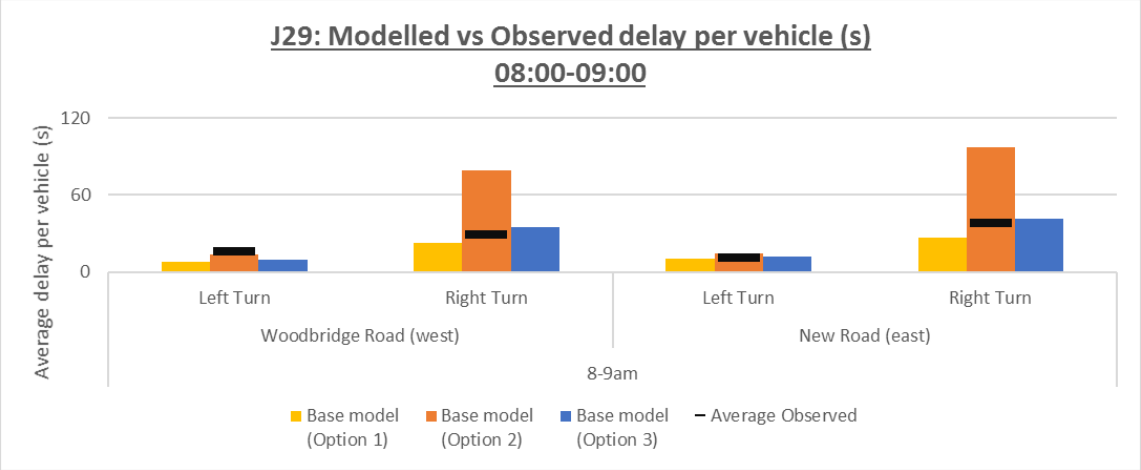
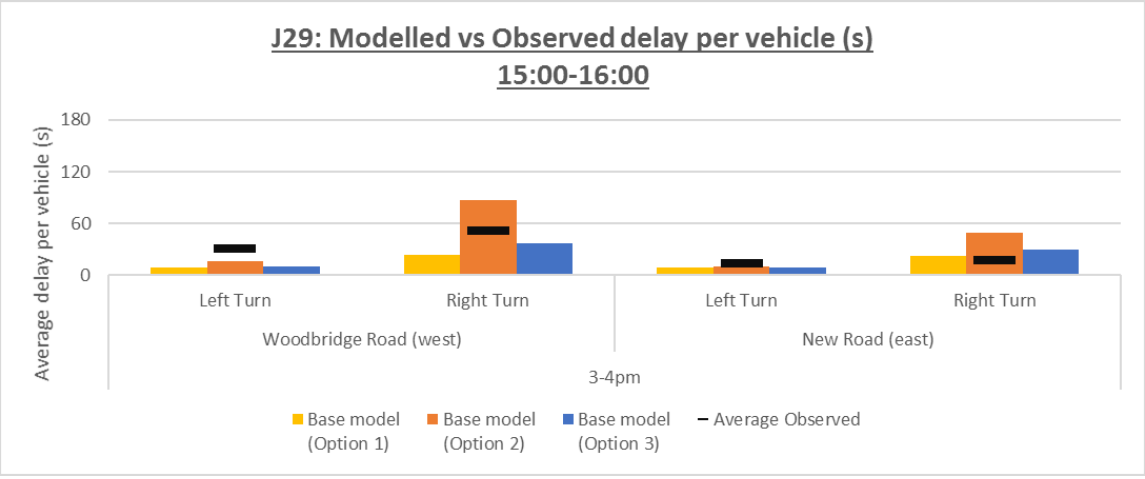


Plate 9.6: J29 Modelled vs Observed delay per vehicle (15:00-16:00)



9.5.126 This demonstrates that option 1 (diverge lanes fully included) has a tendency to underestimate minor arm delays. Option 2 (diverge lanes excluded) has a tendency to overestimate minor arm delays, particularly the right turning movements. Option 3 (partially include diverge lanes) is found to provide an intermediate assessment where delays on the minor arms compare reasonably well to those observed.

9.5.127 It is therefore considered that the option 3 model provides the best representation of J29 and should be used for forecasting. The base and forecast results from the option 3 model are presented in **Table 9.42** and **Table 9.43**.

Table 9.42: J29 - Updated maximum ratio of flow to capacity (RFC) – partially including diverge lane widths

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.04	0.05	0.06	0.05	0.06	0.05	0.05
07:00-08:00	0.24	0.30	0.49	0.34	0.51	0.33	0.34
08:00-09:00	0.38	0.51	0.69	0.65	1.00	0.47	0.48
15:00-16:00	0.39	0.49	0.58	0.62	1.00	0.73	0.73
17:00-18:00	0.19	0.24	0.29	0.29	0.34	0.31	0.31

Table 9.43: J29 - Updated maximum junction delay (seconds/vehicle) – partially including diverge lane widths

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	11	11	12	11	13	11	11
07:00-08:00	23	29	64	34	68	31	33
08:00-09:00	41	55	106	86	390	43	44
15:00-16:00	37	50	71	81	445	119	120
17:00-18:00	24	30	38	36	46	39	39

9.5.128 The RFCs at J29 are generally predicted to remain low due to the low level of flow on the two minor arms. The one exception to this is Woodbridge Road in the 2028 Peak Construction scenario from 08:00-09:00 and 15:00-16:00 when Woodbridge Road is estimated to have a capacity of 6 and 12 vehicles per hour respectively and flows that match the capacities, resulting in an RFC of 1.00 in both instances.

9.5.129 In the 2019 base scenario, the delays predicted by the junction model look similar to those observed, as mentioned above. Delays are predicted to continue to increase over time during the Reference Case scenarios (without Sizewell C demand), particularly from 08:00-09:00 and 15:00-16:00 peaking at 119 seconds (2-minutes) on Woodbridge Road in the 2034 Reference Case. The addition of Sizewell C flows results in further delay being added to the minor arms, particularly on Woodbridge Road which is the source of all of the maximum delays reported in **Table 9.43**.

9.5.130 Delays on New Road are predicted to remain below 85 seconds in all scenarios with the exception of the 2028 Peak Construction scenario when they are precited to increase to 180 seconds from 08:00-09:00.

9.5.131 Whilst the option 3 junction model is demonstrated to provide a reasonably realistic representation of the base scenario it should be noted that the usual junction model limitations set out in **Section 9.4** still apply. This means there are some doubts about whether the junction model is able to realistically predict RFCs and delays in scenarios where the junction is over capacity. Whilst it is likely that delays on the minor arms at

J29 would increase as a result of the Sizewell C flows on the A12, the magnitude of the delay increase is likely to be overestimated in scenarios that have high RFCs, i.e. from 08:00-09:00 and 15:00-16:00 in the Peak Construction scenario. In these scenarios delays are estimated to increase by 5-6 minutes as a result of the Sizewell C flows. It is likely that the junction model is predicting outside of its range of stability (exponential increases in RFCs/delays are a good indication of this). If delays were to increase above a few minutes the small numbers of drivers using Woodbridge Road and New Road are likely to find an alternative route or the courtesy behaviour observed at present may become more prevalent.

9.5.132 It is also worth considering that the VISSIM modelling that has been conducted just south of this location demonstrates that the junction models in this area routinely overestimate delays when over-capacity. This junction is located on the northern edge of the A12 VISSIM study area but the junction has not been included in the VISSIM model as it was not the focus of that assessment. However, it is clear from the comparison of the other stand-alone junction models and the A12 VISSIM corridor model summarised within this chapter, that the queuing and delay predicted in the stand-alone junction model does not materialise within the VISSIM model and that more confidence is placed on the VISSIM results along this section of the A12.

9.5.133 SZC Co. propose that the traffic flow, driver delay and road safety performance of this junction be monitored during the construction of Sizewell C via the Transport Review Group (TRG), and impacts managed in alignment with the construction phase management plans. The Section 106 Heads of Terms in **Appendix 8.4J** of the **Planning Statement** (Doc Ref. 8.4) [APP-600] sets out a transport contingency fund that would be available to the TRG to address any identified issues, should they arise.

w) Junction 34bc: B1078 / A12 southbound off-slip / A12 southbound on-slip, near Lower Hacheston

9.5.134 Within the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], the B1078 / A12 southbound off-slip and the B1078 / A12 southbound on-slip were assessed separately as two individual junctions (J34b and J34c). Due to the close proximity of these junctions, it was considered to be more robust to combine the two junctions into a single staggered crossroads model (J34) so that interaction between the two T-junctions can be taken into account. The J34b and J34c results are therefore intended to be replaced with the J34bc results presented here.

9.5.135 In addition to the change in modelling approach, the Refined DCO forecast flows in this location have shown some small fluctuations with the

exception of the A12 southbound off-slip right turn which is now predicted to experience slightly higher flows from 08:00-09:00 and 17:00-18:00.

9.5.136 The latest junction modelling predicts that the junction will continue to operate with spare capacity in all time periods. The only exception is from 08:00-09:00 when delays for the right turn onto the A12 southbound on-slip are higher across all years and made slightly worse in 2028 (+9s per vehicle) by the addition of the Sizewell C flows.

Table 9.44: J34 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.17	0.18	0.18	0.18	0.19	0.19	0.19
07:00-08:00	0.49	0.51	0.52	0.52	0.56	0.55	0.55
08:00-09:00	0.77	0.80	0.81	0.82	0.87	0.92	0.92
15:00-16:00	0.37	0.38	0.38	0.42	0.55	0.47	0.47
17:00-18:00	0.38	0.38	0.52	0.39	0.47	0.46	0.45

Table 9.45: J34 - Updated maximum junction delay (seconds/vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	8	8	8	8	9	8	8
07:00-08:00	11	12	13	12	13	13	13
08:00-09:00	23	26	27	30	39	54	56
15:00-16:00	11	12	13	13	16	14	14
17:00-18:00	12	12	17	13	14	13	13

x) Junction 38: A12 / B1125 Angel Lane, Blythburgh

9.5.137 The Refined DCO forecast flows at this location have changed very little, however visibilities in the model have been adjusted to address comments made by SCC. This results in RFCs changing by +/- 0.13 and delays changing by +/- 15s per vehicle.

9.5.138 The latest junction model assessment predicts that the junction will continue to operate with spare capacity in all years and time periods. Delays on Angel Lane in the Reference Case scenarios are forecast to remain relatively low (up to 30s per vehicle). In 2023, the addition of Sizewell C flows for the busiest day increases the delay on Angel Lane from 19 to 38s per vehicle, however this impact is only present in the Early Years and all other impacts are less than 10s per vehicle.

Table 9.46: J38 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.07	0.09	0.13	0.09	0.11	0.09	0.09
07:00-08:00	0.20	0.24	0.42	0.26	0.32	0.27	0.27
08:00-09:00	0.32	0.33	0.38	0.35	0.37	0.38	0.38
15:00-16:00	0.46	0.49	0.55	0.50	0.61	0.56	0.56
17:00-18:00	0.30	0.43	0.71	0.44	0.48	0.26	0.26

Table 9.47: J38 - Updated maximum junction delay (seconds/vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	10	10	11	10	12	11	11
07:00-08:00	16	17	25	17	22	18	18
08:00-09:00	18	19	21	20	21	21	21
15:00-16:00	22	24	27	25	34	30	29
17:00-18:00	15	19	38	20	22	16	16

y) Junction 45: A12 / Tinker Brook proposed roundabout, Stratford St Andrew

9.5.139 This roundabout is proposed to allow the southern extent of the two village bypass to join the A12. Construction of the roundabout is planned to be complete before 2028; therefore, the proposed roundabout layout has been tested in 2028 and 2034 only.

9.5.140 The Refined DCO forecast flows at this location have fluctuated with increases of up to +37vph and decreases of up to -77vph now being predicted. The results predicted by the Junctions 9 model have therefore changed by +/- 0.06 with reductions in delay of up to 25s per vehicle and increases of up to 2s per vehicle.

9.5.141 Overall, the latest junction model assessment predicts that the junction will operate with spare capacity in all time periods in both 2028 and 2034. The junction model delays are low with no more than 10s per vehicle predicted.

Table 9.48: J45 - Updated maximum ratio of flow to capacity (RFC)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0.00	0.00	0.00	0.00	0.40	0.00	0.40
07:00-08:00	0.00	0.00	0.00	0.00	0.69	0.00	0.68
08:00-09:00	0.00	0.00	0.00	0.00	0.70	0.00	0.71
15:00-16:00	0.00	0.00	0.00	0.00	0.72	0.00	0.71
17:00-18:00	0.00	0.00	0.00	0.00	0.62	0.00	0.58

Table 9.49: J45 - Updated maximum junction delay (seconds/vehicle)

	Base	2023		2028		2034	
		RC	EY	RC	PC	RC	OP
06:00-07:00	0	0	0	0	5	0	5
07:00-08:00	0	0	0	0	9	0	9
08:00-09:00	0	0	0	0	9	0	10
15:00-16:00	0	0	0	0	10	0	10
17:00-18:00	0	0	0	0	7	0	6

9.6 A12 Corridor Assessment

9.6.1 The A12 VISSIM model (documented in **Appendix 9C**) was developed to provide additional detail for the assessment of the A12 corridor from the A14 to Melton. VISSIM results for each junction are contained in the respective junction assessments above (J21-28). In addition to providing a prediction of junction performance, the VISSIM model is also able to estimate the level of overall impact that might be experienced along the A12 corridor as a whole in terms of journey time and delay.

9.6.2 The VISSIM model has been used to assess both the 2023 Early Years and 2028 peak construction scenarios. The 2034 Operational Phase has not been assessed within the VISSIM model as Sizewell C traffic demand on the A12 corridor is low in this scenario (i.e. no more than 20 veh/hr).

9.6.3 The A12 VISSIM model has been used to assess both the Refined DCO forecast flows for the DCO Integrated Freight Strategy as well as the proposed changes explained in the **Freight Management Strategy** (Doc. Ref. 8.18) and the resultant reduction in HGV volumes. A summary of the DCO and Preferred Option HGV volumes is provided in Chapter 4 on this Transport Assessment Addendum. **Table 9.56** summarises the Sizewell C HGV daily movements for the 2023 and 2028 scenarios that have been assessed with the A12 VISSIM model.

Table 9.50: Peak Construction HGV volume tests

Year	Scenario description	Sizewell C daily HGV **two-way movements**	
		DCO	**Preferred Option (change 1 & 2)**
2023	Early Years	600	600
2028	Peak construction typical day	650	500
	Peak construction busiest day	1,000	700

a) Network statistics

i. 2023 Early Years

9.6.4 **Table 9.51** summarises the network statistics for the 2023 Early Years assessment.

Table 9.51: 2023 VISSIM Network Statistics

Overall Network Statistics	**AM (6-9am)**			**PM (3-6pm)**		
	2019 Base	**2023 RC**	**2023 EY**	**2019 Base**	**2023 RC**	**2023 EY**
Total Time Taken (h)	2,390	2,546	2,655	3,154	3,419	3,470
Total Distance (km)	163,638	168,070	173,630	212,030	218,666	220,896
Total Vehicles	24,866	25,535	26,018	33,237	34,457	34,695
Total Delay (h)	403	498	540	563	731	755
Avg. Speed (mph)	43	41	41	42	40	40
Avg. Delay / Vehicle (s)	58	70	75	61	76	78

9.6.5 During the AM and PM peaks, the network-wide statistics show that the extra vehicles generated by Sizewell C do not cause a significant increase in the time, distance or delay per vehicle compared to the Reference Case scenario and the overall impact is therefore minimal in 2023.

9.6.6 The VISSIM model predicts that the average driver will experience a slight increase in average delay of +5 seconds (+7.1%) in 2023 Early Years AM peak compared to the Reference Case which would not be considered significant. During the PM peak, there is very little difference in the Early

Years and Reference Case delay values as 2 seconds change is considered immaterial. The average speed in the network remains almost the same across all the scenarios which further demonstrates that there is very little effect observed following the inclusion of Sizewell C traffic movements in the Early Years.

9.6.7 Overall, the network-wide statistics show that the impact felt by the average driver as a result of the Sizewell C Early Years construction traffic is likely to be negligible in both the AM and PM periods.

ii. 2028 Peak Construction

9.6.8 **Table 9.52** summarises the network statistics for the 2028 Peak Construction DCO scenarios and **Table 9.53** summarises the 2028 Peak Construction preferred option (change 1 & 2) scenarios.

Table 9.52: 2028 VISSIM Network Statistics - DCO

AM (06:00-09:00)			
2028	**Reference Case**	**DCO Busiest Day (1000 HGVs)**	**DCO Typical Day (650 HGVs)**
Total Time Taken (h)	2,693	2,877	2,845
Total Distance (km)	175,572	183,273	182,468
Total Vehicles	26,625	27,359	27,253
Total Delay (h)	559	647	627
Avg. Speed (mph)	41	40	40
Avg. Delay / Vehicle (s)	76	85	83
PM (15:00-18:00)			
2028	**Reference Case**	**DCO Busiest Day (1000 HGVs)**	**DCO Typical Day (650 HGVs)**
Total Time Taken (h)	3,747	3,980	3,937
Total Distance (km)	231,152	237,519	236,695
Total Vehicles	36,460	36,995	36,937
Total Delay (h)	908	1,060	1,029
Avg. Speed (mph)	38	37	37
Avg. Delay / Vehicle (s)	90	103	100

Table 9.53: 2028 VISSIM Network Statistics – Preferred Option (change 1 & 2)

AM (06:00-09:00)			
2028	**Reference Case**	**Preferred Option Typical Day (500 HGVs)**	**Preferred Option Busiest Day (700 HGVs)**
Total Time Taken (h)	2,693	2,827	2,847
Total Distance (km)	175,572	182,069	182,676
Total Vehicles	26,625	27,206	27,272
Total Delay (h)	559	615	626
Avg. Speed (mph)	41	40	40
Avg. Delay / Vehicle (s)	76	81	83
PM (15:00-18:00)			
2028	**Reference Case**	**Preferred Option Typical Day (500 HGVs)**	**Preferred Option Busiest Day (700 HGVs)**
Total Time Taken (h)	3,747	3,924	3,951
Total Distance (km)	231,152	236,295	236,824
Total Vehicles	36,460	36,904	36,953
Total Delay (h)	908	1,022	1,041
Avg. Speed (mph)	38	37	37
Avg. Delay / Vehicle (s)	90	100	101

9.6.9 During the AM and PM periods, the network-wide statistics show that the addition of the Sizewell C vehicles results in little change to the distance and delay per vehicle when compared to the Reference Case and thus the Sizewell C impact is small.

9.6.10 Reviewing the relative statistics, it is possible to observe that the variation between the different HGV scenarios is minimal. For example, the VISSIM model predicts that the average driver will experience a delay increase of 5-9 seconds in the AM period of the 2028 peak construction scenario (depending on the number of HGVs) compared to the 2028 Reference Case. The model predicts that the average driver will experience a delay increase of 10-13 seconds in the PM period of the 2028 peak construction scenario (depending on the number of HGVs) compared to the 2028 Reference Case. The average speed in the network during the AM and PM remains almost the same across all scenarios.

9.6.11 The average speed throughout the network only decreases by 1 mph in the AM and PM period in the Peak Construction scenario (regardless of the HGV volume) compared to the 2028 Reference Case.

b) Journey times

9.6.12 The overall A12 corridor impact has been assessed by comparing the with-Sizewell C journey times along the A12 (northbound and southbound) to the equivalent Reference Case travel times.

9.6.13 In 2023, the Sizewell C Early Years impact in terms of overall journey times along the A12 corridor are summarised in **Table 9.54**. This demonstrates that average journey times are not predicted to increase by more than 18 seconds when travelling northbound between the A14 and the A1152 and by no more than 12 seconds when travelling southbound.

Table 9.54: A12 corridor travel time – 2023 Early Years

Hour	A12 Northbound travel time (seconds)			A12 Southbound travel time (seconds)		
	2023 RC	2023 EY	EY vs RC	2023 RC	2023 EY	EY vs RC
06:00-07:00	659	660	+1	664	665	+1
07:00-08:00	712	730	+18	716	721	+5
08:00-09:00	768	782	+14	793	805	+12
15:00-16:00	745	748	+3	724	726	+2
16:00-17:00	760	764	+4	746	747	+1
17:00-18:00	751	754	+3	719	724	+5

9.6.14 A series of distance-time graphs comparing the travel times across the difference scenarios are provided for the A12 corridor and the other travel time routes being monitored in VISSIM. These graphs can be found in **Appendix 9C.**

9.6.15 The AM period graphs demonstrate that there is a small difference between travel times along the A12 corridor in the 2028 Reference Case and 2028 Peak Construction scenarios from 08:00-09:00, regardless of the volume of Sizewell C HGVs. A similar conclusion can be drawn from 06:00-07:00 and 07:00-08:00 with the lower delays during these hours resulting in shallower gradients on the distance-time graphs.

9.6.16 During the PM period, the most significant delays on the A12 occur from 15:00-16:00 during the 2028 Peak Construction scenario. There is generally less impact on the A12 in the PM period compared to the AM period and the Reference Case and Sizewell C scenarios both perform in a similar way (i.e. no impact). A similar conclusion can be drawn from 16:00-17:00 and 17:00-18:00 with the lower delays during these hours resulting in shallower gradients on the distance-time graphs.

9.6.17 In 2028, the Sizewell C impact in terms of overall travel times on the A12 northbound and southbound can be seen in **Table 9.55**: and **Table 9.56,** respectively.

Table 9.55: A12 corridor northbound increase in travel time - 2028 peak construction

	A12 Northbound travel time [s] - DCO				
Hour	**2028 Reference Case**	**Peak Construction (DCO Typical Day, 650 HGVs)**	**Peak Construction (DCO Busiest Day, 1,000 HGVs)**	**DCO Typical Day vs Ref Case**	**DCO Busiest Day vs. Ref Case**
6-7am	664	680	682	+16	+18
7-8am	728	752	753	+24	+25
8-9am	798	835	860	+37	+62
3-4pm	768	795	804	+27	+36
4-5pm	774	795	803	+21	+29
5-6pm	781	790	795	+9	+14
	A12 Northbound travel time [s] – Preferred Option (change 1 & 2)				
Hour	**2028 Reference Case**	**Peak Construction (Changes 1 and 2) Typical Day, 500 HGVs**	**Peak Construction (Changes 1 and 2) Busiest Day, 700 HGVs**	**Changes 1 and 2 Typical Day vs Ref Case**	**Changes 1 and 2 Busiest Day vs Ref Case**
6-7am	664	677	678	+13	+14
7-8am	728	741	746	+13	+18
8-9am	798	830	840	+32	+42
3-4pm	768	788	786	+20	+18
4-5pm	774	789	793	+15	+19
5-6pm	781	787	792	+6	+11

Table 9.56: A12 corridor southbound increase in travel time – 2028 peak construction

	A12 Southbound travel time [s] - DCO

Hour	2028 Reference Case	Peak Construction (DCO Typical Day, 650 HGVs)	Peak Construction (DCO Busiest Day, 1,000 HGVs)	DCO Typical Day vs Ref Case	DCO Busiest Day vs. Ref Case
6-7am	679	679	680	0	+1
7-8am	726	728	729	+2	+3
8-9am	805	833	836	+28	+31
3-4pm	740	756	759	+16	+19
4-5pm	770	796	805	+26	+35
5-6pm	748	766	770	+18	+22
	A12 Southbound travel time [s] – Preferred Option (change 1 & 2)				
Hour	2028 Reference Case	Peak Construction (Changes 1 and 2) Typical Day, 500 HGVs	Peak Construction (Changes 1 and 2) Busiest Day, 700 HGVs	Changes 1 and 2 Typical Day vs Ref Case	Changes 1 and 2 Busiest Day vs Ref Case
6-7am	679	679	679	0	0
7-8am	726	728	727	+2	+1
8-9am	805	826	834	+21	+29
3-4pm	740	753	756	+13	+16
4-5pm	770	793	795	+23	+25
5-6pm	748	762	764	+14	+16

9.6.18 The assessment demonstrates that Sizewell C flows are not expected to increase travel times along the A12 corridor significantly.

- For the DCO Integrated Freight Strategy (typical day 650 two-way HGVs) the increase in journey time on the A12 northbound would be 9-37 seconds depending on the hour and 0-28 seconds increase in the southbound direction depending on the hour.

- On the busiest day with the DCO Integrated Freight Strategy (1,000 two-way HGVs), the journey time on the A12 northbound is predicted to increase by up to 62 seconds between 08:00-09:00 and for all other hours the increase would be less than 36 seconds. In the southbound direction the model predicts a journey time increase of 0-28 seconds.

- For the proposed changes explained in the **Freight Management Strategy** (Doc. Ref. 8.18) on a typical day (500 two-way HGVs) the

model predicts an increase in journey time on the A12 northbound of 6-32 seconds. In the southbound direction the model predicts a journey time increase of 0-21 seconds.

- On the busiest day (700 two-way HGVs) under the proposed **Freight Management Strategy** (Doc. Ref. 8.18) the journey time on the A12 northbound is predicted to increase by 11-42 seconds. In the southbound direction the model predicts a journey time increase of 0-29 seconds.

9.6.19 The A12 corridor that has been assessed in VISSIM is approximately 14km in length. The increases in journey times have been forecast to occur across such a long route and would be imperceptible to road users and are, therefore, not considered significant.

9.6.20 Based on the VISSIM assessment, no perceivable impact is predicted and therefore no mitigation in the form of highway improvements is considered to be required for the A12 corridor between Seven Hills and Melton. SZC Co. will implement a **Construction Traffic Management Plan** (Doc. Ref. 8.7) and **Construction Worker Travel Plan** (Doc. Ref. 8.8) to monitor and manage the impacts of Sizewell C freight traffic and workforce movements during the construction of Sizewell C. A Transport Review Group (TRG) will be established to review these plans and review the monitoring report produced each quarter. A transport contingency fund will be made available to the TRG to be used if necessary to implement any further mitigation measures and remedial actions.

9.7 Summary of junction / corridor impacts

9.7.1 Of the 53 junctions that were assessed, 18 were identified as being likely to experience an impact as a result of Sizewell C traffic flows based on the cumulative worst case scenario of the busiest day (1,000 two-way HGVs) with Scottish Power traffic. This is broadly consistent with the conclusion of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] with the exception of J13, J29, J38 and J40 which were not previously predicted to experience an impact. A summary of the impacts is provided in **Table 9.57** in terms of the maximum increase in delay / vehicle predicted to occur across all arms and time periods at each junction.

9.7.2 An increase in junction approach delay of 10 seconds per vehicle or less is considered to be negligible and is highlighted in green. A slight impact

has been defined as an increase of 11-30 seconds and is highlighted in yellow. A moderate impact has been defined as an increase of 30-60 seconds and is highlighted in orange. A significant impact at an individual junction is defined as an increase of more than 60 seconds and is highlighted in red.

Table 9.57: Summary of Junction Impacts

Junction	Software	Largest increase in delay / vehicle due to Sizewell C flows, relative to the Reference Case (sec)		
		2023	2028	2034
J1: A140 / B1078, Coddenham	Junctions 9	+3	+3	+7
J2: B1078 / B1079, Otley College	Junctions 9	+5	+42	+11
J3: B1078 / B1116, Wickham Market	Junctions 9	+1	+2	0
J5: A1094 / B1069 Snape Rd	Junctions 9	+12	+11	+3
J6: A12 / A1094 / 2VBP	Junctions 9	+21	+9	+9
J8: B1121 / B1119, Saxmundham	Linsig	+29	+21	+5
J9: B1119 / B1122, Leiston	Linsig	+18	+121	+90
J11: A12 / A144, Bramfield	VISSIM	+10	+9	+5
J12: A12 / A1120, Yoxford	VISSIM	+3	+1	0
J13: A12 / B1122	VISSIM	+11	+4	+4
J14: A1094 / B1069 Church Rd	Junctions 9	+4	+8	+20
J17: A12 / Northern P&R Access	VISSIM	Not built	+5	0
J21: A12 / A14 Seven Hills	VISSIM / Linsig*	+8	+17	+257*
J22: A12 / Foxhall Rd	VISSIM / Linsig*	+38	+7	+7*
J22b: A12 / Brightwell Lakes access	VISSIM / Linsig*	0	+3	0*
J23: A12 / Barrack Square	VISSIM / Linsig*	+28	+16	+4*
J24: A12 / Anson Rd	VISSIM / Junctions 9*	+3	+38	+18*
J25: A12 / A1214	VISSIM / Linsig*	+3	+19	+522*
J26: A12 / B1438	VISSIM / Junctions 9*	+4	+16	+2*
J27: A12 / B1079	VISSIM / Junctions 9*	+2	+37	0*
J28: A12 / A1152	VISSIM / Junctions 9*	+2	+5	+1*
J29: A12 / New Rd / Woodbridge Rd	Junctions 9	+51	+365	+2
J34bc: A12 southbound / B1078	Junctions 9	+5	+9	+2

Junction	Software	Largest increase in delay / vehicle due to Sizewell C flows, relative to the Reference Case (sec)		
		2023	2028	2034
J38: A12 / Angel Lane	Junctions 9	+19	+9	0
J40: A12 / Bell Lane	Junctions 9	+41	+41	+2
J45: A12 / Tinker Brook / 2VBP	Junctions 9	Not built	+10	+10

**The A12 VISSIM model (J21-28) covers 2023 and 2028 only. The 2034 results for J21-28 are therefore sourced from the respective Junctions 9 and Linsig models which are likely to overestimate delays at junctions operating at or above capacity (i.e. J21 and J25 which are signalised roundabouts that have been optimised conservatively to prevent queuing on the circulatory). Sizewell C demand on the A12 between J21 and J28 is no higher than 20 vehicles per hour and impact in this area in 2034 is therefore unlikely.*

9.7.3 J9 is anticipated to operate at or above capacity during the Reference Case. The addition of Sizewell C flows passing through Leiston therefore leads to a notable increase in delays from 15:00-16:00 in 2028 and from 08:00-09:00 in 2034. The Section 106 Heads of Terms in **Appendix 8.4J** in the **Planning Statement** (Doc Ref. 8.4) describes a transport contribution to fund pedestrian, cycle and public realm improvements at Leiston. SZC Co. are working with Leiston Town Council to develop those proposals, which include J9. This on-going work is described in **Chapter 12** of this Addendum.

9.7.4 The A12 VISSIM model predicts that J21 will operate well in 2023 and 2028 even with the Sizewell C flows included. A slight impact is expected in 2028 due to the addition of HGVs using the freight management facility accessed via Felixstowe Road. Impacts are not anticipated in 2034 as Sizewell C flows are not expected to be higher than 24 vehicles per hour on any arm during any time period.

9.7.5 The A12 VISSIM model predicts that J25 will operate with little impact in 2023 and slightly impact in 2028. Impacts are not anticipated in 2034 as Sizewell C flows are not expected to be higher than 39 vehicles per hour on any arm during any time period.

9.7.6 At J29, the addition of Sizewell C flows is likely to increase the already high minor arm delays further which are predominantly caused by the background growth that is anticipated on the A12. The main SZC impact is anticipated to take place from 08:00-09:00 and 15:00-16:00 during the 2028 Peak Construction scenario but due to limitations of the junction

model it is not possible to determine the scale of impact with a high degree of certainty.

9.7.7 SZC Co. propose that the traffic flow, driver delay and road safety performance of this junction be monitored during the construction of Sizewell C via the Transport Review Group (TRG), and impacts managed in alignment with the construction phase management plans. The Section 106 Heads of Terms in **Appendix 8.4J** of the **Planning Statement** (Doc Ref. 8.4) [APP-600] sets out a transport contingency fund that would be available to the TRG to address any identified issues, should they arise.

10 ROAD SAFETY AND OFF-SITE HIGHWAY IMPROVEMENTS

10.1 Introduction

10.1.1 Chapter 10 of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] considered the potential effects on road safety of the Sizewell C Project and the off-site highway improvements proposed to mitigate the effects of the Sizewell C Project at various junctions. The chapter also considered road safety at several other junctions identified by Suffolk County Council in public consultation responses but where no mitigation measures are proposed.

10.1.2 This chapter of the **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) provides a forecast of the change in the number of road traffic collisions across the study area that might be expected given the additional traffic volumes during the construction and operational phases of Sizewell C.

10.1.3 This chapter also provides an update on the potential proposed schemes to be implemented as part of the B1078 Transport Safety Measures to be funded through the Section 106 Agreement, as set out in the draft **Section 106 Heads of Terms** (Appendix 8.4J) [APP-600] appended to the **Planning Statement** (Doc Ref. 8.4) [APP-590], and the **Update on Section 106 Agreement** (**Appendix 8.4J** of **Planning Statement**) [AS-012].

10.2 Forecast of Road Traffic Collisions

10.2.1 To inform the Health and Wellbeing Assessment in **Chapter 2** of the **Environmental Statement Addendum** (Doc Ref. 6.14), SZC Co. have forecast the change in the number of road traffic collisions across the study area that might be expected given the additional traffic volumes during the construction and operational phases of Sizewell C. These forecasts use the traffic modelling outputs presented in **Chapter 8** of **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) for the 2023 Early Years, 2028 Peak Construction and 2034 Operational Phase scenarios. **Appendix 10A** of this Addendum sets out the methodology used and results obtained and is summarised below.

10.2.2 There are three factors to consider in predicting the future number of road traffic collisions during the Sizewell C construction and operational phases:

- the number of road traffic collisions increases as traffic volumes grow due to background traffic growth and traffic from committed developments that are unrelated to Sizewell C;
- the COBALT (Cost Benefit Analysis Light Touch) methodology and parameters forecasts a continued decline in the number of road traffic collisions across the network, as observed in the 2013 to 2019 Suffolk data; and
- additional collisions from the additional traffic on the network during Sizewell C construction and operation.

10.2.3 In the 2023 Early Years scenario, background traffic growth and committed development traffic is forecast to increase the Reference Case number of collisions across the network from 289 (2014-2019 observed annual average from Suffolk data) to 317 per year. However, the continued decline forecast by COBALT would reduce the Reference Case number of collisions from 289 to 260 by 2023. This effect thus reduces the Reference Case number of collisions by 57 per annum. Sizewell C traffic is forecast to increase collisions by 14 per year across the entire network based on the Early Years traffic flows, with less increase in collisions during the start of the Early Years when traffic levels are lower. The impact on collisions due to Sizewell C is therefore between 4.4% (14/317) without the COBALT reduction and 5.4% (14/260) with the

COBALT reduction. Applying the historic severity split of collisions to the 14 additional collisions per year across the network would result in 12 slight collisions and 2 serious collisions.

10.2.4 Using the same method for the 2028 Peak Construction scenario, the annual number of collisions grows to 337 due to an extra five years of background traffic growth. The COBALT forecast reduces the number of collisions to 228 per annum, i.e. a reduction of 109 collisions per annum. The additional Sizewell C traffic is forecast to add 18 collisions to the local highway network based on the peak construction flows and there would be less collisions per year during the other years within the peak construction phase when traffic flows are lower. Using the same with/without COBALT reduction approach as above, gives a range of 5.3% to 7.8% for the increase in collisions in 2028 at peak construction. Applying the historic severity split of collisions to the 18 additional collisions across the network would result in 15 slight collisions, 2-3 serious collisions and 0.25 fatal collisions during the peak construction and lower during the other years within the peak construction phase. The increase in collisions is an aggregated value across the whole network within the study area with the increase on any individual link being considerably lower.

10.2.5 During the Operational Phase commencing in 2034, the analysis shows less than one additional collision per annum due to Sizewell C traffic increases, so the impact on road traffic collisions when Sizewell C construction is complete would be negligible.

10.2.6 This analysis does not take account of the embedded mitigation, which includes HGV driver rules, induction for HGV drivers at the freight management facility, monitoring of HGVs along the HGV routes and the worker code of conduct which includes driver rules for workers. The embedded mitigation will act to reduce collisions on the highway network.

10.3 B1078 corridor road safety and potential mitgation

10.3.1 Within the Draft Section 106 Heads of Terms in **Appendix 8.4J** of the **Planning Statement** (Doc Ref. 8.4) [APP-600] submitted with the Development Consent Order Application (May 2020), SZC Co. proposed to provide a contribution to fund transport safety measures on the B1078. Further work has been undertaken on potential road safety measures since the Application, in consultation with Suffolk County Council. This chapter describes the measures that are proposed to be implemented

along the B1078 between the A140 and the B1116 Fiveways roundabout just south of the southern park and ride site, using the identified funding.

1. B1078 road safety background

10.3.2 **Chapter 2** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] reports the road traffic collision data for the period May 2014 to April 2019. This covers the 22 km length of the B1078 from the A140 junction near to the A14 through Coddenham, several villages and Wickham Market to the B1116 Fiveways roundabout just south of the proposed southern park and ride site. Over this length of the B1078, there were 47 road traffic collisions during this five-year period, i.e. just over nine collisions per annum on average. Of these collisions, three were fatal, nine were serious and the remaining 35 slight in severity. There were no visible trends in the location or characteristics of the collisions; while it is difficult to identify causation factors, the data suggests that up to a quarter could be speed related.

10.3.3 Traffic volumes using the B1078 will change over time because of background traffic growth and committed development over the period 2015 (the base year for the traffic modelling) and 2023 the Early years assessment year for the Sizewell C project. This background growth is 35%. **Section 8.4** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] explains the reasons for the background traffic growth over this period. This growth is unrelated to the Sizewell C project.

10.3.4 No Sizewell C heavy goods vehicles (HGVs) or buses would use the B1078 and the growth in B1078 car and light goods vehicles (LGVs) resulting from the Sizewell C project in the 2023 Early Years scenario would be 3% - 7% at Wickham Market, as reported in **Table 8.4** of this Addendum. At 2028 peak construction, the increase would be 15% - 17% as reported in **Table 8.6** of this Addendum. Once construction of Sizewell C is complete and the power station operational, the change in forecast traffic volume on the B1078 due to Sizewell C would be negligible.

10.3.5 Based on these changes in traffic flows that are forecast to result from the Sizewell C construction phase, the road traffic collision assessment forecasts one additional road traffic collision per year in the 2023 Early Years scenario, three additional road traffic collisions per annum in the 2028 Peak Construction scenario and no change to the numbers of collisions on this length of B1078 once the power station becomes operational in 2034.

b) B1078 road safety measures

10.3.6 The Draft Section 106 Heads of Terms in **Appendix 8.4J** of the **Planning Statement** (Doc Ref. 8.4) [APP-600], identified a funding mechanism to deliver road safety mitigation measures at the A140/B1078 junction and on the B1078 near to Suffolk Rural (formerly Otley) College. SZC Co. still promote these works and they would be implemented using funding drawn down from the Section 106 agreement. The A140/B1078 and Suffolk Rural College schemes remain unchanged from the schemes described in **Chapter 10** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] and are shown in **Figures 10.1** and **10.2** of this Addendum.

10.3.7 In discussion with Suffolk County Council, SZC Co. have identified a range of highway improvement measures that could be implemented on the B1078 between the A140 and Wickham Market. These would be subject to further work, dialogue with Suffolk County Council and consultation with local communities but the potential measures include:

- Additional signage at bends;
- Resurfacing and road studs;
- High friction surfacing on junction approaches;
- Gateway features to raise awareness of settlements;
- Priority give way features where the carriageway narrows;
- Reducing existing speed limits; and
- Extending existing 30mph speed limits.

10.3.8 In Wickham Market, between Border Cot Lane and the River Deben bridge, proposals have been developed in consultation with Suffolk County Council, East Suffolk Council and Wickham Market Parish Council. They include footway widening around the Border Cot Lane / High Street junction, kerb build-outs and parking rationalisation over this length. There would be no change to the existing 30 mph speed limit.

10.3.9 East of the River Deben bridge, there is already an existing 30 mph speed limit and there are some repeater signs, but more could be introduced to reinforce lower speeds. The proposals, developed in consultation as

described above, also include gateway features improving the footway and cycleway on the north side of the B1078. This would enable those who wish to walk or cycle from Wickham Market to the southern park and ride site to do so safely. The scheme also includes an informal pedestrian crossing just west of Ash Road near the Oliver Hayward Playbarn.

c) Implementation of B1078 road safety improvements

10.3.10 Using funding from the section 106 agreement, SZC Co. proposes that Suffolk County Council develop, consult upon and implement appropriate measures triggered by the Early Years impacts at the start of that phase of the Sizewell C construction programme. SZC Co. would regularly monitor B1078 traffic volumes and vehicle speeds, at locations agreed with Suffolk County Council, for at least three years, which is the usual monitoring period for road safety schemes. The results would be reported back to the Transport Review Group to determine the effectiveness of the measures in:

- reducing vehicle speeds; and
- preventing an increase in the number of collisions on the B1078 between A140 and Wickham Market.

10.3.11 Based on the evidence gathered, the Transport Review Group would determine the need for any additional measures to mitigate the Sizewell C traffic impacts during the peak construction phase.

11 RAIL STRATEGY

11.1 Introduction

11.1.1 **Chapter 11** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] described the role of rail within the overall transport strategy for the movement of construction materials to build Sizewell C. It is proposed to construct a new 4.5km long rail route to the main development site, referred to as the green rail route, as a branch off the existing Saxmundham to Leiston branch line. The green rail route would be removed after construction of Sizewell C, land reinstated and level crossings removed. In addition, SZC Co. propose to upgrade the Saxmundham to Leiston branch line track to accommodate the forecast number of freight movements.

11.1.2 **Volume 9**, **Chapter 2 Description of Rail** (Doc Ref. 6.10) [APP-541] described the rail proposals in detail.

11.2 Additional information

11.2.1 **Chapter 9** of the **Environmental Statement Addendum** (Doc Ref. 6.14) describes the additional information of relevance to rail, which includes further investigative work on noise, vibration, ecology and air quality modelling which is based on refined traffic estimates described in **Chapter 8** of this **Transport Assessment Addendum** (Doc Ref 8.5(A)Ad).

11.2.2 None of this additional information is relevant to the proposed rail strategy set out in the DCO Application.

11.3 Potential changes to the rail operations

11.3.1 Since the Application was submitted SZC Co. has continued to work closely with stakeholders, including Network Rail and Suffolk County Council, and undertaken further planning in relation to construction requirements (see the **Materials Management Strategy Update**, **Appendix 2.2.C** of the **ES Addendum** (Doc Ref. 6.14)). SZC Co. has investigated further options to increase the volume of construction materials carried by sustainable modes as described in the updated **Freight Management Strategy** (Doc Ref. 8.18). With regards to rail, the preferred option proposes to operate four trains per day (eight

movements), five days a week with the resilience of being able to operate on a sixth day if necessary (Change 1).

11.3.2 Further work is required to confirm the viability of operating four trains per day, and SZC Co. is working closely with Network Rail and wider stakeholders to fully explore the issues and opportunities, and to maximise the rail capacity wherever possible.

11.4 Operating four trains per day

11.4.1 The potential to operate four trains (eight movements) per day along the green rail route (once constructed) is currently being investigated. Were this option to be progressed, eight train movements would operate predominantly overnight (between 23:00 and 07:00). It is possible that one of the eight train movements would take place during the day, but for assessment purposes, SZC Co. have assumed all movements would take place overnight to represent a worst case. Illustrative timetables for both the inbound and outbound directions can be seen below in **Table 11.1** and **Table 11.2**.

Table 581.1: Four trains per day illustrative inbound timetable

Inbound	Train 1	Train 2	Train 3	Train 4
Westerfield	02:12:00	03:00:00	03:48:00	04:44:00
Woodbridge	02:38:30	03:26:30	04:14:30	05:10:30
Melton	02:47:00	03:35:00	04:23:00	05:19:30
Wickham Market	03:01:30	03:49:30	04:37:30	05:33:30
Saxmundham	03:24:30	04:12:30	05:00:30	05:56:30
Saxmundham Jn	03:26:00	04:14:00	05:02:00	05:58:00
Sizewell	04:09:00	04:57:00	05:45:00	06:41:00

Table 11.2 Four trains per day illustrative outbound timetable

Outbound	Train 1	Train 2	Train 3	Train 4
Sizewell	22:28:30	23:20:00	00:08:00	00:56:00
Saxmundham Jn	22:56:00	23:48:00	00:36:00	01:24:00
Saxmundham	22:59:00	23:50:30	00:38:30	01:26:30

Outbound	Train 1	Train 2	Train 3	Train 4
Wickham Market	23:22:00	00:13:30	01:01:30	01:52:30
Melton	23:36:30	00:28:00	01:16:00	02:07:00
Woodbridge	23:44:30	00:36:00	01:24:00	02:15:00
Westerfield	00:11:00	01:02:30	01:50:30	02:41:30

11.4.2 In the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] it was assumed that once the green rail route was constructed all trains would operate directly to the main development site. Depending on the operational requirements of the main development site it may be necessary to operate the additional (fourth) train to the Land east of Eastlands Industrial Estate (LEEIE) siding.

11.4.3 If this were found to be required, trains travelling to the LEEIE siding would follow the same operational procedure used during the early years of construction and detailed in **Chapter 11** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. At no time would any trains pass through Leiston between 23:00 and 07:00.

1. Potential impacts on the East Suffolk line

ii. Noise mitigation

11.4.4 Environmental assessments have identified that it is necessary to reduce the permitted overnight (23:00 – 07:00) freight train speed to 10mph on some sections of the East Suffolk Line to mitigate noise and vibration impacts.

11.4.5 It should be noted that this speed restriction would only apply to SZC Co. freight trains, and not to passenger and maintenance trains or non SZC Co. freight trains.

iii. Level crossings

11.4.6 Were four or more trains per day to be progressed, there may be a need for Network Rail to undertake work to level crossings on the East Suffolk line, in line with their duties as infrastructure manager.

11.4.7 It is anticipated that this would be in relation to works which may be required to mitigate risk to users at level crossings where the increase in

train movements on the East Suffolk line generated by a higher number of train movements (four or more per day) requires additional risk mitigation over and above that which is present today.

11.5 Further options being considered for rail operations

11.5.1 SZC Co. continues to explore other options to maximise the capacity of rail for the movement of construction materials during peak construction. Those options include:

- Operating five trains per day; and
- Operating trains six days per week.

11.5.2 These options are being considered as a change to the Application, however for the purposes of the transport assessment these options are not assumed to generate more capacity than the preferred option. These options are described below.

1. Operating five trains per day

11.5.3 A potential fifth train would travel to either the main development site or LEEIE for a period of approximately two years during the construction phase when demand for bulk materials import is at its highest. This additional train could not operate overnight, although to represent a worst case for the noise and vibration impact assessment, SZC Co. has assumed that all additional trains would operate predominantly overnight to ensure a robust assessment.

11.5.4 As there is not enough capacity on the rail network overnight to operate the fifth train, it will need to run during normal operational hours. In the inbound direction, the flask path could be utilised to provide a fifth path. However, in the outbound direction it would be necessary to cancel a pair of passenger train services between Lowestoft and Ipswich either side of the freight train to enable the fifth service to run. Illustrative timetables showing how five trains per day could be achieved are shown in **Table 11.3** and **Table 11.4**.

Table 11.3 Five trains per day illustrative inbound timetable

Inbound	Train 1	Train 2	Train 3	Train 4	Train 5 (Flask Path)
Westerfield arr	-	-	-	-	**08:10:00**
Westerfield dep	02:12:00	03:00:00	03:48:00	04:44:00	**08:12:00**
Woodbridge arr	-	-	-	-	**08:36:00**
Woodbridge dep	02:38:30	03:26:30	04:14:30	05:10:30	**08:40:00**
Melton	02:47:00	03:35:00	04:23:00	05:19:30	08:45:00
Wickham Market	03:01:30	03:49:30	04:37:30	05:33:30	08:58:00
Saxmundham	03:24:30	04:12:30	05:00:30	05:56:30	09:18:00
Saxmundham Jn	03:26:00	04:14:00	05:02:00	05:58:00	09:19:00
Sizewell	04:09:00	04:57:00	05:45:00	06:41:00	10:02:00

Table 11.4 Five trains per day illustrative outbound timetable

Outbound	Train 1	Train 2	Train 3	Train 4	Train 5
Sizewell	22:28:30	23:20:00	00:08:00	00:56:00	11:32:00
Saxmundham Jn	22:56:00	23:48:00	00:36:00	01:24:00	12:00:00
Saxmundham	22:59:00	23:50:30	00:38:30	01:26:30	12:02:00
Wickham Market	23:22:00	00:13:30	01:01:30	01:52:30	12:22:00
Melton	23:36:30	00:28:00	01:16:00	02:07:00	12:35:00
Woodbridge	23:44:30	00:36:00	01:24:00	02:15:00	12:39:30
Westerfield	00:11:00	01:02:30	01:50:30	02:41:30	13:01:00

11.5.5 Further discussions with Greater Anglia would be required to establish if cancelling passenger trains to accommodate freight trains would be feasible.

b) Operating trains six days per week

11.5.6 A further option under consideration is the opportunity to operate trains six days per week, rather than five days per week as detailed in **Chapter 11** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

11.5.7 The early years and three trains per day operation would be as detailed in **Chapter 11** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], but across six days per week, rather than five.

11.5.8 The operation of four (**Tables 11.1** and **Table 11.2**) or five (**Tables 11.3** and **Table 11.4**) trains per day would operate as shown in the illustrative timetables above, although across six days per week rather than five.

12 WALKING AND CYCLING

12.1 Introduction

12.1.1 **Chapter 12** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] described the walking and cycling strategy for the Sizewell C Project. The chapter identified the infrastructure improvements that will be made to the walking and cycling environment by the Sizewell C Project to assist sustainable travel by workers living within Leiston and other villages immediately surrounding the Sizewell C main development and associated development sites.

12.1.2 Since that assessment was prepared, SZC Co. has continued consultation with stakeholders. This chapter provides additional information describing the outcomes of stakeholder consultation to date. In addition, SZC Co. proposes a formal change to the Application which would provide a new bridleway link between Aldhurst Farm and Kenton Hills (Change 15). This chapter of the **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) and the relevant chapters of the **Environmental Statement Addendum** (Doc Ref. 6.14) describes the additional information and changes to the proposals.

12.1.3 The proposed amendments to the public rights of way (PRoW) within the vicinity of the main development and associated development sites are shown on the **Access and Rights of Way Plans** (Doc Ref 2.4(A)) [AS-013] and are secured by the **Draft Development Consent Order** (**DCO**) (Doc Ref. 3.1) [APP-059].

12.2 Main development site

a) Coastal Path (Footpath E-363/021/0)

12.2.1 The coastal path (Footpath E-363/021/0) and publicly accessible wider coastline would be subject to disturbance and change as a result of the construction of new sea defences and cross shore infrastructure.

12.2.2 During construction of the sea defences and beach landing facility (BLF) the DCO Application (May 2020) assumed that the coastal path would need to be temporarily closed and users would be diverted via an inland diversion path.

12.2.3 In response to stakeholder comments on the length of the diversion route and duration of its closure, consideration has been given to ways in which disruption to coastal path users can be minimised. Discussions have taken place with East Suffolk Council and Suffolk County Council regarding the possibility of constructing the permanent BLF in sections and, when the alignment of the coastal path intersects the section of BLF under construction, temporarily diverting the coastal path a short distance around the construction area. Alternatively, the construction of the BLF could be designed to pass above the level of the coastal path, enabling users of the coastal path to pass safely underneath.

12.2.4 SZC Co. propose to divert the coastal path up and down the shoreline as necessary to facilitate construction of the permanent BLF and temporary BLF, except where it is considered unsafe to do so. Where required the temporary inland diversion would be used, as shown at **Volume 2**, **Chapter 15**, **Figure 15I.5** of the **ES** (Doc Ref. 6.3) [APP-270].

b) New bridleway link between Aldhurst Farm and Kenton Hills

12.2.5 The DCO Application (May 2020) assumed that the southern end of Bridleway 19 along Lover's Lane would remain open to the public during the construction phase, enabling access to Kenton Hills car park and extensive permissive footpath routes within Kenton Hills.

12.2.6 Kenton Hills is currently accessed from the south via Bridleway E-363/013/0. This is a bridleway designated along Lover's Lane between Sandy Lane and the B1122.

12.2.7 In response to comments from stakeholders on the safety of users travelling on carriageway along Lover's Lane (Bridleway E-363/013), a new bridleway link to Kenton Hills will be provided. The new proposed bridleway link is shown in drawing SZC-SZ0204-XX-000-DRW-100344 in the **Access and Rights of Way Plans** (Doc Ref 2.4(A)) [AS-013]. This is a change to the Application (Change 15) and is described in **Section 2.2** of the **Environmental Statement Addendum** (Doc Ref. 6.14).

12.2.8 This will connect the new north-south (off-road) bridleway, cycleway and footway that runs along the south side of Lover's Lane to the east of Kenton Hills with Bridleway 19 (Footpath E-363/019/0) immediately to the north of the Lover's Lane / Kenton Hills car park access junction.

12.2.9 The new bridleway link will run along the north side of Lover's Lane. This route will connect with the north-south (off-road) bridleway, cycleway and footway via a new uncontrolled bridleway crossing on Lover's Lane. The new bridleway link will remain open once construction of Sizewell C has been completed.

c) Bridleway E-363/013/0

12.2.10 Bridleway E-363/013/0 will be diverted along the new north-south (off-road) bridleway, cyclepath and footpath. The existing bridleway designation on Lover's Lane between Kenton Hills and the B1122 will be removed. The existing bridleway designation on Lover's Lane between Sandy Lane and Kenton Hills will be retained. These changes are shown on drawing SZC-SZ0204-XX-000-DRW-100344 in the **Rights of Way Plans** (Doc Ref. 2.14).

12.3 Two village bypass

12.3.1 The **Access and Rights of Way Plans** (Doc Ref 2.4(A)) [AS-013] in the DCO Application (May 2020) showed the incorrect existing alignment of Footpath E243/011/0 at Walk Farm Barn. The plans showed the footpath as it is used in practice by the public rather than its official alignment shown on Suffolk County Council's definitive map. This is corrected on the updated **Access and Rights of Way Plans** (Doc Ref. 2.4(B)).

12.3.2 Following additional stakeholder engagement, it is now proposed to divert Footpath E243/011/0 to the north of Walk Farm Barn. The existing alignment of E243/011/0 between Footpath E-243/003/0 and E-243/012/0 will be permanently stopped up. A new private means of access will also

be provided along the alignment of the new footpath to the north of Walk Farm Barn. The existing private means of access along Footpath E-243/003/0 will be retained.

12.3.3 The status of Footpath-243/003/0 and Footpath E-243/011/0 connecting an unnamed road between the A12 and Langham Road south of Farnham with an unnamed road between the A1094 and Langham Road south of Friday Street is proposed to be changed to bridleway status. The proposed diversion routes for Footpath-243/003/0 and Footpath E-243/011/0 will be designed to bridleway status, however there are no infrastructure improvements proposed where the alignment is unchanged.

12.4 Sizewell link road

12.4.1 A new shared footway and cycleway is proposed to run along the northern side of the Sizewell link road east of Moat Road. This route runs between points PCW12/34 and PCW12/36 as shown on drawing SZC-SZ0204-XX-000-DRW-100341 in the **Access and Rights of Way Plans** (Doc Ref. 2.4(B). This route connects to the shared footways and cycleways already proposed to run along the southern side of the Sizewell link road and to the north, and provides additional connectivity for pedestrians and cyclists in the area.

12.4.2 A number of minor changes are proposed to the PRoW diversions. These changes are summarised below. Further detail is provided in **Chapter 6** of the of the **ES Addendum** (Doc Ref 6.14).

- Footpath E-344/014/0: The start and end points of the diversion are the same as previously proposed in the Application, but the alignment of the diversion is now proposed to be straighter and run closer along the alignment of the Sizewell link road than previously proposed.
- Footpath E344/013/0: The start and end points of the diversion are the same as previously proposed in the Application, but the diversion is extended slightly further west.
- Footpath E-396/017/0: The diversion route was previously proposed to be a permanent footpath. This is now proposed to be both a walking and cycling route.
- Footpath E-396/020/0: The diversion route has been amended due to the realignment of Hawthorn Road. The diversion route will now

extend along the proposed route Sizewell link road, approximately 160m to the west, to cross the proposed route before heading east along the north side of the route to re-join Hawthorn Road.

12.5 Fen meadow compensation area at Pakenham

12.5.1 Since the DCO Application (May 2020), SZC Co. have proposed a new fen meadow compensation area at Pakenham (Change 11).

12.5.2 A number of public rights of way cross the compensation area as shown in drawing SZC-SZ0204-XX-000-DRW-100355 in the **Access and Rights of Way Plans** (Doc Ref. 2.4(B)). None of these footpaths will be closed or diverted (either temporarily or permanently) during construction or operation of the proposed development.

12.6 Other walk, cycle and public realm improvements

12.6.1 **Chapter 12** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] notes that SZC Co. will provide funding for walk and cycle improvements. This will be secured through obligations in a S106 agreement, provided in the draft **Section 106 Heads of Terms** (Appendix 8.4J) [APP-600] appended to the **Planning Statement** (Doc Ref. 8.4) [APP-590], and the **Update on Section 106 Agreement** (**Appendix 8.4J** of **Planning Statement**) [AS-012].

12.6.2 This included a Leiston Transport Contribution to fund pedestrian, cycle, highway and public realm improvements in Leiston and a Wickham Market Transport Contribution to fund pedestrian, cycle, highway and public realm improvements in Wickham Market.

12.6.3 Further information on the detail of these schemes is now available and provided below. SZC Co. continues to work with Suffolk County Council, East Suffolk Council, Leiston Town Council and Wickham Market Parish Council to progress towards formal public consultation on the proposals in 2021. SZC Co. is seeking to agree a developed and costed design with Suffolk County Council, which would be appended to the Section 106 agreement.

1. Leiston improvement scheme

12.6.4 SZC Co. has been working in partnership with Leiston Town Council and Suffolk County Council in order to agree the proposed transport improvements to be funded by the Leiston transport contribution.

12.6.5 The proposed transport improvements seek to prioritise walking and cycling as well as enhance the public realm in the centre of Leiston. Certain traffic movements would become restricted on Main Street, High Street, Sizewell Road and Cross Street, thereby allowing existing carriageway space to be re-allocated to other road users.

12.6.6 The following types of walking and cycling improvements are proposed:

- Widened footways along Main Street, High Street, Cross Street and Sizewell Road, creating more space for pedestrians;
- One-way vehicle traffic on Main Street, High Street and Sizewell Road, with cycling permitted in both directions which will create more pleasant conditions for cyclists using these key routes through the town centre;
- Modal filters, which motor vehicles cannot pass through but pedestrians and cyclists can, at the eastern end of Cross Street and on Valley Road, thereby reducing the volume of vehicular traffic using those roads and the town centre more generally.

12.6.7 The additional footway space would also permit the introduction of public realm improvements, for instance new seating or a cycle hub close to Leiston Library or trees along High Street.

12.6.8 These improvements would help reduce the dominance of vehicular traffic in the centre of Leiston and help create a safer environment for walking and cycling by encouraging lower vehicle speed. The public realm improvements would also help foster a better sense of place within the centre of Leiston, by making it an attractive location for residents, workers and visitors to walk and cycle around.

b) Wickham Market improvement scheme

12.6.9 The Wickham Market improvement scheme involves proposed changes to highway design and public realm across Wickham Market.

12.6.10 During previous rounds of public consultation, several options were presented to address existing congestion along the B1078 High Street east of the junction with Border Cot Lane. Having considered alternatives including making improvements to Easton Road or temporary removal of on-street parking, it was decided to work with Wickham Market Parish Council to develop a more holistic package of measures which would deliver improvements for pedestrians and cyclists within Wickham Market.

12.6.11 The improvement scheme is primarily focussed on B1078 High Street east of the junction with Border Cot Lane. However, it also provides improvements on High Street south of Border Cot Lane, as well as other roads in Wickham Market, which are not anticipated to experience noticeable increase in traffic flows but which currently have limited facilities for pedestrians.

12.6.12 A package of highway and public realm improvements are proposed across Wickham Market. Principal features include:

- Wider footways, principally along the High Street as well as other roads;
- Increased number of informal crossing points across the High Street, to enable pedestrians to cross more frequently;
- Reconfiguration of the High Street / Chapel Lane, High Street / Border Cot Lane and High Street / Spring Lane junctions to benefit pedestrians;
- Improved segregated footpath and cycle track between the River Deben and B1116 roundabout; and
- Gateway features on the approaches to Wickham Market with the aim of reducing vehicle speeds, delivering improved safety and comfort for pedestrians and cyclists.
- The package of measures would also see a reconfiguration of kerbside parking along the High Street and the installation of build-outs to improve safety at a number of accesses which currently have poor visibility.

12.6.13 The measures would reduce vehicle speeds and help create a safer environment for pedestrians and cyclists travelling along Wickham Market

High Street. The proposed public realm improvements would also help make the space more attractive and may help encourage residents, visitors and workers to travel on foot and by bicycle when accessing local services and amenities.

13 MANAGEMENT PLANS

13.1 Current status

13.1.1 Since the Sizewell C DCO Application was submitted in May 2020, SZC Co. has continued to engage with Suffolk County Council, Highways England and Suffolk Constabulary to progress the management plans described in **Chapter 13** of the **Transport Assessment** (Doc Ref. 8.5(A) [AS-017]. Three draft management plans were included in the Application, and these have formed the basis of consultation with stakeholders to date. The three plans are:

- **Traffic Incident Management Plan** (TIMP) (Doc Ref. 8.6) [APP-607]
- **Construction Traffic Management Plan** (CTMP) (Doc Ref. 8.7) [APP-608]
- **Construction Worker Travel Plan** (CWTP) (Doc Ref. 8.8) [APP-609]

13.1.2 This work with stakeholders continues with the aim of the final version of the management plans being appended to the Section 106 Agreement and the implementation of the approved management plans will be secured through an obligation in that agreement as set out in the draft **Section 106 Heads of Terms** appended to the **Planning Statement** (Doc Ref. 8.4) and the **Update on Section 106 Agreement** (**Appendix 8.4J** of **Planning Statement**) [AS-012].

13.2 Construction Traffic Management Plan

13.2.1 As part of the refinement of the **CTMP**, work has progressed on the management of Abnormal Indivisible Loads to be delivered to the main development site, including but not limited to:

- Quantifying the number and size of AILs for both contractor equipment (prefabricated buildings, excavators, cranes and the like) and

permanent power station equipment. This exercise has been based on information collected at Hinkley Point C over the last four years of construction activity and their forecasted AILs;

- Clarifying how AIL movements would use the proposed highway infrastructure such as the main site entrance roundabout, Sizewell link road, Yoxford roundabout and two village bypass en route to and from Sizewell C; and

- Define police and self-escort requirements for AILs based on expected vehicle width, weight and length, informed by specialist advice from a haulage contractor and input from Suffolk Constabulary.

13.2.2 In addition to the further work on AILs, work has progressed on other aspects of the **CTMP**, including:

- the specification and characteristics of a global positioning based system (GPS), linked to the Delivery Management System (DMS), that would enable SZC Co. to monitor adherence of the heavy goods vehicle (HGV) routes as well as monitor HGV volumes against the caps set out in the **draft CTMP** (Doc Ref. 8.7) [APP-608];

- the role and remit of the stakeholders in the Community Safety Liaison and Transport Review Groups (TRG); and

- Driver training requirements, inductions, use of the freight management facility and HGV vehicle specifications for those vehicles accessing the main development site.

13.2.3 Since the Application in May 2020, SZC Co. has carried out further refinement of the construction materials estimates and has updated the Material Management Strategy (**Appendix 2.2.C** of the **Environmental Statement Addendum** (Doc Ref. 6.14)) which provides refined construction materials forecasts. Based on the updated strategy and to respond to feedback from stakeholders that sustainable modes must be optimised, SZC Co. have considered a range of options for the delivery of materials to the main development site as described in the updated **Freight Management Strategy** (Doc Ref. 8.18). SZC Co. propose two changes to the Application which comprise:

- operating four trains per day, five days a week with the resilience of being able to operate on a sixth day if necessary (Change 1); and

- enhancement of the permanent beach landing facility (BLF) a second, temporary BLF for bulk material movements assumed to be operating at 70% of its campaign capacity (Change 2).

13.2.4 These changes form part of ongoing discussions with stakeholders, and if taken forward could lead to a reduction in the HGV caps set out in the **draft CTMP** (Doc Ref. 8.7) [APP-608].

13.3 Construction Worker Travel Plan

13.3.1 The **draft CWTP** (Doc Ref. 8.8) [APP-609] set out the management of the movement of construction workers to/from the main development during during the construction phase.

13.3.2 Work in ongoing to refine and agree the CWTP with the relevant stakeholders, which includes refinement to the direct bus strategy, further details on the management of fly parking and the proposed parking permit system.

13.4 Traffic Incident Management Plan

13.4.1 The **draft TIMP** (Doc Ref. 8.6) [APP-607] set out the management of the Sizewell C construction traffic during an event or incident occurring on either the HGV or park and ride bus routes to the main development site. It would help minimise potential impacts of traffic associated with Sizewell C construction on response times and delivery of emergency services in the event of an incident.

13.4.2 Work in ongoing to refine and agree the TIMP with the relevant stakeholders, which includes a scenario matrix of potential incidents that may occur, such as Orwell bridge closure, and the protocols to be implemented in the event of the potential incidents.

14 SUMMARY AND CONCLUSIONS

14.1 Introduction

14.1.1 The **Executive Summary** and **Chapter 14** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], submitted with the DCO Application (May 2020) summarised the proposed transport strategy and assessed the impact of Sizewell C development proposals against national policy. The assessment set out in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] is not materially changed by the additional information provided within this **Transport Assessment Addendum** (Doc Ref. 8.5Ad).

14.1.2 This chapter of the Addendum does not seek to reiterate those conclusions, but instead updates the transport assessment conclusions where required, based on the additional information provided within this Addendum.

14.1.3 This chapter also summarises any changes in the assessment of transport impacts that would arise as a result of the proposed changes to the Application. Proposed changes are set out in the **Environmental Statement Addendum** (Doc Ref. 6.14) and summarised in **Chapters 4** and **5** of this Addendum.

14.2 Summary of additional information

14.2.1 Since the submission of the Application, engagement on transport matters has continued with the stakeholders, including Suffolk County Council (SCC), East Suffolk Council (ESC), Highways England and the emergency services. Based on this further engagement there have been refinements to such matters as the strategic and detailed traffic modelling and the mitigation associated with S106 funding contributions.

14.2.2 This Addendum has documented the Additional Information relevant to the assessment of transport impacts, and a summary is provided below in this section.

1. Direct bus strategy

14.2.3 **Chapter 7** and **Appendix 7D** describe a refinement of assessment assumptions for bus services, which includes details of the direct bus services which would be provided exclusively for the movement of project staff.

14.2.4 Additional assessment work has been undertaken since the Application to determine the potential likely demand for the direct bus and rail services during 2023 early years and 2028 peak construction. The refined assessment, based on the gravity model, has concluded that during peak construction:

- there is likely to be more demand for direct buses from Ipswich than assumed in the Application;
- there is unlikely to be a demand for the Leiston direct bus to route via Knodishall; and
- there is unlikely to be a demand for workers to use rail to access the main development site.

14.2.5 The refined assessment has also concluded that during the Early Years, workers living in Leiston would be required to get a bus, walk or cycle to work at the main development site and would not be allocated a parking permit for the main development site.

14.2.6 The further assessment resulted in a refinement of the bus strategy, which includes greater detail on the potential routing and bus stop locations for direct buses.

14.2.7 The refined bus assumptions are described in **Appendix 7D** of this Addendum, and reflected in the refined strategic highway modelling described in **Chapter 8**.

b) Strategic traffic modelling

14.2.8 Since the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] was prepared for the DCO Application, SZC Co. has continued consultation with stakeholders in relation to traffic modelling. A number of refinements to model inputs and assumptions were agreed with stakeholders as set out in **Chapter 7** of this Addendum, however the strategic highway assignment modelling approach as set out in **Chapter 6** and **Plate 6.2** of the **Transport Assessment** (Doc Ref. 8.5) [AS-017] has not changed in a material way.

14.2.9 As a result of the new model inputs and assumptions, SZC Co. developed refined strategic transport models and has produced an updated set of traffic flow forecasts for the Early Years (2023), Peak Construction (2028)

and Operational Year (2034) scenarios. The revised model forecasts are described in **Chapter 8** of this Addendum.

14.2.10 Compared with the daily and peak hour traffic flows reported in **Table 8.5** and **Table 8.6** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], for the Early Years (2023) scenario there is no material change at the majority of locations. The refined models forecast a marginally higher flow on the A12 between Woodbridge and Farnham due to model enhancements made along the B1438 through Woodbridge.

14.2.11 Compared with the daily and peak hour traffic flows reported in **Table 8.7** and **Table 8.8** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] the refined models report a marginal increase in project traffic on the A12 north of the northern park and ride site at Darsham, due to bus strategy refinements. A marginal increase in project traffic is also forecast on the A12 north of Wickham Market and a reduction in project traffic south of this location, as a result of the proposed additional Woodbridge bus service and an increased number of workers using direct buses from Ipswich or Woodbridge.

14.2.12 Only model coding refinements were applied in the 2034 operational phase scenario; there were no changes to the project traffic inputs. Consequently, traffic flows around the A12 at Woodbridge in the 2034 reference case are slightly different in the refined model forecasts, but overall there was no material change from traffic flows reported in **Table 8.9** and **Table 8.10** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

14.2.13 The refined strategic traffic flow forecasts also informed the environmental assessments documented in the **ES Addendum** (Doc Ref. 6.14).

14.2.14 The journey time forecasts from the refined strategic highway models vary marginally from the journey times reported in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] principally around Woodbridge, where model coding enhancements were applied in the refined models.

14.2.15 In the Early Years (2023) scenario northbound journey times in the 08:00-09:00 peak hour increased marginally, but are no more than 3% (increase over the reference case) over the length of the routes. A variance considered to be within daily variation of journey times along the route.

14.2.16 In the Peak Construction (2028) scenario the project impacts are marginally increased on the A12 northbound in the 08:00-09:00 hour, and

southbound in the 17:00-18:00 hour. However the relative impacts compared to the reference case are still less than 5% over the length of the routes. A journey time increase of around one minute was forecast on the A12 around Woodbridge in the 17:00-18:00 hour, which was slightly higher than was reported in **Table 8.14** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

14.2.17 The refined model forecast operational phase (2034) journey times are not materially different to those reported in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

14.2.18 To inform a more detailed assessment of journey times effects of the project, SZC Co. agreed with Suffolk County Council to undertake micro-simulation traffic modelling (VISSIM) of the A12 between Seven Hills interchange and Melton. The VISSIM modelling assessment is reported in **Chapter 9** of this Addendum.

14.2.19 The VISSIM modelling study forecasts that the impact of Sizewell C traffic on A12 average journey times would be no more than 18 seconds in the Early Years (2023). Journey time were forecast to increase by up to 37 seconds on a typical day during the Peak Construction (2028) period, and up to 62 seconds on the busiest day during Peak Construction over a 14km route.

c) Junction modelling

14.2.20 The updated traffic flow forecasts from the refined strategic highway model were coded into a refined set of local junction models. Further refinements were also applied to the detailed traffic models following further engagement with Suffolk County Council and their appointed technical consultants. The model changes and updated results are described in **Chapter 9** of this Addendum.

14.2.21 The refined junction modelling results showed that of the 53 junctions that were assessed, 18 were identified as being likely to experience an impact as a result of Sizewell C traffic flows. This is broadly consistent with the conclusion of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] with the exception of the following junctions, which were not previously predicted to experience any impact:

1. A12 / B1122, Yoxford

14.2.22 This junction was assessed using the Yoxford VISSIM model which was updated using the refined forecast flows from the strategic highway model. The VISSIM model predicted that queues would be slightly longer at the t-junction in the 2023 Early Years scenario with Sizewell C traffic.

14.2.23 SZC Co. propose to upgrade this junction to a priority roundabout before peak construction traffic occurs. Proposals are shown in the **Yoxford Roundabout and Other Highway Improvements Plans** (Doc Ref. 2.9) [APP-040 and APP-041] and described in **Chapter 5** of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017]. This upgrade improves road safety at this location, and provides capacity benefits to traffic on the B1122 approach. The model predicts that the roundabout will operate within capacity in Peak Construction (2028) with short queues on the A12 and B1122 approaches.

ii. A12 / New Road / Woodbridge Road, Boulge

14.2.24 The forecast flows from the refined strategic highway model at this junction are lower than the flows assessed in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], however model coding changes made in response to Suffolk County Council technical review have resulted in a larger forecast impact at this junction than reported in the Application.

14.2.25 The junction is forecast to operate within capacity during most peaks and scenarios, however the model forecasts that drivers would experience delays on the minor arms at certain times. The junction currently experiences delays on both minor arms that are predicted to become worse over time with increasing A12 flows without Sizewell C. The addition of Sizewell C flows is forecast to increase minor arm delays further.

14.2.26 SZC Co. propose that junction performance is monitored during the construction of Sizewell C via the Transport Review Group (TRG), and impacts managed in alignment with the construction phase management plans. The Section 106 Heads of Terms in **Appendix 8.4J** of the **Planning Statement** (Doc Ref. 8.4) [APP-600] sets out a transport contingency fund that would be available to the TRG to address any identified issues, should they arise.

iii. A12 / B1125 Angel Lane, Blythburgh

14.2.27 Forecast traffic flows have changed very little at this junction, when compared with the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] and the junction is forecast to operate within capacity in all scenarios. However refinement of driver sight distance parameters in the model has resulted in a slight increase in the forecast delay on Angel Lane due to Sizewell C traffic movements on the A12 (i.e. 19 seconds in 17:00-18:00 in early years).

d) A12 VISSIM Modelling

14.2.28 SZC Co. has undertaken detailed traffic micro-simulation modelling (VISSIM) of the A12 corridor between the A14 Seven Hills interchange and Melton (approx. 14km length). That modelling, which was not available for the DCO Application has informed a detailed assessment of traffic implications (e.g. journey times) of the proposed development on the A12 corridor.

14.2.29 Based on the VISSIM assessment, no material impact is predicted and therefore no mitigation in the form of highway improvements is considered to be required for the A12 corridor between Seven Hills and Melton. SZC Co. will implement a **Construction Traffic Management Plan** (Doc. Ref. 8.7) [APP-608] and **Construction Worker Travel Plan** (Doc. Ref. 8.8) [APP-609] to monitor and manage the impacts of Sizewell C freight traffic and workforce movements during the construction of Sizewell C. A transport contingency fund will be made available to the TRG to be used if necessary to implement any further mitigation measures and remedial actions.

e) Road safety

14.2.30 **Section 10.2** of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] discusses the road safety aspects of the proposed development and road safety proposals. **Chapter 2** of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] described the existing road safety record across the study area. Further analysis has been undertaken since the DCO Application, which provides a forecast of the effect of Sizewell C traffic on road safety. That analysis is reported in **Chapter 10** of this Addendum.

14.2.31 To improve road safety across the network and mitigiate impacts of Sizewell C traffic, SZC Co. propose to implement a number of highway

improvements which are described in **Chapter 5** of the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017].

14.2.32 The **Transport Assessment** (Doc Ref 8.5(A)) [AS-017] also states that, in addition SZC Co. will provide a contribution to fund road safety improvements on the B1078 corridor, which are also shown in the draft **Section 106 Heads of Terms**, **Appendix 8.4J** [APP-600]. SZC Co. has now undertaken further investigation into improvements that could be brought forward with that funding. The package of improvements has been discussed with Suffolk County Council, who are broadly supportive.

14.2.33 Road safety improvements are being developed along the full length of the 22km corridor from the A140 to the B1116 at Wickham Market in consultation with Suffolk County Council. Improvements include changes to speed limits, signage, resurfacing and high friction surfacing, vehicle restraint barriers and gateway features and are intended to mitigate any potential increase in collisions on the B1078 corridor due to Sizewell C. The package includes improvements around Suffolk Rural College, described in paragraphs 10.3.27 – 35 in the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017], and the improvements at the A140 / B1078 junction described in paragraphs 10.3.36 – 43 in the **Transport Assessment** (Doc Ref 8.5(A)) [AS-017].

f) Walking and Cycling

14.2.34 As part of the Application SZC Co. proposed funding for walk and cycle improvements to be secured through obligations in a S106 agreement, provided in the draft **Section 106 Heads of Terms** (**Appendix 8.4J**) [APP-600]. The improvments included a Leiston Transport Contribution to fund pedestrian, cycle, highway and public realm improvements in Leiston and a Wickham Market Transport Contribution to fund pedestrian, cycle, highway and public realm improvements in Wickham Market.

14.2.35 SZC Co. has been working in partnership with Leiston Town Council and Wickham Market Parish Council, as well as Suffolk County Council and East Suffolk Council to develop firm proposals for improvements in both locations. **Section 12.5** of this Addendum details the further development of these schemes.

14.2.36 SZC Co. is seeking to work with local authorities to progress these plans through local public consultation early in 2021, and to develop costed designs which can be appended to the Section 106 agreement.

14.3 Summary of assessment of proposed changes

14.3.1 The proposed changes to the proposed development are described in **Volume 2** of the **ES Addendum** (Doc Ref. 6.14) which provides an update to the description of development from the **Environmental Statement** (Doc Ref. 6.3) [APP-178] submitted with the Application.

14.3.2 The changes which are relevant from a transport assessment perspective are:

- The potential to operate four trains per day, five days a week with the resilience of being able to operate on a sixth day if necessary (Change 1);
- enhancement of the permanent beach landing facility (BLF) and development of a second, temporary BLF for bulk material movements assumed to be operating at 70% of its campaign capacity (Change 2);
- A new bridleway link between Aldhurst Farm and Kenton Hills (Change 15); and
- Extension of the Order Limits to provide for additional fen meadow habitat at Pakenham as mitigation for fen meadow loss (Change 11).

14.3.3 The effect of these proposed changes on the transport assessment are described within this Addendum. This chapter summarises the effect of those changes.

b) Transport strategy

1. SZC Co.'s preferred option for the delivery of construction materials to the main development site is to operate four trains per day (Change 1), and enhance the permanent BLF and construct a new temporary BLF for the delivery of bulk materials via marine vessels (Change 2). These proposed changes would reduce the number of HGVs on the road network, compared to the integrated freight management strategy proposed in the Application. The assumed Sizewell C HGV demand at peak construction as set out in the Application is:
    - 650 daily two-way HGVs on a typical day; and

- 1,000 daily two-way HGVs on the busiest day.

2. Should the proposed changes to four trains per day, enhancement to the existing BLF and new BLF for bulk materials be accepted, the HGV demand would reduce to:

    - 500 daily two-way HGVs on a typical day; and
    - 700 daily two-way HGVs on the busiest day.

c) Strategic traffic modelling

14.3.4 The changes to Sizewell C traffic inputs as a result of the proposed changes are described in **Chapter 7** of this Addendum. The resultant flow changes were assessed through a manual adjustment to the traffic link flows reported in **Table 8.6** and **Table 8.7** of this Addendum, to reflect the reduced Sizewell C HGV volumes across the network.

14.3.5 The reduction in HGVs would be expected to have an overall beneficial effect on journey times, although the benefit is not quantified as strategic traffic modelling runs were not undertaken for the proposed change scenario.

14.3.6 Compared with the proposed development flows presented in **Table 8.6** and **Table 8.7** of this Addendum, there would be reductions in HGVs on the B1122 east of Yoxford, the Sizewell link road, the A12 and A14.

14.3.7 To the north of the B1122 the reduction in daily flow would be around 23-45 vehicles on the typical and busiest days respectively. South of the Sizewell link road the reduction in flow would be around 128-255 vehicles on the typical and busiest days respectively. On the Sizewell link road there would be a reduction of around 150-300 vehicles on the typical and busiest days respectively.

14.3.8 The reduction in overall traffic flows across the day, and during the peak hours, would be relatively small in percentage terms. However there would be other environmental benefits which are described in **Volume 1** of the **ES Addendum** (Doc Ref. 6.14).

d) A12 journey times

14.3.9 The A12 micro-simulation (VISSIM) modelling study tested the benefits of the reduction in HGVs that would result from operating four trains per day

(Change 1), enhancing the BLF and building a new temporary BLF for bulk materials (Change 2). The modelling results forecast that journey times on the A12 would increase by up to 32 seconds on a typical day during Peak Construction and up to 42 seconds on the busiest day during Peak Construction. These results indicate a small but noticeable improvement over the integrated freight strategy results (i.e. 37 seconds and 62 seconds for typical day and busiest day respectively). The modelling study and results are described in **Chapter 9** of this Addendum.

e) Rail strategy

14.3.10 To maximise the volume of material moved by rail, SZC Co. is investigating a number of opportunities to operate more trains than were proposed in the integrated freight management strategy presented in **Chapter 11** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017].

14.3.11 The integrated freight management strategy proposed three return trains per day (six movements). SZC Co.'s preferred option is now to operate four return trains (eight movements) per day with the ability to run trains six days per week for resilience.

14.3.12 SZC Co. continue to work with stakeholders to explore options to further increase rail capacity for the delivery of construction materials to the main development site. Another option still being explored include the operation of five return trains (ten movements) per day.

14.3.13 Were four or more train per day operation to be progressed, there may be a need for Network Rail to undertake work to level crossings on the East Suffolk line to mitigate risk to level crossing users.

f) Walking and Cycling

14.3.14 **Chapter 12** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017] described the walking and cycling strategy for the Sizewell C Project. Since that assessment was prepared, SZC Co. has continued consultation with stakeholders, and adopted a number of enhancements to the walking and cycling strategy. **Chapter 12** of this Addendum describes those amendments.

14.3.15 Changes to the proposals include:

- Diversion of rights of way in the vicinity of the two village bypass (Footpath E243/011/0 at Walk Farm Barn), and upgrade of Footpath-243/003/0 and Footpath E-243/011/0 to bridleway status.
- Providing a new bridleway link to Kenton Hills (Change 15) to connect the new north-south (off-road) bridleway, cycleway and footway that runs along the south side of Lover's Lane to the east of Kenton Hills with Bridleway 19 (Footpath E-363/019/0) immediately to the north of the Lover's Lane / Kenton Hills car park access junction.
- Diversion of bridleway E-363/013/0 along the new north-south (off-road) bridleway, cyclepath and footpath.
- Hawthorn Road is now proposed further east of the alignment shown in the Application, where it meets the Sizewell link road. The revised alignment requires a diversion to Footpath E-396/020/0 in this location.
- An additional walking and cycling route on the north side of Sizewell Link Road is to be provided in the vicinity of Moat Road.

14.3.16 The proposed changes to the public rights of way within the vicinity of the main development and associated development sites are shown on the **Access and Rights of Way Plans** (Doc Ref 2.4(A)) [AS-013].

14.3.17 Since the DCO Application, SZC Co. has proposed a new fen meadow compensation area at Pakenham. A number of public rights of way cross the compensation area. None of these footpaths will be closed or diverted (either temporarily or permanently) during construction or operation of the proposed development.

14.4 Conclusion

14.4.1 This **Transport Assessment Addendum** (Doc Ref. 8.5(A)Ad) provides additional information to support the Sizewell C development proposed in the DCO Application (May 2020). It also provides a supplementary assessment of the transport effects of the proposed changes to the development.

14.4.2 SZC Co. conclude that the additional information provided in this Addendum does not materially change the conclusions set out in **Chapter 14** of the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017], and that the

application proposals continue to comply with all relevant transport policies.

14.4.3 Furthermore, SZC Co. conclude from the analysis presented in this Addendum, that the proposed changes to the development proposals will have a beneficial effect on the transport impacts of the project as described in the **Transport Assessment** (Doc Ref. 8.5(A)) [AS-017]. Should the proposed changes be taken forward, the application proposals would continue to comply with all relevant transport policies.

15 REFERENCES

1. East Suffolk Council, Suffolk Coastal Local Plan (Suffolk, 2020).