SUNNICA ENERGY FARM

EN010106

8.42 Technical Note: Transport and Access

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

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Sunnica Energy Farm

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Table of contents

Table of Figures

Table of Tables

1 Introduction

1.1.1 This Technical Note has been prepared following consultation with Suffolk County Council and Cambridge County Council highway authorities (referred to as the Local Highway Authorities (LHAs)) between April and September 2022 via video conferencing meetings and email correspondence. In total four video conference meetings were held with the Local Highway Authorities on 26th April, 13th July, 25th July and 4th October. In addition, this Technical Note has also been produced to assist with the Applicant's responses to the Examining Authority's first written questions issued on 4th October 4 2022 and has been submitted for Deadline 2 on 11 November 2022

1.1.2 A further meeting is proposed with the LHAs to discuss the site access plans in further detail. In addition, to the consultation with the LHAs, a video conference meeting and email correspondence has been undertaken with National Highways. A further video conference meeting and email correspondence has also been undertaken with East of England Ambulance Service (EEAST). Consultation with National Highways and EEAST are not summarised within this Technical Note as it is understood that there are no substantive matters outstanding requiring a technical response.

1.1.3 The purpose of this Technical Note is to outline the main items raised by the LHAs from the DCO application regarding Transport and Access and provide responses with a view to resolving the matters raised and to work towards a Statement of Common Ground (SoCG). In addition, the first tranche of questions has been received from the Examining Authority. For the most part, it has been possible to answer comprehensively the questions posed by the Examining Authority within a response table. Where further information is required, it has been provided within this Technical Note, and referenced appropriately in the response to the Examining Authority. This Technical Note provides additional clarification and further evidence on the Transport and Access content of the Environmental Statement (ES) [APP-045]. It does not change the conclusions of the ES itself, nor result in a requirement for an update to the ES or an Addendum. Where relevant, information presented within the ES itself is signposted for ease of reference.

1.1.4 The content of this Technical Note covers the following topics, corresponding with the matters raised, with each discussed in-turn below:

2. Link sensitivity used within the ES assessment;
3. Construction staff car occupancy assumptions, sensitivity test and 30km study area;
4. Additional traffic survey data analysis including Saturday data, ES assessment, comparison of 2019 and 2022 WebTRIS data and minor update to Transport Assessment figures;
5. Daily HGV movement profile;
6. Mini-bus movements;
7. Construction staff car parks, ‘fly’ parking and visitors;
8. Clarification on the forecast Sunnica East and Sunnica West trip generation;

9. ‘Boomerang’ movement at the A14 J37;
10. PRoWs closures and summary of survey data;
11. Site Accesses ;
12. Highway Works;
13. Non-Material Change Report;
14. Framework Construction Traffic Management Plan and Travel Plan; and
15. Side Agreement for highway matters.

2 Link Sensitivity Plan

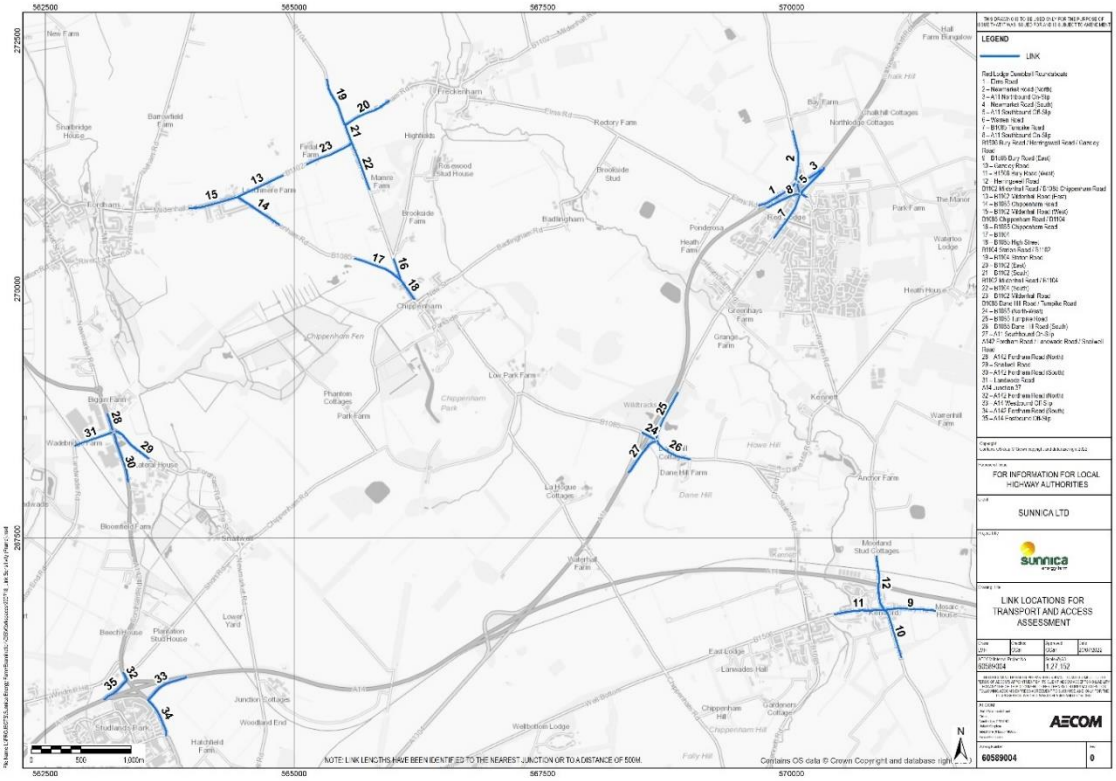
2.1.1 Clarification was sought by the LHAs during the 26th April video conference meeting in terms of the provision of a plan showing the locations of the links used within the Transport and Access Chapter of the ES [APP-045] to provide a visual representation of the links included within the assessment. Subsequently, the link sensitivity figure had been discussed during the 13th July and 25th July video conferencing meetings. A summary of the link sensitivity plan is provided in Figure 2-1 below and in Appendix A at a larger scale.

2.1.2 The representation of the links used within the assessment is provided in Figure 2-1 and Appendix A. The links have been represented on the figure as a distance of 200m or up to the next junction. Characteristics on both sides of the carriageway along the links have been used within the ES assessment beyond the 200m. However, the distance has been chosen for clarity of representation purposes on Figure 2-1, and to denote the location from where the traffic data for the purpose of the assessment has been taken.

2.1.3 Figure 2-1 provides further clarification of the links used within the Transport and Access assessment in addition to Plate 13-1: Local Traffic Data Locations and Plate 2: WebTRIS Data Locations provided in the Transport and Access Chapter of the ES [APP-045].

2.1.4 It is noted that Figure 2-1 does not include the locations where additional traffic surveys were undertaken in 2022. These include Elms Road, A11/Elms Road T-Junction, La Hogue Road and Freckenham Road. The additional traffic surveys are discussed later on in section 4 of this Technical Note.

Figure 2-1: Link Sensitivity Locations



2.1.5 During the 26th April video conference meeting, link sensitivity was discussed and the Applicant requested that the LHAs review the link sensitivities set out in the ES and provide any comments. This request was repeated in the two July video conference meetings with the LHAs. Both LHAs confirmed their TA team are reviewing the link sensitivities, which was confirmed in the 4th October video conferencing meeting however no date was advised as to when this would be provided. The Applicant is happy to discuss any concerns that the LHAs may have regarding the classification of sensitivity and are awaiting clarification from the LHAs regarding links which may be required to be discussed further.

3 Construction Staff Assumptions

Overview

3.1.1 The LHAs raised concerns regarding the average construction staff vehicle occupancy assumptions used within the Transport and Access chapter of the ES [APP-045]. This has been further discussed during the 26th April, 13th July and 25th July video conference meetings with the LHAs.

3.1.2 Within this section further information and analysis is provided regarding the average vehicle occupancy for construction staff and the average number of construction working days per month. Both of these assumptions are used in forecasting the daily peak number of construction staff and construction staff vehicles.

3.1.3 This section also provides a review of average vehicle occupancy for construction staff available on the Planning Inspectorate website[1] for other Nationally Significant Infrastructure Projects (NSIPs) which have been granted development consent (as development consent orders (DCOs)) under the Planning Act 2008 regime. In addition, a sensitivity test based on a lower average number of construction staff per vehicle than the one used within the Sunnica assessment had been undertaken with the results presented below.

A Review of Construction Staff Vehicle Occupancy

3.1.4 A review has been undertaken on the staff vehicle occupancy assumptions used for other DCO projects to determine if the current assumption of 1.5 staff per vehicle, which represents a 67% car driver mode share, is appropriate for the ES assessment. The primary concern from the LHAs was regarding the use of this factor was the reliability of using the Sizewell C (nuclear power station) project located within Suffolk, which itself was based on monitoring data from Hinkley C (nuclear power station), as a comparator, on the basis that the nature of construction of nuclear is different to solar.

3.1.5 The review considers a range of energy projects in order to gather a large sample size focuses on wind, solar and power stations examples in analysis. This included four wind farm examples and three solar farm examples as well as three power station examples because the Applicant considers these appropriate construction schemes to use to provide a range of broadly comparable examples. The following information has been presented to the LHAs in the July 2022 video conference meeting. Additional DCO projects, to the ten wind, solar and power station examples discussed in Table 3-1, were reviewed using information on the PINS website but they did not provide relevant information regarding average vehicle occupancy for construction staff or construction staff mode share information, and are therefore not shown in the table.

3.1.6 Table 3-1 provides a summary of the construction staff average vehicle occupancy and staff car driver mode share used for a number of DCO

[1] https://infrastructure.planninginspectorate.gov.uk/

projects, all of which have been granted consent or have not yet been determined.

Table 3-1: Construction Staff Average Vehicle Occupancy for Other Selected DCO Projects

Project Type	Project	Status	Year	Summary of Construction Staff Average Vehicle Occupancy / Construction Staff Mode Share
Windfarm	East Anglia ONE North Offshore Windfarm Ref 1-1	Granted	2019	1.5 average vehicle occupancy.
Windfarm	East Anglia TWO Offshore Windfarm Ref 1-2	Granted	2019	1.5 average vehicle occupancy.
Windfarm	East Anglia THREE Offshore Wind Farm Ref 1-3	Granted	2015	2.5 average vehicle occupancy. (Suffolk CC has advised that this was changed to 1.5 in submissions under requirements)
Windfarm	Hornsea Project Three Offshore Wind Farm Ref 1-4	Granted	2018	75% car driver mode share and 25% car share, equating to 1.33 average vehicle occupancy.
Power Station	Meaford Energy Centre Power Station (Gas) Ref 1-5	Granted	2016	2.0 average vehicle occupancy.
Power Station	West Burton C Power Station Ref 1-6	Granted	2019	80% car driver mode share. 1.5 average vehicle occupancy. 53% car driver, 27% car passenger and 20% mini-bus.
Power Station	Keadby 3 Carbon Capture Power Station Ref 1-7	Ongoing	2021	80% car driver mode share. 2.0 average vehicle occupancy. 53% car drive mode share, 27% car passenger and 20% mini-bus.
Solar	Longfield Solar Farm (up to 500MW) Ref 1-8	Ongoing	2022	45% local staff and 55% non-local staff. 95% car driver with 1.5 vehicle occupancy for local staff. 100% mini-bus for non-local staff.
Solar	Cleve Hill Solar Farm (up to 350MW) Ref 1-9	Granted	2022	No quantified assessment, ES states: *'Expected that staff would be transported to the site in multioccupancy vehicles. These vehicles, typically mini-buses, would pick up/drop off from varying preorganised locations close to the temporary accommodation and transport them to the development site. The pickup/drop off point locations will be at accessible locations for all staff. It is anticipated that these locations would be close to key local locations, town centres, hotels, residential areas or public transport interchanges. A large proportion of the construction staff will stay in accommodation local to the site and travel to the site together by mini-bus.*
Solar	Little Crow Solar Park (150MW)	Granted	2022	No quantified assessment, ES states:

Project Type	Project	Status	Year	Summary of Construction Staff Average Vehicle Occupancy / Construction Staff Mode Share
	Ref 1-10			*It is envisaged that a number of the non-local workforce will stay at local accommodation and be transported to the site by mini-buses to minimise the impact on the strategic and local highway network'*

3.1.7 Table 3-1 shows that a 1.5 average staff vehicle occupancy has been used for a variety of granted (or ongoing)DCO schemes and several schemes assumed a higher average car occupancy The majority of schemes use factors of 1.5 average vehicle occupancy or greater, including three wind projects and one solar project.

3.1.8 It is acknowledged that the majority of the schemes set out above are not solar farms, however, there are sufficient solar and wind projects to draw conclusions based both on the full suite of examples, and it is considered those in Table 3-1 are directly comparable examples.

3.1.9 It is noted that within the East Anglia One North Offshore Windfarm ES (Ref 1-1), it is stated that '*it is typical for construction projects that employees will travel to work together and in contractor provided vehicles. The established industry exemplar of Heathrow Terminal 5 (BAA 2003, Terminal 5 Construction Workers Public Transport Strategy 2003 / 04) established that a car-share ratio of 3 employees per vehicle was achievable*. However, during the development of the East Anglia THREE project, SCC expressed concerns regarding the suitability of adopting an employee to vehicle ratio close to the industry exemplar and required a sensitivity test utilising a value of 1.5 employees per vehicle. This employee to vehicle ratio is therefore adopted for the purposes of screening impacts for the proposed East Anglia TWO project. Therefore, the construction staff to vehicle ratio applied on Sunnica is consistent with the three East Anglia Offshore Wind Farms projects.

3.1.10 Many of the schemes set out above reference the use of mini buses to transport staff to the sites to reduce the number of vehicles travelling to/from the sites. It is anticipated that during the construction of the Sunnica Energy Farm that mini-buses would also be used to reduce the number of vehicles travelling to/from the site as set out in section 7 of the Framework Construction Traffic Management Plan and Travel Plan [AS-300, AS-301]. However, the assessment does not rely on the use of mini-buses to achieve the car driver mode share assessed within the ES.

Construction Staff Vehicle Occupancy Sensitivity Test

3.1.11 The lowest average staff vehicle occupancy set out in Table 3-1 is 1.33 for the Hornsea Project Three Offshore Wind Farm.

3.1.12 Based on the finding outlined above and in Table 3-1, the average vehicle occupancy of 1.5, as assessed in the ES and TA, is considered to be a robust assumption. In order to provide additional confidence to the LHAs, the

Applicant has undertaken a sensitivity test assessing the impact of assuming a 1.3 average staff vehicle occupancy. An average vehicle occupancy of 1.3 is considered to be the lower than a reasonable worst-case scenario, as none of the DCO applications used an occupancy factor as low as this.

3.1.13 Suffolk County Council made a post meeting comment on the 26th April video conferencing meeting minutes that a *'core test should be what is reasonable based on other projects and the projects commitments, and the sensitivity test would be worse than reasonable'.* It is therefore considered that, based on the information provided above, the sensitivity test below is worse-than reasonable and the core assessment undertaken as part of the ES remains a reasonable worse-case scenario.

3.1.14 A summary of the 1.3 and 1.5 average vehicle occupancy for the peak construction months for Sunnica East, Sunnica West and the Scheme is presented in Table 3-2.

Table 3-2: Total Staff Vehicles: 1.3 and 1.5 Average Vehicle Occupancy Summary

Location	1.5 Average Vehicle Occupancy (Total Staff Vehicles)	1.3 Average Vehicle Occupancy (Total Staff Vehicles)	Change	Peak Month(s) of the Construction Period
Sunnica East	562	640	+78	6
Sunnica West	522	598	+76	12
Burwell Substation	37	42	+5	5-7
Cable Corridor	6	6	0	2-7
Scheme Total	937	1074	+137	9

3.1.15 Table 3-3 presents the results of this sensitivity test, in terms of whether the significance of any link would change. This assessment methodology is the same used within the Transport and Access chapter of the ES [APP-045]. The development peak hours are identified as 06:00-07:00 during the AM and 19:00-20:00 during the PM.

Table 3-3: Vehicle Occupancy Sensitivity Test Results (Significance of Effect)[2]

Location	Severance				Fear and Intimidation		Driver Delay			
	AM 0600-0700		PM 1900-2000		AAWT		AM 0600-0700		PM 1900-2000	
	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy
B1102 Mildenhall Road / B1085 Chippenham Road										
B1102 Mildenhall Road East	*	*	*	*	*	*	*	*	*	*
B1085 Chippenham Road	*	*	*	*	*	*	*	*	*	*
B1102 Mildenhall Road West	*	*	*	*	*	*	*	*	*	*
B1085 Chippenham Road / B1085 High Street / B1104										
B1085 Chippenham Road	*	*	*	*	*	*	*	*	*	*
B1104	*	*	Negligible	Negligible	Negligible	Negligible	*	*	Negligible	Negligible
B1085 High Street	*	*	Minor Adverse	Minor Adverse	Minor Adverse	Minor Adverse	*	*	Negligible	Negligible
B1104 Station Road / B1102										

2 *no staff vehicles forecast and therefore there is no effect to classify.

Location	Severance				Fear and Intimidation		Driver Delay			
	AM 0600-0700		PM 1900-2000		AAWT		AM 0600-0700		PM 1900-2000	
	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy
B1104 Station Road	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Moderate Adverse	Moderate Adverse	Negligible	Negligible
B1102 East	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
B1102 South	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
B1102 Mildenhall Road / B1104										
B1102	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
B1104	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Moderate Adverse	Moderate Adverse	Negligible	Negligible
B1102 Mildenhall Road West	*	*	*	*	*	*	*	*	*	*

Location	Severance				Fear and Intimidation		Driver Delay			
	AM 0600-0700		PM 1900-2000		AAWT		AM 0600-0700		PM 1900-2000	
	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy
B1506 Bury Road / Herringswell Road / Gazeley Road										
B1506 Bury Road East	Minor Adverse	Minor Adverse	Minor Adverse	Minor Adverse	Negligible	Minor Adverse	Minor Adverse	Moderate Adverse	Minor Adverse	Minor Adverse
Gazeley Road	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
B1506 Bury Road West	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
Herringswell Road North	Negligible	Minor Adverse	Negligible	Minor Adverse	Negligible	Negligible	Minor Adverse	Minor Adverse	Minor Adverse	Minor Adverse
Red Lodge Dumbbell Roundabout (North)										
Elms Road	Minor Adverse	Minor Adverse	Minor Adverse	Minor Adverse	Negligible	Negligible	Minor Adverse	Minor Adverse	Minor Adverse	Minor Adverse
Newmarket Road	*	*	*	*	*	*	*	*	*	*
A11 NB On-Slip Red Lodge	*	*	Negligible	Negligible	Negligible	Negligible	*	*	Negligible	Negligible
Newmarket Road (Internal)	Negligible	Negligible	Minor Adverse	Minor Adverse	Negligible	Negligible	Negligible	Minor Adverse	Minor Adverse	Minor Adverse

Location	Severance				Fear and Intimidation		Driver Delay			
	AM 0600-0700		PM 1900-2000		AAWT		AM 0600-0700		PM 1900-2000	
	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy
Red Lodge Dumbbell Roundabout (South)										
Newmarket Road (Internal)	Negligible	Negligible	Minor Adverse	Minor Adverse	Negligible	Negligible	Minor Adverse	Minor Adverse	Minor Adverse	Minor Adverse
A11 SB Off-Slip (Red Lodge)	Minor Adverse	Minor Adverse	*	*	Negligible	Negligible	Moderate Adverse	Moderate Adverse	*	*
Warren Road	Minor Adverse	Minor Adverse	Negligible	Minor Adverse	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
B1085 Turnpike Road	Minor Adverse	Minor Adverse	*	*	Negligible	Negligible	Moderate Adverse	Moderate Adverse	*	*
A11 SB On-Slip (Red Lodge)	*	*	Minor Adverse	Minor Adverse	Negligible	Negligible	*	*	Minor Adverse	Minor Adverse
Dane Hill Road / Turnpike Road Roundabout										
B1085 (North)	Negligible	Negligible	Minor Adverse	Minor Adverse	Negligible	Negligible	Moderate Adverse	Moderate Adverse	Moderate Adverse	Moderate Adverse
B1085 Turnpike Road	Negligible	Negligible	*	*	Negligible	Negligible	Negligible	Negligible	*	*

Location	Severance				Fear and Intimidation		Driver Delay			
	AM 0600-0700		PM 1900-2000		AAWT		AM 0600-0700		PM 1900-2000	
	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy	1.5 Occupancy	1.3 Occupancy
B1085 Dane Hill Road (South)	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor Adverse	Minor Adverse	Minor Adverse
A11 SB On-Slip	*	*	Minor Adverse	Minor Adverse	Negligible	Negligible	*	*	Minor Adverse	Minor Adverse

3.1.16 The analysis above shows that only one link would experience a change in categorisation of effect in the sensitivity test scenario which would result in a change to either moderate or major adverse. This is the B1506 Bury Road East at the junction with Herringswell Road and Gazeley Road, where the Driver Delay impact would change from minor adverse to moderate adverse. The number of vehicles forecast on this link would increase from 144 to 165 in the AM (0600-0700) and PM (1900-2000) construction peaks. In absolute terms, this is a small increase, but it is magnified in percentage terms by being applied to a low baseline. This would also be temporary, occurring for a short amount of time, for one month, at the peak of the construction phase only. This is therefore not considered a significant adverse effect.

3.1.17 The use of a construction parameter of 1.5 vehicle occupancy has been demonstrated to be robust, and therefore the assessment within the ES is valid. Furthermore, the sensitivity test presented for a 1.3 vehicle occupancy, an overly pessimistic assumption, shows that it would not result in additional significant effects. This demonstrates that there is significant confidence in the conclusions drawn on construction traffic impact.

Construction Staff Working Days Assumption

3.1.18 For the purposes of the Transport and Access ES assessment [APP-045], it was assumed the construction working hours were Monday to Friday 07:00-19:00 in order to provide a robust forecast of the construction staff trip generation. However, as part of the Framework Construction Environmental Management Plan (CEMP) [AS-302], the construction working hours are outlined as Monday to Saturday 07:00-19:00. This can be found in section 2.3 of the CEMP. Therefore, the daily construction staff trip generation has been identified on an average of 20 working days per month rather than 24 working days per month. As a result, the construction staff and construction staff vehicle trip generation assessed in the Transport and Access chapter of the ES is circa 17% higher based on 20 working days compared to 24 working days. Information has been provided during the 4th October 2022 video conference with the LHAs. Therefore, the construction staff vehicle forecast is considered to be robust and fit for purpose.

Summary of Occupancy/Working Days

3.1.19 A summary of the daily peak number of construction staff is outlined in Table 3-4 based on Monday to Friday (20 working days per month) and Monday to Saturday 24 working days per month), for both the average construction staff vehicle occupancy of 1.3 and 1.5. As per the sensitivity test outlined above, it was concluded that an average construction staff vehicle occupancy of 1.3 based on Monday to Friday (20 working days per month) would not result in a significant adverse effect in terms of the EIA assessment for Transport and Access. Therefore, it is considered the assessment undertaken for the Transport and Access chapter of the ES to be reasonable (Monday-Friday working with an average construction staff vehicle occupancy of 1.5). Notably, the level of traffic which would be generated by Monday to Saturday construction at a 1.3 car occupancy, is lower than the Monday to Friday construction at a 1.5 car occupancy, as assessed in the ES.

Table 3-4: Summary of Peak Construction Staff Comparison

	1.5 Construction Staff Vehicle Occupancy			1.3 Construction Staff Vehicle Occupancy		
	Monday-Friday	Monday-Saturday	Difference	Monday-Friday	Monday-Saturday	Difference
Sunnica East	494	412	-82	565	471	-94
Sunnica West	443	369	-74	509	424	-85
Scheme Total	937	781	-156	1074	895	-179

3.1.20 It is noted that the LHA also raised a question over whether a Saturday assessment scenario should have been assessed, based on whether baseline flows at development peaks may be higher than on a weekday. Additional analysis of the Saturday traffic flows are provided in the next section in this Technical Note.

Construction Staff 30km Study Area

3.1.21 Further information is provided regarding MSOAs in response to examination questions 1.10.72 and 1.10.73. This includes a request for information on what the MSOAs are and what they are used for, as well as a map of the 30km radius used in the analysis, as set out in Figure 3-1.

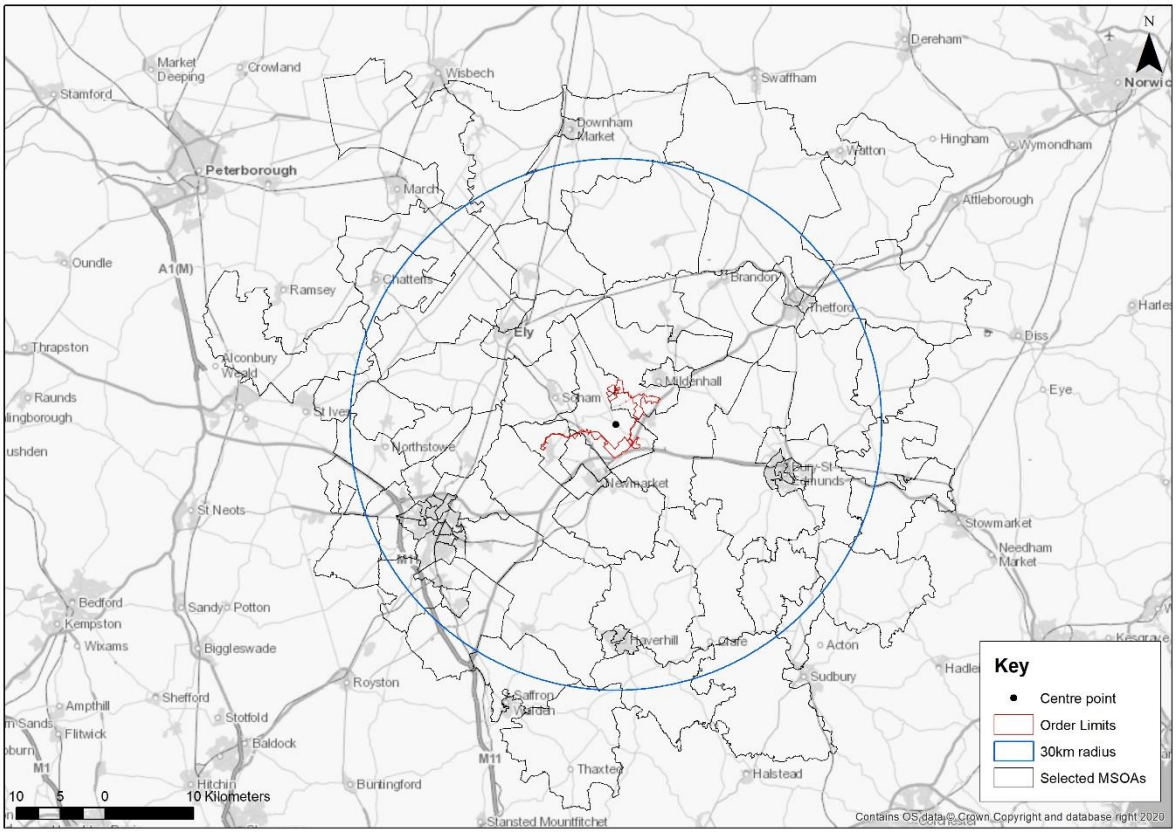
3.1.22 Middle Super Output Areas (MSOA)[3] are geographical zones that are used to report statistics for small areas in England and Wales. MSOAs are used for census data and represent areas that have a population between 5,000 and 15,000 people or have between 2,000 and 6,000 households. The 2011 Census population data was extracted for MSOAs where all or part of the MSOA is within a 30km radius of the Scheme and has been converted into proportions based on the total population within the 30km radius. This MSOA data was used in the forecast of the trip distribution for construction staff.

3.1.23 Further information is provided below regarding the 30km radius used within the Transport Assessment.

3.1.24 The 30km travel distance for staff assumption is broadly in line with the latest UK-wide Construction Industry Training Board (CITB) Construction workforce mobility reporting (2018/19) which finds workers travel a mean distance of 18 miles (circa 29km) to work. The 30km staff travel distance is consistent with the assumptions used for the Socio-economic Assessment in the Chapter 12 of the ES. The centre point taken is in between the two sites and is illustrated on the figure below.

3 https://webarchive.nationalarchives.gov.uk/ukgwa/20220401215420/https://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeography

Figure 3-1: 30km Radius and MSOAs



4 Additional Traffic Survey Analysis

Overview

4.1.1 Within the Transport and Access chapter of the ES [APP-045], it is acknowledged that there are areas where a greater coverage of traffic survey data would increase the confidence, by providing a greater understanding of existing traffic conditions on the local highway network, in the conclusions drawn in the ES.

4.1.2 The areas covered include La Hogue Road for Sunnica West Site A and on Elms Road along the section to the north-west of the A11/Elms Road T-Junction for Sunnica East Site A. There is also no traffic survey data available for Freckenham Road between Freckenham and Worlington for HGVs to/from Sunnica East Site A. No traffic survey data was available to the west of the A142 along Route Connection A (between the A142 and Burwell), however there is a low number of forecast HGVs and staff along this section of the Scheme.

4.1.3 Traffic surveys were carried out between Thursday 7th to Wednesday 13th July 2022 in the form of Automatic Traffic Counts (ATC). This has been reviewed in terms of the conclusions drawn within the ES. Utilising the additional data as part of the assessment has not resulted in any significant environmental effects being identified.

4.1.4 A summary of the additional traffic surveys is provided below.

a. Traffic surveys from 2016-2019 (pre-pandemic) were used to identify baseline traffic flows. This was due to the impact lockdowns had on traffic flows as a result of the Pandemic. Additional traffic survey locations were identified as the following:
   i. La Hogue Road (ATC);
   ii. Elms Road (to the west of the A11 Northbound Off-Slip T-Junction) (ATC);
   iii. A11 Northbound Off-Slip/ Elms Road T-Junction (MCC);
   iv. Freckenham Road (ATC) and
   v. A142 and Burwell - concluded not to be a concern for additional traffic data collection given the low number of staff and as it is unknown when each site access is required to be used by the HGVs during the construction period.

4.1.5 Regarding Freckenham Road, it was agreed with the Local Highway Authority to escort HGVs through the Newmarket Road/ Worlington Road T-Junction. This meant that it was agreed with the LHAs that additional survey data was not required as a measure had already been agreed to mitigate the number of HGVs at this junction. In addition, there is a low number of staff and HGVs forecast on Freckenham Road during construction. It is forecast that there will be approximately 11 daily HGVs on Freckenham Road during the peak of the construction period. The impact of HGVs in this area will be short term and temporary. This is therefore not anticipated to have a significant impact on the local highway network in absolute terms, regardless of percentage increase over the baseline.

4.1.6 The LHAs outlined that they did not possess any relevant data that could be provided. Therefore, email correspondence was sent in June 2022 to the LHAs outlining the proposed additional traffic survey locations. No issues or concerns were raised by either of the LHAs regarding the proposed traffic survey locations.

4.1.7 The Monday to Friday average traffic flows have been calculated from the 2022 traffic survey data and is presented in Table 4-1.

Table 4-1: 2022 Traffic Survey Flows (All Vehicles)

Location		AM Peak Hour (06:00-07:00)			PM Peak Hour (19:00-20:00)		
		NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way
A11 Off-Slip/ Elms Road Junction	Elms Road East	95	41	136	148	28	176
	A11 Off-Slip	52	0	52	114	0	114
	Elms Road West	45	42	87	35	35	70
La Hogue Road		4	3	7	11	2	13
Freckenham Road		52	56	108	50	39	88

Additional Traffic Survey Locations

4.1.8 The additional traffic surveys were carried out between Thursday 7th to Wednesday 13th July 2022. The traffic surveys included Elms Road, the A11/Elms Road T-Junction, La Hogue Road and Freckenham Road. The locations of the traffic surveys are shown in Figure 4-1 to Figure 4-3. Automatic Traffic Counts (ATCs) are prefixed by 'A' and Manual Classified Count are prefixed by 'M' in the figures below.

4.1.9 The additional traffic survey locations were presented within the 13th July and 25th July 2022 video conference meetings with the LHAs. The results of the additional traffic surveys were presented in the 4th October 2022 video conference meeting with the LHAs.

4.1.10 The summary below includes a comparison of the weekday traffic flows and the Saturday traffic flows.

Figure 4-1: Additional Traffic Surveys along Elms Road and at the A11/Elms Road T-Junction

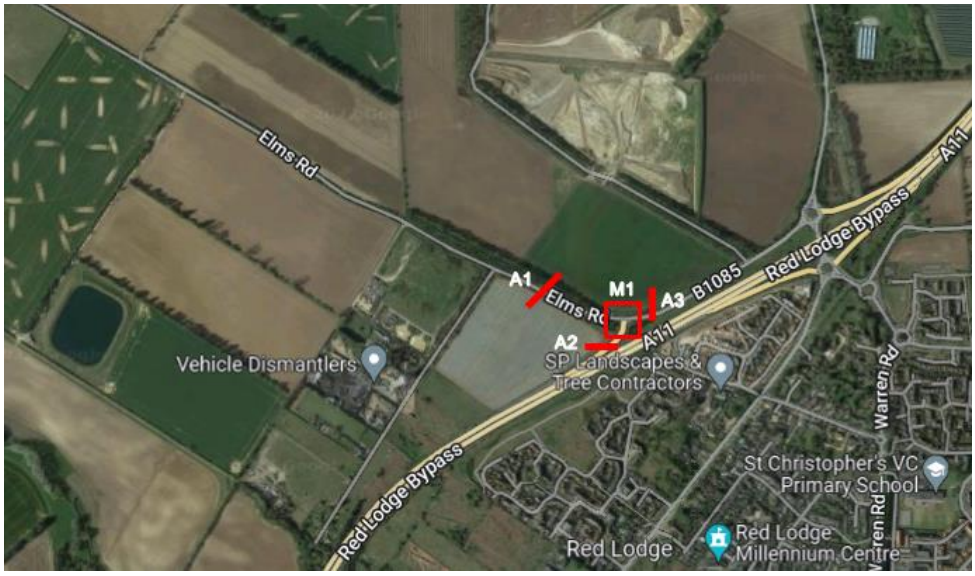
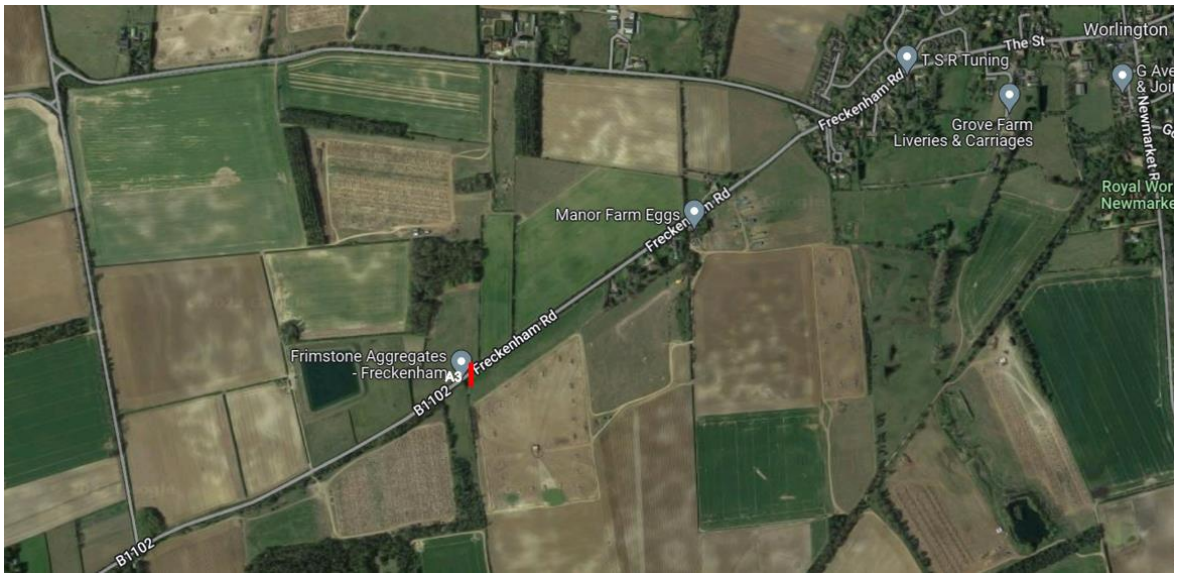


Figure 4-2: Additional Traffic Survey along La Hogue Road

Figure 4-3: Additional Traffic Survey along Freckenham Road



ES Assessment of Additional Traffic Flows

4.1.11 Based on the additional traffic surveys carried out in July 2022, the EIA analysis applied within the Transport and Access chapter of the ES [APP-045] has been carried out for the traffic surveys identified above. This includes severance, driver delay and fear and intimidation, which are set out in Table 4-3 to Table 4-7.

4.1.12 Analysis has been undertaken on the 2022 traffic surveys to identify a Monday to Friday average. TEMPro growth factors have been applied to the 2022 Monday to Friday average traffic flows to factor the traffic flows to a 2023 baseline. It has been necessary to derive new growth factors to those used in the ES as 2022 is a new survey year, however the methodology to derive the growth factor is consistent with that used in the ES. A summary of the TEMPro growth factors are provided in Table 4-2.

Table 4-2: TEMPro Growth Factors 2022 to 2023

Area	Off-Peak	AM	PM	Average Weekday	Location Applied
East Cambridge	1.01812012	1.017817738	1.018574	1.020035206	La Hogue Road
Forest Heath	1.017364165	1.017313768	1.017868	1.019027266	Elms Road & Freckenham Road

Table 4-3: Severance – 2023 AM Development Peak hour (06:00-07:00)

Location		2023 Base (Total Vehs) 06:00-07:00			Staff Vehicles			2023 Base + Construction Staff Vehicles			2023 % Impact			Link Sensitivity	Magnitude	Classification of Effect
		NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way			
A11 Off-Slip/ Elms Road Junction	Elms Road East	96	42	138	0	160	160	96	202	299	0%	383%	116%	Very Low	Major Adverse	Minor Adverse
	A11 Off-Slip	53	-	53	314	-	314	367	-	367	591%	-	591%	Very Low	Major Adverse	Minor Adverse
	Elms Road West	45	43	89	474	0	474	520	43	563	1046%	0%	536%	Very Low	Major Adverse	Minor Adverse
La Hogue Road		4	3	3	282	0	282	286	286	288	6914%	0%	4190%	Very Low	Major Adverse	Minor Adverse
Freckenham Road		53	57	57	0	0	0	53	57	110	0%	0%	0%	Very Low	Negligible	Negligible

Table 4-4: Severance – 2023 PM Development Peak hour (19:00-20:00)

Location		2023 Base (Total Vehs) 06:00-07:00			Staff Vehicles			2023 Base + Construction Staff Vehicles			2023 % Impact			Link Sensitivity	Magnitude	Classification of Effect
		NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way			
A11 Off-Slip/ Elms Road Junction	Elms Road East	151	29	179	474	0	474	625	29	654	315%	0%	265%	Low Very	Major Adverse	Minor Adverse
	A11 Off-Slip	116	-	116	0	-	0	116	-	116	0%	-	0%	Low Very	Negligible	Negligible
	Elms Road West	36	36	72	474	0	474	510	36	546	1317%	0%	662%	Low Very	Major Adverse	Minor Adverse
La Hogue Road		12	2	14	0	58	58	12	60	72	0%	2855%	426%	Low Very	Major Adverse	Minor Adverse
Freckenham Road		50	39	90	0	0	0	50	39	90	0%	0%	0%	Low Very	Negligible	Negligible

Table 4-5: Driver Delay – 2023 AM Development Peak hour (06:00-07:00)

Location		2023 Base (Total Vehs) 06:00-07:00			Staff Vehicles			2023 Base + Construction Staff Vehicles			2023 % Impact			Link Sensitivity	Magnitude		Classification of effect	
		NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way		NB/EB	SB/WB	NB/EB	SB/WB
A11 Off-Slip/ Elms Road Junction	Elms Road East	96	42	138	0	160	160	0%	383%	116%	96	42	138	Very Low	Negligible	Major Adverse	Negligible	Minor Adverse
	A11 Off-Slip	53	-	53	314	-	314	591%	-	591%	53	-	53	Low	Major Adverse	-	Moderate Adverse[4]	-
	Elms Road West	45	43	89	474	0	474	1046%	0%	536%	45	43	89	Very Low	Major Adverse	Negligible	Minor Adverse	Negligible
La Hogue Road		4	3	7	282	0	282	6914%	0%	4190%	4	3	7	Very Low	Major Adverse	Negligible	Minor Adverse	Negligible
Freckenham Road		53	57	110	0	0	0	0%	0%	0%	53	57	110	Low	Negligible	Negligible	Negligible	Negligible

Table 4-6: Driver Delay – 2023 PM Development Peak hour (19:00-20:00)

Location		2023 Base (Total Vehs) 06:00-07:00			Staff Vehicles			2023 Base + Construction Staff Vehicles			2023 % Impact			Link Sensitivity	Magnitude		Classification of effect	
		NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way		NB/EB	SB/WB	NB/EB	SB/WB
A11 Off-Slip/ Elms Road Junction	Elms Road East	151	29	179	474	0	474	315%	0%	265%	151	29	179	Very Low	Major Adverse	Negligible	Minor Adverse	Negligible
	A11 Off-Slip	116	-	116	0	-	0	0%	-	0%	116	-	116	Low	Negligible	-	Negligible	-
	Elms Road West	36	36	72	474	0	474	1317%	0%	662%	36	36	72	Very Low	Major Adverse	Negligible	Minor Adverse	Negligible
La Hogue Road		12	2	14	0	58	58	0%	2855%	426%	12	2	14	Very Low	Negligible	Major Adverse	Negligible	Minor Adverse
Freckenham Road		50	39	90	0	0	0	0%	0%	0%	50	39	90	Low	Negligible	Negligible	Negligible	Negligible

[4] Discussed below tables

Table 4-7: Fear and Intimidation 2023 AAWT (0600-0000)

Location		2023 Base (Total Vehs) 06:00-07:00			Staff Vehicles			2023 Base + Construction Staff Vehicles			2023 % Impact			Link Sensitivity	Magnitude	Classification of effect
		NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way	NB/EB	SB/WB	Two-Way			
A11 Off-Slip/ Elms Road Junction	Elms Road East	2,898	842	3,740	474	160	635	3,372	1,002	4,375	16%	19%	17%	Very Low	Moderate Adverse	Negligible
	A11 Off-Slip	2,086	-	2,086	314	-	314	2,400	-	2,400	15%	-	15%	Very Low	Minor Adverse	Negligible
	Elms Road West	845	948	1,793	474	474	949	1,320	1,423	2,742	56%	50%	53%	Very Low	Moderate Adverse	Negligible
La Hogue Road		409	164	573	282	58	340	691	222	913	69%	35%	59%	Very Low	Major Adverse	Minor Adverse
Freckenham Road		1,415	1,349	2,764	0	0	0	1,415	1,349	2,764	0%	0%	0%	Very Low	Negligible	Negligible

4.1.13 The tables above indicate that in the AM and PM development peak hours the links are forecast to have either a negligible or minor adverse impact in terms of severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation. Therefore, it is concluded that all effects are not significant with the exception of one link which is forecast to have a moderate adverse effect, which has been taken forward for further investigation below.

4.1.14 The majority of links are classified as experiencing a minor adverse effect, or lower, which is not significant in EIA terms. For the AM development peak hour, a moderate adverse significance is forecast on the A11 Off-Slip for driver delay. It is noted that the baseline traffic flows between 06:00-07:00 are very low with less than one vehicle per minute. Therefore, a preliminary junction model has been undertaken to further investigate the significance of this effect.

Elms Road/ A11 Northbound Off-Slip Junction Model

4.1.15 Using the industry standard Junctions 9 software, a junction capacity model of the Elms Road/ A11 Northbound Off-Slip T-Junction had been undertaken to forecast the delay at the junction with the additional construction staff vehicles in the AM development peak hour (06:00-07:00). The traffic flows used have been taken from the 2022 Manual Classified Count (MCC) for 06:00-07:00 and TEMPro growth factors applied to 2023. The forecast number of construction staff vehicles have been added to the turning movements. The result of the model is presented below. The performance of junction has been assessed by considering the ratio to flow capacity (RFC) for each of the approach arms. An RFC value of 0.85 or below indicates that the arm is operating within design capacity. An RFC value of 0.85 to 1.00 indicates that the approach is operating above design capacity but within theoretical capacity, while an RFC value of 1.00 or more indicates that the arm is operating above theoretical capacity and significant queuing and delays may occur.

Figure 4-4: Elms Road/ A11 Northbound Off-Slip Modelling Results

	AM 0600-0700					PM 1900-2000				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023+Dev									
Stream B-C	1.2	12.96	0.56	B	42 %	0.0	5.66	0.02	A	109 %
Stream B-A	0.1	7.99	0.12	A		0.4	10.40	0.27	B	
Stream C-B	0.0	0.00	0.00	A	[Stream B-C]	0.0	0.00	0.00	A	[Stream B-A]

4.1.16 The results of the modelling indicate the junction is forecast to operate with a maximum Ratio to Flow (RFC) capacity of 0.56 on the A11 Northbound Off-Slip. Thus, the junction will operate well within capacity (less than 0.85 design capacity) during the AM development peak hour.

4.1.17 Therefore, it is concluded, that the additional construction staff vehicles will not have a significant impact on driver delay at the A11 Northbound Off-Slip/ Elms Road T-Junction.

4.1.18 The modelling results were discussed in the 4th October 2022 video conferencing meeting with the LHAs. A request was made from the LHAs for

the full results of the model outputs to be provided, which are presented in Appendix B.

Saturday Traffic Flows

4.1.19 The LHAs raised a concern with the absence of a Saturday assessment which was discussed during the 26th April video conferencing meeting. This was due to their concern that workers leaving the Site between 13:00 and 14:00 on a Saturday may have a greater impact than between 19:00 and 20:00 on a weekday due to the potential for higher traffic flows between 13:00 and 14:00 on a Saturday. A further clarification was provided in the 4th October video conferencing meeting to outline that the construction working hours are 07:00-19:00 on a Saturday, not 07:00-13:00 as previously mentioned during the 26th April 2022 video conferencing meeting. These working hours are secured in the CEMP [AS-302] within section 2.3 A comparison of the Saturday traffic flows, and weekday average traffic flows is provided below for the additional traffic survey locations where such data is available.

Table 4-8: Elms Road – West of A11 Slip-Road (Two-Way)

Time (Hour)	Monday to Friday Average			Saturday		
	Total Vehicles	HGVs	Cycle	Total Vehicles	HGVs	Cycle
06:00-07:00	87	7	0	39	3	0
08:00-09:00	167	12	1	75	4	0
17:00-18:00	158	5	1	95	4	1
19:00-20:00	70	4	1	48	2	1

Table 4-9: Elms Road – East of A11 Slip Road (Two-Way)

Time (Hour)	Monday to Friday Average			Saturday		
	Total Vehicles	HGVs	Cycle	Total Vehicles	HGVs	Cycle
06:00-07:00	136	7	0	56	4	0
08:00-09:00	271	17	1	128	3	1
17:00-18:00	406	8	1	232	6	1
19:00-20:00	176	4	2	147	3	1

Table 4-10: A11 Northbound Off-Slip (Single Direction)

Time (Hour)	Monday to Friday Average			Saturday		
	Total Vehicles	HGVs	Cycle	Total Vehicles	HGVs	Cycle
06:00-07:00	52	0	0	19	0	0
08:00-09:00	112	1	0	56	0	0
17:00-18:00	256	1	0	148	1	0
19:00-20:00	114	1	0	100	1	0

Table 4-11: La Hogue Road (Two-Way)

Time (Hour)	Monday to Friday Average			Saturday		
	Total Vehicles	HGVs	Cycle	Total Vehicles	HGVs	Cycle
06:00-07:00	7	1	0	5	3	0
08:00-09:00	45	4	0	23	4	0
17:00-18:00	41	1	0	15	0	0
19:00-20:00	13	0	0	15	1	0

4.1.20 During the survey period, the Saturday traffic flows are lower than the average weekday traffic flows Therefore, the use of the average Monday to Friday traffic flows is considered to be robust for the purposes of the Transport and Access assessment within the ES [APP-045] and the Transport Assessment[APP-117].

2019 and 2022 WebTRIS Data Comparison

4.1.21 Further information is provided in relation to examination questions Q1.10.67 and Q1.10.83 regarding the use of 2019 traffic flows (pre-Covid).

4.1.22 A comparison has been undertaken of the 2019 and 2022 traffic data for the A11 and A14 near the Proposed Scheme. Traffic data has been obtained from WebTRIS for locations which have both 2019 and 2022 data available to determine if traffic flows have returned to pre-Covid levels. Traffic data for 2022 was only available between January to August. The January to August 24 hour Average Daily Traffic (ADT) and 18 Hour Average Weekday Traffic (AWT) has been used for the comparison as this data is available for both years, which is shown in Table 4-12 and Table 4-13. The 18-hour ADT has been identified as the construction staff are forecast to arrive on-site pre-07:00 and depart the site post 19:00 whereas the HGVs are forecast to occur

throughout the day during the construction working hours of 07:00-19:00 avoiding the weekday network peak hours of 08:00-09:00 and 17:00-18:00.

Table 4-12: Average 24-Hour ADT: 2019 and 2022

Location	2019	2022	Difference (Total Vehs)	Difference %
A11 NB (North of B1085 Junction)	20,973	20,014	-959	-5%
A11 SB (North of B1085 Junction)	22,436	20,955	-1,480	-7%
A11 SB (North of La Hogue Rd Junction)	23,929	22,436	-1,494	-6%
A14 EB (Between J37 & 38)	38,593	34,017	-4,576	-12%
A14 WB (Between J37 & 38)	38,520	34,186	-4,334	-11%
A11 NB (North of B1085 Jct)	20,973	20,014	-959	-5%

Table 4-13: Average 18-Hour ADT: 2019 and 2022

Location	2019	2022	Difference (Total Vehs)	Difference %
A11 NB (North of B1085 Junction)	21,112	20,047	-1,066	-5%
A11 SB (North of B1085 Junction)	21,772	20,309	-1,463	-7%
A11 SB (North of La Hogue Rd Junction)	23,329	21,808	-1,521	-7%
A14 EB (Between J37 & 38)	39,904	35,147	-4,756	-12%
A14 WB (Between J37 & 38)	38,480	33,911	-4,569	-12%
A11 NB (North of B1085 Jct)	21,112	20,047	-1,066	-5%

4.1.23 This comparison indicates that 2022 traffic flows on the A11 and A14 between January and August are between 5% to 12% lower than the January to August 2019 average. Therefore, it is considered that the September 2019 traffic flows used in the Transport and Access Chapter of the ES [APP-045] and TA [APP-117] are robust due to the 2019 traffic flows are higher than those observed in 2022.

Update to Transport Assessment Figures

4.1.24 As per Q1.10.75 and Q1.10.80 of the Examining Authority's written questions and requests for information (ExQ1) issued on 4 October 2022, Figure 3 and Figure 4 from the Transport Assessment have been updated with minor changes to the labelling of the locations of the traffic surveys. The update is provided in Appendix C.

5 Daily HGV Movements

5.1.1 During the 4th October video conferencing meeting with the LHAs a question was asked to clarify the definition of a HGV as over 7.5 tonnes or 3.5 tonnes. It was confirmed that it is 7.5 tonnes, and no further clarifications were sought from the LHAs.

5.1.2 Suffolk Highway Authority raised a question regarding the assumption of an even distribution of HGVs throughout a construction day. Based on professional experience, this approach is both commonly taken and a reasonable assumption. Furthermore, the use of an even distribution to identify a peak hourly flow of HGVs is considered robust as it excludes network peak hours.

5.1.3 However, Suffolk identified Sizewell C Power Station as a recent example of a consented DCO where the hourly distribution of HGVs was not evenly distributed throughout the day. The data identified for Sizewell C Power Station is based on Hinkley C Power Station. Further analysis into the daily distribution of HGVs has been undertaken using Sizewell C Power Station distributed as the example referenced, to consider the potential effect of applying a different distribution.

5.1.4 Information regarding the daily distribution of HGVs has been obtained from the Planning Inspectorate website[5] for Sizewell C Power Station. The HGV distribution applied to Sizewell C Power Station is identified in Table 5-1 and Figure 5-1 below. In addition, the table below provides a comparison of the hourly distribution of HGVs throughout a peak day for Sunnica (155 HGVs, single direction) based on the Sizewell C Power Station distribution and the Sunnica distribution.

Table 5-1: HGV Daily Distribution Comparison[6]

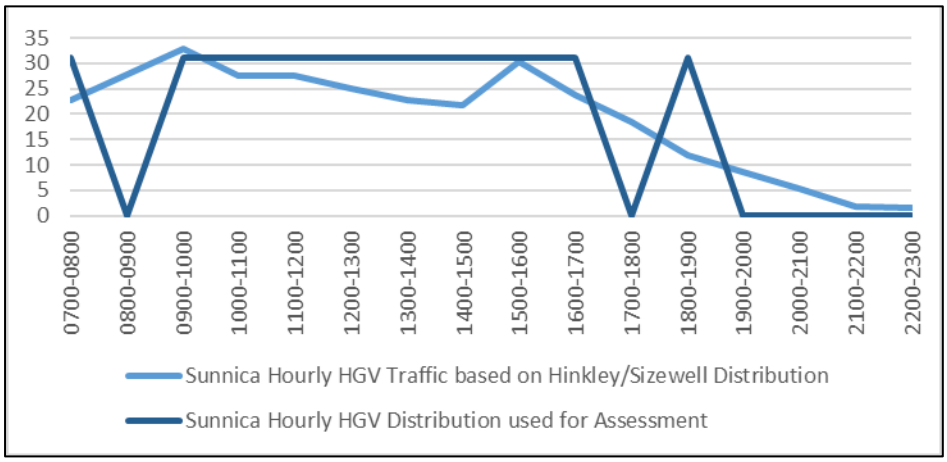
Hour	Sizewell C % Distribution			Sunnica % Distribution			HGV Trip Generation based on Sizewell C % Distribution			HGV Trip Generation based on Sunnica % Distribution		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
07:00-08:00	13%	1.7%	14.7 %	10%	10%	20%	20	3	23	16	16	31
08:00-09:00	13%	4.9%	17.9 %	0%	0%	0%	20	8	28	0	0	0
09:00-10:00	13%	8.2%	21.2 %	10%	10%	20%	20	13	33	16	16	31
10:00-11:00	7%	10.7 %	17.7 %	10%	10%	20%	11	17	27	16	16	31

[5] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-002222-SZC_Bk8_8.5_Transport_Assessment_Appx2A_7B.pdf

[6] Summations may not add up due to rounding

Hour	Sizewell C % Distribution			Sunnica % Distribution			HGV Trip Generation based on Sizewell C % Distribution			HGV Trip Generation based on Sunnica % Distribution		
	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way	In	Out	Two-Way
11:00-12:00	7%	10.8 %	17.8 %	10%	10%	20%	11	17	28	16	16	31
12:00-13:00	7%	9.2%	16.2 %	10%	10%	20%	11	14	25	16	16	31
13:00-14:00	7%	7.7%	14.7 %	10%	10%	20%	11	12	23	16	16	31
14:00-15:00	7%	7.0%	14.0 %	10%	10%	20%	11	11	22	16	16	31
15:00-16:00	12%	7.6%	19.6 %	10%	10%	20%	19	12	30	16	16	31
16:00-17:00	7%	8.3%	15.3 %	10%	10%	20%	11	13	24	16	16	31
17:00-18:00	4%	7.9%	11.9 %	0%	0%	0%	6	12	18	0	0	0
18:00-19:00	1%	6.7%	7.7%	10%	10%	20%	2	10	12	16	16	31
19:00-20:00	1%	4.6%	5.6%	0%	0%	0%	2	7	9	0	0	0
20:00-21:00	1%	2.5%	3.5%	0%	0%	0%	2	4	5	0	0	0
21:00-22:00	0%	1.2%	1.2%	0%	0%	0%	0	2	2	0	0	0
22:00-23:00	0%	1.0%	1.0%	0%	0%	0%	0	2	2	0	0	0

Figure 5-1: HGV Daily Distribution Comparison (Two-way)



5.1.5 The Sizewell C Power Station distribution identifies a peak inbound movement of 20 HGVs compared to 16 based on the Sunnica distribution and the Sizewell C Power Station identifies a peak outbound movement of

17 HGVs compared to the Sunnica distribution. When comparing the two-way HGV traffic flows, the Sizewell C Power Station distribution identifies a peak two-way movement of 33 HGVs whereas the Sunnica distribution identifies a peak two-way movement of 31 HGVs. Therefore, it is concluded the difference in hourly distribution identified is a negligible difference and the assumption made for the purposes of the Transport and Access ES [APP-045] is reasonable as the conclusions of the assessment would remain unchanged.

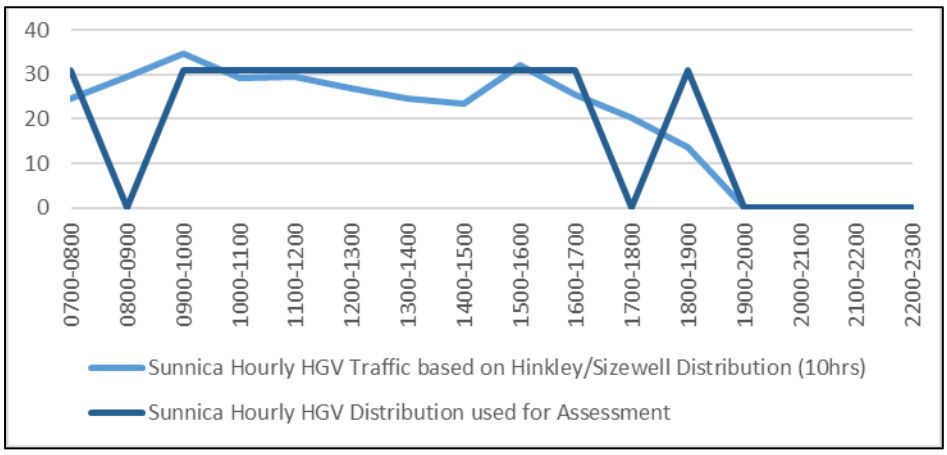
5.1.6 The analysis above was presented in the 4th October video conferencing meeting with the LHA. Following this the LHA commented that the Sizewell C Power Station HGV distribution occurred over a longer period than that proposed for Sunnica and asked to see a comparison of the Sizewell C Power Station distribution compressed to the Sunnica hours 07:00-19:00. As a result, a sensitivity test of the Sizewell C Power Station distribution has been undertaken below with the four inbound HGVs and 15 outbound HGVs forecast to occur between 19:00-23:00 in Table 5.1 pro-rated over the proposed Sunnica delivery window. The results of the sensitivity test is presented in Table 5-2 and Figure 5-2 below.

Table 5-2: HGV Daily Distribution Comparison – Sensitivity Test [7]

Hour	HGV Trip Generation based on Sizewell C % Distribution – Sensitivity Test			HGV Trip Generation based on Sunnica % Distribution – Sensitivity Test		
	In	Out	Two-Way	In	Out	Two-Way
07:00-08:00	20	4	25	16	16	31
08:00-09:00	20	9	29	0	0	0
09:00-10:00	20	14	35	16	16	31
10:00-11:00	11	18	29	16	16	31
11:00-12:00	11	18	29	16	16	31
12:00-13:00	11	16	27	16	16	31
13:00-14:00	11	13	25	16	16	31
14:00-15:00	11	12	23	16	16	31
15:00-16:00	19	13	32	16	16	31
16:00-17:00	11	14	25	16	16	31
17:00-18:00	7	14	20	0	0	0
18:00-19:00	2	12	14	16	16	31
19:00-20:00	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0
21:00-22:00	0	0	0	0	0	0
22:00-23:00	0	0	0	0	0	0

[7] Summations may not add up due to rounding

Figure 5-2: HGV Daily Distribution Comparison – Sensitivity Test (Two-Way)Sizewell/Hinkley Distribution limited to 0700-1900 hours only



5.1.7 The Sizewell C Power Station distribution identifies a peak inbound movement of 20 HGVs compared to 16 based on the Sunnica distribution and the Sizewell C Power Station identifies a peak outbound movement of 18 HGVs compared to the Sunnica distribution. When comparing the two-way HGV traffic flows, the Sizewell C Power Station distribution identifies a peak two-way movement of 35 HGVs whereas the Sunnica distribution identifies a peak two-way movement of 31 HGVs. Therefore, it is concluded the difference in hourly distribution identified is a negligible difference and the assumption made for the purposes of the Transport and Access ES [APP-045] is reasonable as the conclusions of the assessment would remain unchanged.

6 Mini-Bus Movements

6.1.1 The LHAs have requested further details regarding the use of mini-buses. Therefore, further clarification is provided below. A summary of the information was presented in the 4th October 2022 video conference meeting with the LHAs.

6.1.2 A mini-bus service is proposed as part of the Framework Construction Traffic Management Plan and Travel Plan [APP-118,AS-300,AS-301] which is set out in paragraph 7.2.30 of that report. The mini-buses are proposed to transport staff from the two central car parks, accessed via Elms Road and La Hogue Road, to the construction zones around the Order limits. A number of the construction zones can be reached from either of the two central car parks without using the external local highway network. Therefore, the internal trips have been excluded from the external mini-bus forecast.

6.1.3 External mini-bus trips have been classified as those that cannot be made using the internal routes without using the public highway, which also includes crossing the public highway at the temporary traffic signals along the cable corridor. Therefore, there is the potential for a greater number of mini-buses to use internal routes to travel along the cable corridor and the temporary traffic signals to cross the public highway in a safe and controlled manner. This would further reduce the external number of mini-bus movements discussed above. However, to provide a robust forecast of external mini-bus trips, this has not been included and it would be at the contractor's discretion to assess if this can be achieved in a safe and controlled manner.

6.1.4 The mini-bus forecast is based on a 14-seater vehicle, however, this capacity could be increased depending on contractor arrangements, which would reduce the number of trips. Therefore, to provide a robust assessment, it is considered reasonable to assume a 14-seater mini-bus.

6.1.5 Further explanation regarding the mini-bus and external mini-bus trips on the local highway network that are discussed in Section 6.4 of the Transport Assessment [APP-117] is provided below.

6.1.6 The peak number of external mini-buses trips are forecast to be 59 (single direction) on the local highway network based on the peak number of construction staff in month 9. On average across the construction period, 27 mini-bus trips (single direction) are forecast on the local highway network.

6.1.7 The external mini-bus trips are forecast to occur in the morning once construction staff have arrived on site and are ready to be transported to the construction zones. This means that they will occur from 07:00. The external mini-bus trips will occur before the AM network peak hour (08:00-09:00) based on the construction staff start time of 07:00.

6.1.8 The external mini-bus trips are forecast to occur in the evening as a result of transporting the construction staff from the construction zones back to the two centralised car parks. These mini-bus trips will occur prior to 19:00 to

collect the construction staff. All the external mini-bus trips will occur after the PM network peak hour (17:00-18:00).

6.1.9 For Sunnica East, the largest number of mini-bus trips (21 single direction trips based on month 9) are forecast to transport construction staff to Ferry Lane which is circa 4-6km (3-4 miles) drive from the Sunnica East car park. For Sunnica West, the largest number of mini-bus trips (10 single direction trips based on month 9) are forecast to transport construction staff to Dane Hill Road which is circa 2kmdrive from the Sunnica West car park.

6.1.10 The external mini-bus trips represent a separate effect, which will be substantially lower than the impact assessed with the Transport and Access chapter of the ES [APP-045]. The LHAs noted that the minibus trips will occur from 07:00 and prior to 19:00, and asked whether this will mean that there will be a high volume of minibuses in a short period of time. It is appreciated that the trips are unlikely to occur across the full hour, and are therefore not considered to be an hourly flow. However, the volume of trips, i.e. a maximum of 59 trips spread across multiple routes, remains substantially lower than the peak hour construction flows. Furthermore, these movements will occur at an off-peak time, when traffic volumes are significantly lower than network peaks. Therefore, the forecast external mini-bus movements are not expected to have a significant impact on the operation of local junctions given the low number of forecast vehicles, the multiple locations travelling to/from and the time the mini-buses will be on the local highway network.

7 Construction Staff Car Parks, 'Fly' Parking and Visitors

Construction Staff Car Parks

7.1.1 The construction staff car parks were discussed during the 4th October video conferencing meeting with the LHAs. The internal design of the two centralised car parks and haul roads allow for internal queueing of vehicles during entry and egress of construction staff vehicles to minimise the queuing on Elms Road and La Hogue Road during the arrival and departure of construction staff.

7.1.2 The internal haul road leading to Sunnica East construction staff car park allows for circa 400m of internal queuing of construction staff vehicles (circa 70 vehicles). This excludes the internal queuing within the car park itself.

7.1.3 The internal haul road leading to Sunnica West construction staff car park allows for circa 200m of internal queuing of construction staff vehicles (circa 35 vehicles). This excludes the internal queuing within the car park itself.

7.1.4 Both of the construction staff car parks will be managed during the arrival and departure times of the construction staff.

7.1.5 Both the construction staff car parks have been designed to accommodate the peak number of construction staff vehicles forecast in the Transport and Access assessment within the ES [APP-045], which has been shown within Section 2 of this Technical Note to be robust. The size of the construction staff car park will be reduced as the construction programme progresses. The final CTMP and TP, prepared by the contractor, will outline the final layout of the two centralised construction staff car parks.

'Fly' Parking

7.1.6 The LHAs raised concerns regarding potential 'fly' parking. This would be considered to occur if construction staff parked their vehicles in the local residential areas and not in the centralised construction staff car parks, and lift-shared to the site. Additional clarification has been provided within the 26th April and 4th October 2022 video conference meetings with the LHAs.

7.1.7 A summary is provided below regarding a Community Liaison Officer which is a commitment already provided within the Framework Construction Environmental Management Plan (F-CEMP).

7.1.8 As identified in the F-CEMP, a Community Liaison Group will be set up prior to construction and a Community Liaison Officer (CLO) will be appointed to engage with local communities during construction. Contact details will also be available on the display board at the site entrance should anyone wish to make contract.

7.1.9 With regards to "fly" parking, the role of the CLO will be to listen to any concerns of local communities which may arise, and investigate as necessary. If staff are parking off-site, and this is causing a highways safety or amenity issue, the CLO will liaise with staff through the TP and encourage

staff to use the on-site parking instead. The two staff car parks can accommodate the peak number of construction staff vehicles forecast as identified in the Transport and Access chapter of the ES [APP-045] and TA [APP-117]. Whilst the use of on-site parking will necessarily be security controlled, there will be no restrictions or charges to valid construction staff accessing the car park, and therefore there should be no incentive to "fly" park and every incentive to use the designated on-site parking.

Visitor Parking

7.1.10 During the 4th October video conferencing meeting with the LHAs a question was raised regarding potential visitors to the site during the construction period. The Applicant had provided the forecast of construction staff during the 24-month construction period. The forecast includes all person expected to be on site during the construction period. However, if there are additional visitors to the site during the construction period, such as site inspections or management visits, these are expected to occur outside of construction and network peaks, involve very few vehicles and have a negligible transport impact. On-site parking would be provided for visitors within the construction staff car parking area.

8 Clarification on Sunnica East and Sunnica West Peak Trip Generation

8.1.1 SCC sought clarification regarding the Sunnica East A and B and Sunnica West A and B staff trip generation outlined in the Transport and Access chapter of the ES [APP-045] and how they corresponded with the traffic flows diagrams in Annex F of the Transport Assessment [APP-117]. The query was raised during the July 2022 video conference meeting with a follow up via email provided in September 2022..

8.1.2 The text provided in paragraph 13.8.4 and 13.8.72 of the ES [APP-045] identifies the peak daily staff for the Sunnica East Site A and B and Sunnica West Site A and B separately. The peak number of staff at the Sunnica East Site A and B occurs in month 12 and Sunnica West Site A and B occurs in month 6, while the Scheme peak number of staff occurs in month 9 of the construction programme. It is noted that the scheme peak daily staff numbers from month 9 had been used for the ES assessment due to the peak Sunnica East daily staff numbers and peak Sunnica West daily staff numbers not occurring during the same month and the Scheme peak. Paragraphs 13.8.4 and 13.8.72 from the ES [APP-045] are reproduced with corrections below. The assessment tables for the Sunnica East Site A and B and the Sunnica West Site A and B correspond with the traffic flow diagrams in Annex F of the Transport Assessment [APP-117] and therefore are correct. It should be noted however, that analysis provided in the ES for the Scheme has been based on month 9 of the construction programme. Therefore, the analysis in Table 13-29 to Table 13-32 remains correct as they correspond to the peak traffic flows diagrams identified in Annex F. The corrected paragraphs are provided below.

a. Paragraph 13.8.4 - The number of construction staff at the Sunnica East A and B Sites during the peak construction month (month 9) for the entire Sunnica scheme is forecast to be 733 construction staff per day. This includes the staff that are associated with the two on-site substations. Based on an average of 1.5 passengers per vehicle, this would equate to 494 staff vehicles. Due to the number of staff being split into different sites and categories there is rounding present when calculating the number of staff vehicles. The peak number of staff for the Sunnica East Sites occurs in month 6 of the construction programme. Construction staff would be required to arrive between 06:00 and 07:00 and depart between 19:00 and 20:00.
b. Paragraph 13.8.72 - The number of construction staff for the Sunnica West A and B Sites during the peak construction month (month 9) for the entire Sunnica scheme is forecast to be 660 construction staff per day. This includes the staff that are associated with the one substation on Sunnica West Site A and the Burwell National Grid Substation Extension which are anticipated to use the Sunnica West Site A main access. Based on an average of 1.5 passengers per vehicle, this would equate to 443 Sunnica West staff vehicles. The number of staff vehicles is subject to rounding due to the breakdown of staff per type of works. Construction staff would be expected to arrive between 06:00 and 07:00 and depart between 19:00 and 20:00

8.1.3 It is important to note that, despite the highlighted textual errors set out above, the conclusions drawn within the ES were based on correct traffic forecast, and therefore remain valid.

8.1.4 It is also noted in section 5.4 of the TA [APP-117] that the grid connection corridor is forecast to require a maximum of five staff vehicles (10 movements) per day during the seven-month Grid Connection Route A and B construction window. Given the location of the Grid Connection Route A and B will change as the construction is progressed, the staff associated with the construction of this element will go to the most appropriate Grid Connection Route A and B site access. There will be no staff vehicles in the network peak hours and the increase in traffic flow as a result of the staff vehicles is not expected to impact the operation of the local junctions due to the forecast low number of staff vehicles. For these reasons, the staff vehicles associated with the grid connection corridors are not included within the distribution and assignment of the construction staff vehicles for the Scheme.

9 'Boomerang' Movement at the A14 J37

Overview

9.1.1 Suffolk Highway Authority raised concerns regarding HGVs performing the 'Boomerang' movement at the A14 J37. This is where vehicles are required to exit the westbound off-slip, turn right onto the A142 and then turn right onto the eastbound on-slip. This movement is required for vehicles travelling southbound on the A11 or westbound on the A14 to access La Hogue Road. Suffolk Highway Authority provided reference to a planning application for the Hatchfield Farm application (C/13/0408/OUT) where highway improvements are proposed to the A14 J37. This is intended to improve the operation and safety of the A14 J37 junction where construction vehicles associated with the development are anticipated to use. A date is not specified in the planning permission of when these highway improvement works will be undertaken. However, as set out in this section, this highway scheme is not relied upon to make the Sunnica Proposed Development acceptable.

9.1.2 Therefore, a further review of the Personal Injury Collision (PIC) data has been undertaken for the 'Boomerang' movement and a review of the proposed highway works at the A14 J37 are provided below.

PIC Review

9.1.3 A further review has been undertaken on the PIC data for the A14 Junction 37, focusing on the incidents that were identified to have occurred whilst undertaking part of the 'Boomerang' movement. These movements include the right turn movement from the A14 westbound off slip and the right turn movement from the A142 to the A14 eastbound on slip.

9.1.4 In the most recent five years of data, two incidents have been identified to have occurred whilst undertaking part of the 'Boomerang' movement at A14 Junction 37. Both incidents were categorised as slight. This equates to 0.4 incidents per year which does identify a cluster of incidents.

a. Right turn from A14 Westbound Off Slip onto the A142
   i. One slight incident was recorded involving two cars. The incident report recorded that a car pulled out from the A14 westbound off-slip into the path of another vehicle on the A142 after failing to look properly. The driver was noted to be inexperienced in the report.

b. Right turn from A142 onto the A14 Eastbound On Slip
   ii. One slight incident was recorded involving an LGV and a car. The incident report recorded that the LGV driver's foot slipped off the brake whilst waiting in the right turn lane causing the van to move into the path of an oncoming car.

9.1.5 Therefore, the more in depth review of the PIC data for the A14 Junction 37 shows that there should not be a requirement on the Sunnica development to provide a highways safety mitigation in this location due to the limited number of incidents and lack of common causal factors which could indicate

an underlying highways safety issue. Notwithstanding this, the scheme proposed by the Hatchfield Farm has been considered below.

Hatchfield Farm Application

9.1.6 Consideration is provided below of the proposed part signalisation of the A14 Junction 37 as part of the Hatchfield Farm application (planning application reference: C/13/0408/OUT), with an insert of the scheme provided in Figure 9-1. The outline planning application for the part signalisation of the A14 Junction 37 was approved in March 2020. A date is not specified in the planning permission of when these highway improvement works will be undertaken

Figure 9-1: Proposed Part Signalisation of the A14 Junction 37 (C/13/0408/OUT)

9.1.7 The proposals include the signalisation of the A14 Westbound Off-Slip /A142 T-Junction and the A14 Eastbound off-Slip / A142 T-Junction. Both the A14 Westbound and Eastbound On-Slips T-Junctions are not proposed to be signalised.

9.1.8 The inbound HGVs travelling to Sunnica West on the A11 north of Red Lodge or on the A14 east of J38 would be required to follow the HGV route identified via the A14 J37 to access Sunnica West on La Hogue Road. This would require HGVs to perform the 'Boomerang' movement at the A14 J37. Sunnica vehicles would navigate the A14 J37 via the A14 Westbound Off-Slip and turn right (northbound) towards the A14 Eastbound On-Slip via the right-hand lane provided.

9.1.9 The proposals are expected to improve the safety of the A14 Westbound Off-Slip T-Junction. The signalisation of the A14 Westbound Off-Slip T-Junction results in vehicles not having to wait for gaps in the traffic along the A142. A right turn ghost island is currently provided on the A142 for vehicles waiting to turn onto the A14 Eastbound On-Slip. As part of the proposals the A14 Eastbound On-Slip is not included within the signalisation. However, as a result of the signalisation of the A14 Eastbound Off-Slip / A142 T-junction, it would be expected that gaps in the traffic will be created for vehicles to turn right onto the A14 Eastbound On-Slip.

9.1.10 Therefore, the proposals are expected to improve the safety of the A14 Eastbound On-Slip T-Junction. When Sunnica West related vehicles egress the Scheme, they are not required to perform the 'boomerang' movement as an on-slip from La Hogue Road to the A11 is provided. The part signalisation of A14 J37 should improve the highway safety at the junction, which will benefit all users of the junction including the Sunnica related vehicles.

10 Public Rights of Way

Overview

10.1.1 This sections provides a summary of the PRoW closures, PRoW surveys and consultation undertaken regarding PRoWs.

PRoW Closures

10.1.2 The Applicant has been requested to show a plan of the temporary PRoW closures, with a view to describing the potential for cumulative impact if multiple closures were to occur simultaneously. It is not possible to rule out this occurring at this stage in the project. In practice, the PRoW closure programme is driven by the grid connection cabling element of the project, which will progress along a linear route, rather than occur in multiple locations simultaneously. Thus, multiple simultaneous closures is very unlikely to occur in practice and therefore the expectation is that there will be isolated, rather than cumulative, impacts.

10.1.3 Three PRoWs are located within the boundary of Sunnica East Site A. PRoW W-257/007/0, W-257/002/X and W-257/002/0 cross the south-west part of the site between Beck Road and Mortimer Lane.

10.1.4 One PRoW is located within the boundary of Sunnica East Site B. PRoW W257/003/0 runs along the south-western boundary of the site from Turnpike Road at Red Lodge in the south-east to Badlingham Manor in the north-west. An unclassified road (U6006), which is a publicly accessible route, including for equestrians, extends northwards from Elms Road to Worlington. It is noted that U6006 is overgrown with vegetation and provides a narrow access. A survey of U6006 was undertaken in July 2022 which is discussed in the following subsection.

10.1.5 To the west of Sunnica East Site B the B1102 provides a footway for a section along the northern carriageway, alongside vehicles travelling eastbound, which is approximately 2m wide between North Street and East View. To the north, on Newmarket Road, footways are provided on both sides of the carriageway between the B1102 and The Paddocks.

10.1.6 Grid Connection Route A crosses the Chippenham footpath 49/7 before passing approximately 20m west of the Chippenham Gravel Pit CWS and crossing the B1085.

10.1.7 No PRoW are situated within the boundary of Sunnica West Site A or Sunnica West Site B. Snailwell 5 bridleway (PRoW) runs along the south-west boundary of Sunnica West Site A.

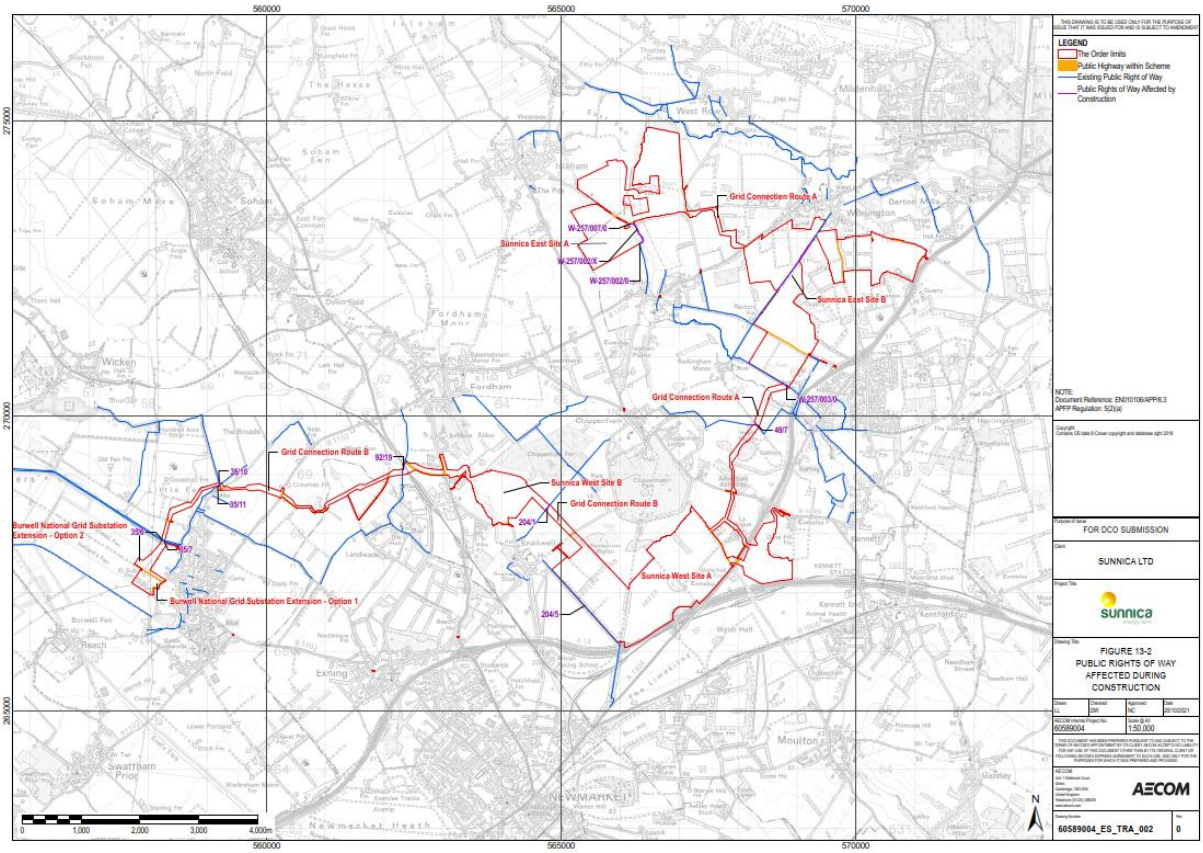
10.1.8 There are six PRoWs that intersect Grid Connection Route B. Towards Snailwell, footpath PRoW 204/1 connects Snailwell with Chippenham Park. Heading west from Sunnica West Site B, footpath 92/19 runs through agricultural fields between Fordham and Snailwell. Footpaths 35/10 and 35/11 run between Wicken and Burwell passing through several agricultural fields. There are also two PRoWs 35/6 and 35/7 running between Burwell and Reach, again through agricultural land.

10.1.9 As outlined in section 6.3 of the FCTMP and TP [APP-118/AS-278/AS-279], the PRoW to be temporarily closed for an expected maximum duration of three weeks are as follows:

a. W-257/002/X;
b. W-257/007/0;
c. W-257/003/0;
d. W-257/002/0;
e. 49/7;
f. 204/1;
g. 92/19; and
h. 35/10.

10.1.10 The PRoWs that are expected to be affected during the construction of the Scheme are illustrated in Figure 10-1. It should be noted that the location and extents of the temporary PRoW and other road closures are shown on the Traffic Regulation Measures Plans – Road Closures [AS-284 to AS-286 inclusive] and the extents of the PRoW closures are described in Part 1 of Schedule 6 to the draft DCO.

Figure 10-1: PRoW Affected during Construction



10.1.11 The PRoWs to be temporarily closed are not located near one another. Furthermore, due to their locations, the PRoWs to be closed are unlikely to form alternative routes to each other during the closures for trips between significant origins and destinations, e.g. residential areas and shops, employment or schools. It is possible that some leisure trips, e.g. a countryside walk, would use more than one of the PRoWs which would temporarily be closed. However, there would remain multiple alternative

routes to use for a similar purpose, meaning that there would not be a cumulative impact.

10.1.12 In conclusion, it is highly unlikely that all PRoW would be temporarily closed at the same time. However, even if they were, it is reasonable to conclude that this would not result in a significant cumulative effect.

10.1.13 During the 4th October video conferencing meeting with the LHAs closures of PRoWs were discussed. The LHAs stated that it would be preferred to avoid any PRoW closures with the preferred method to use of marshals (banksman/banks person) to enable uses of the PRoW to cross the point the closure is required.

10.1.14 As per the Applicants response provided via email correspondence and outlined below, each PRoW closure will be considered prior to the works being undertaken to assess if the approach to using marshals (banksman/banks person) is achievable. This will be updated in the next iteration of the Framework Construction Traffic Management Plan and Travel Plan that the Applicant proposes to submit at Deadline 3. However, the approach is dependent on the contractor and a decision to be made on the basis of the health and safety requirements.

10.1.15 The marshal (banksman/banks person) would be expected to assist PRoW users to safely cross the construction area during construction hours. Also, there would be a provision of warning signage to raise awareness for PRoW users and construction vehicles approaching the interface/ crossing point.

10.1.16 It is noted for the PRoW 35./10, which runs along First Drove, access to the residential property will be provided during the potential closure of the PRoW and a marshal (banksman/banks person) will be provided to ensure safe passage.

PRoW Surveys

10.1.17 The LHAs raised concerns regarding the lack of data for the PRoWs to consider the impact of their closure. As a result, a survey company was commissioned to undertake a one-week (seven consecutive days) survey of a number of PRoWs that have been assessed to be temporarily closed during construction. The PRoW surveys were undertaken at the same time of the traffic surveys (8th-13th July 2022) as previously discussed in this Technical Note. The following PRoWs were surveyed and the locations of the surveys are illustrated in Figures 10-2 to 10- 5 below:

a. PRoW 204/1
b. PRoW 35/10
c. PRoW 92/19
d. U6006 Elms Road near Red Lodge
e. PRoW 49/7

10.1.18 The purpose of the PRoW surveys was to gain a greater understanding of the level of use of the PRoWs which are proposed to be temporarily closured during the construction period. The PRoWs surveyed were identified at

points where videoing equipment could be placed to record activity at the PRoWs.

10.1.19 Email correspondence was sent in June 2022 to the LHAs outlining the proposed PRoW survey locations. No issues or concerns were raised by either of the LHAs regarding the proposed PRoW survey locations.

10.1.20 A summary of the recorded activity of the PRoWs are provided below.

a. PRoW 204/1 located adjacent to Fordham Road, Snailwell: a daily average of 11 pedestrians movements recorded and no other Non-Motorised Users (NMU) recorded.
b. PRoW 35/10 located along First Drove near Burwell: a daily average of two to three pedestrians and eight to nine motor vehicles movements recorded in a single direction. From reviewing video footage, the motor vehicle movements observed were associated with the property located on Frist Drove or farm vehicles.
c. PRoW 92/19 which crosses the A142 near Fordham Abbey: a daily average of less than one pedestrian movement and no other NMUs recorded.
d. U6006 Elms Road near Red Lodge: a daily average of five pedestrian movements recorded and an average of three cycle movements. Additionally, an average of one motorised vehicles (e.g., motorcycles, mopeds and quad bikes) were recorded using U6006 per day. However, it is noted that no larger vehicles were recorded along U6006 and noted that U6006 is unsurfaced and overgrown with vegetation.
e. PRoW 49/7 which is accessed via Badlingham Road near to Chippenham was surveyed at a location as close as practically possible to the proposed closure. However, on review of the survey data it was concluded that the surveyed data was not representative of the location of the PRoW closure.

10.1.21 The results of the PRoW surveys identified a low number of daily users of the PRoWs. As a result, the conclusion presented in the Transport and Access chapter of the ES [APP-045] which concluded that no significant impact on NMUs as a result of the PRoW closures was forecast during the construction period, remains unchanged. The locations of the PRoW surveys are identified below.

Figure 10-2: PRoW 204/1

Note: The PRoW is located adjacent to Fordham road, Snailwell and runs in a south-west to north-east direction from Fordham Road. An access point to the PRoW is shown on the bottom of the screenshot above.

Figure 10-3: PRoW 35/10

Note: The PRoW runs along First Drove in a north-south direction.

Figure 10-4: PRoW 92/19

Note: The PRoW crosses the A142 near Fordham Abbey.

Figure 10-5: U6006

Note: U6006 is located accessed from Elms Road near Red Lodge and runs in a south-west to north-east direction towards Worlington, as shown in the bottom screenshot above.

10.1.22 During the 4th October 2022 video conference meeting with the with the LHAs a question was raised regarding the high temperatures recorded in the UK during July 2022. The Met Office[8] has provided a summary of the temperatures recorded in the UK during July. This identifies the 'unprecedented extreme heatwave' occurred from 16th to 19th July 2022. This occurred two days after the completion of the PRoW surveys. The Met Office also provided a summary of the temperatures throughout July 2022

[8] https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2022/2022_03_july_heatwave.pdf

which does not indicate extreme heat throughout the PRoW[9] survey period. Therefore, it is not considered the heatwave would have had a material impact of the number of PRoW users recorded during the survey period.

PRoWs Correspondence

10.1.23 Email correspondence was provided to East Cambridgeshire Public Rights of Way Officer and Suffolk Highway Authority in September 2022 regarding further clarification of the impact on PRoWs during the construction period. A summary is provided in for the eight PRoWs (including U6006) which are to be temporarily closured during the construction period.

Table 10-1: PRoW Correspondence

Summary of Clarification Sought from East Cambridgeshire Public Rights of Way Officer and Suffolk Highway Authority	Applicant's Response
Maximum length of time closure?	Up to 3 weeks.
Nature of work that will be taking place?	laying of cable as part of the Grid Connection programme.
Concerns regarding 'temporary use of motor vehicles on Public Rights of Way' seeking specific as to the nature / size / weight of the vehicles? Clarification regarding if the size and weight of the vehicles require the need to create a haul road?	Vehicles will cross PRoWs, but the intention is not that they will drive along the PRoWs.
Should damage be caused to the surface of any PROW we need assurance of appropriate repairs.	An update to the Framework Construction Traffic Management Plan and Travel Plan will clarify that this is included within the existing requirement for before, during and after, condition surveys.
Regarding PRoWs 35/6, 35/7 and 35/11, all three of these are included under your measure 'Motor vehicles under direction of the undertaker may pass along, or cross, the length of the public right of way':	The intention is that these may need to be crossed rather than driven along. PRoWs are not proposed to be closed as these section will be crossed using non-intrusive methods so it is likely that the crossing would be done under watching brief rather than a closure.
East Cambridgeshire email correspondence outlined 'the preference would always be to provide a manned crossing point whilst works are taking place, rather than closure of the PRoW'.	This can be considered for each individual PRoW closures prior to the works being undertaken to assess if this approach is achievable . However, the approach is dependent on the contractor and a decision to be made on the basis of the health and safety requirements. As such it is important to retain the ability to temporarily close PRoW where required to enable the works to be carried out safely.

[9] https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/summaries/uk_monthly_climate_summary_202207.pdf

11 Site Accesses

11.1.1 The LHAs requested a consolidated package of drawings for all site access information, for ease of reference and legibility, which was provided to the local highway authorities for comment. The site access drawings are currently being updated following feedback from the local highway authorities. The aim is to find a solution with the local highway authorities on the information provided for the site accesses and subsequent discussions with the local highway authorities will take place to facilitate this. The stie access drawings will be provided within the next iteration of the Framework Construction Traffic Management Plan and Travel Plan that the Applicant proposes to submit at Deadline 3

11.1.2 Information provided in the Framework Construction Traffic Management Plan and Travel Plan ('F-CTMP & TP') [AS-300,AS-301] included site access locations, indicative size of the access junction, swept path analysis (vehicle tracking) of 16.5m articulated vehicles and additional swept path analysis of cranes, and Abnormal Individual Loads (AILs) where relevant. The F-CTMP & TP [AS-278,AS-279] also provided information on when the site accesses were required i.e. construction, operational and decommissioning phases. The average and peak number of HGVs for the Sunnica East and Sunnica West site accesses and local highway network was also provided. In addition, the Traffic Regulation Measures Plans – Temporary Measures and the Traffic Regulation Measures Plans – Road Closures [AS-284 to AS-288 inclusive]] show the location and extents proposed temporary traffic signals, temporary speed limit reductions and temporary road (including public rights of way) closures required during the construction phase.

11.1.3 It was acknowledged that there was a considerable amount of information provided, in multiple locations within the DCO documentation, and that providing a collated set of drawings would assist the LHAs in reviewing the proposed access strategy. Therefore, a set of drawings has been prepared and provided to the LHAs. This set of drawings for the site accesses has been provided separately to this Technical Note and is to be read alongside the Temporary Traffic Management proposals (Traffic Regulation Measures Plan Temporary Measures and Traffic Regulation Measures Plan Temporary Road Closure) [APP-012, APP-013].

11.1.4 A summary of the information provided on the site access plans drawings will be include and be provided in the next iteration of the Framework Construction Traffic Management Plan and Travel Plan that the Applicant proposes to submit at Deadline 3:

a. Scale provided on each individual site access drawing;
b. North arrow on each individual site access drawing;
c. Identified if the base mapping is either topographical or Ordnance Survey (OS);
d. On-site measurements recorded during site visit on appropriate drawings;
e. Swept path analysis for vehicle types including large cars, HGVs, a 1000T crane and a 46.63m AIL;
f. Indicative site access layouts including dimensions;

g. Visibility splay for the main staff access during the operational period;
h. Summary of the site access use during the construction period in terms of HGVs;
i. Reference make to the Traffic Regulation Measures (TRMs);
j. Included the Order Limits; and
k. Identified Highway Works on Elms Road and La Hogue Road. To accommodate two-way HGV movements

AIL Permitting

11.1.5 As per the examination question Q1.10.8, further information is provided below regarding government guidelines for AIL permitting:

a. The Government guidance (Ref 1-11) states that an 'abnormal load is a vehicle that has any of the following:
   i. A weight of more than 44,000kg
   ii. An axle load of more than 10,000kg for a single non-driving axle and 11,500kg for a single driving axle
   iii. A width of more than 2.9 metres
   iv. A rigid length of more than 18.65 metres

11.1.6 The Government guidance also identifies that depending on the type of load, advance warning may need to be given to the police, the highway authorities and bridge and structure owners.

a. The Suffolk Guidance (Ref 1-12) states that prior to movements of 'abnormal loads' notification must be made regarding the following:
   i. 'Weight:

- *For a gross weight of the loaded vehicle up to 80,000kgs, 2 clear working days' notice must be provided to Highway and Bridge Authorities*
- *For a gross weight of the loaded vehicle exceeding 80,000kgs and up to 150,000kgs, 5 clear working days' notice must be provided to Highway and Bridge Authorities and 2 clear workings days' notice must be provided to police authorities.*
- *For a gross weight of the loaded vehicle exceeding 150,000kgs, a Highways England BE16 Special Order form must be submitted with 8 weeks' notice and a notification must also be submitted to Highway, Bridge and Police Authorities giving 5 clear working days' notice.*

   ii. Width:

- *For a width of the loaded vehicle exceeding 3m and up to 5m, 2 clear working days' notice must be provided to Police Authorities*
- *For a width of the loaded vehicle exceeding 5m and up to 6.1m, a Highways England VR1 form must be submitted giving 10 days' notice and a notification must also be submitted to Police Authorities giving 2 clear working days' notice*
- *For a width of the loaded vehicle exceeding 6.1m, a Highways England BE16 Special Order form must be submitted with 8*

weeks' notice and a notification must also be submitted to Highway, Bridge and Police Authorities giving 5 clear working days' notice.

iii. Length:

- *For a rigid length exceeding 18.75m up to 27.4m, 2 clear working days' notice must be provided to Police Authorities*
- *For a vehicle combination exceeding 25.9m, 2 clear working days' notice must be provided to Police Authorities*
- *For a rigid length exceeding 30m, a Highways England BE16 Special Order form must be submitted with 8 weeks' notice and a notification must also be submitted to Highway, Bridge and Police Authorities giving 5 clear working days' notice.'*

b. The Cambridge guidance states that permission should be obtained before moving abnormal loads and contact with the abnormal loads officer would also be undertaken.

12 Highway Works

12.1.1 The main construction site accesses are located on Elms Road for Sunnica East and La Hogue Road for Sunnica West, where the main activity is forecast relating to HGVs. The LHAs raised concerns regarding the practicality, and safety, of two HGVs passing each other which could lead to damage of un-kerbed verges. Therefore, highway works along Elms Road and La Hogue Road have been identified to provide passing places during the construction period to accommodate two HGVs passing each other, with sufficient forward visibility between passing places which are spaced at a maximum distance of 150m. Access and egress of HGVs associated with Sunnica can be co-ordinated to ensure that they do not need to pass each other on La Hogue and Elms Road if necessary, however it is accepted that non-Sunnica HGVs may use the public highway. A summary of existing Monday to Friday HGV movements along Elms Road and La Hogue Road from the July 2022 traffic surveys is provided below.

a. Elms Road (west of the A11): An average of five eastbound HGVs, six westbound HGVs and 11 two-way HGVs per hour between 07:00-19:00.
b. La Hogue Road: An average of two northbound HGVs and one southbound HGV per hour between 07:00-19:00.

12.1.2 The highway works identified along Elms Road and La Hogue Road are provided in Appendix D.

12.1.3 Furthermore, it is highlighted that the F-CTMP & TP [AS-300, AS-301] includes a commitment to carry out before, during and after construction condition surveys to enable any damage caused by construction vehicles to be identified and then made good.

12.1.4 The swept path analysis of the two 16.5m articulated HGVs passing one another takes into consideration the passing of wingmirrors, local characteristics such as the verge, vegetation, trees and telephone poles as well as on site observations when identifying the locations of highway works along Elms Road and La Hogue Road. The areas of highway works are identified within the Order Limits.

12.1.5 The LHAs raised concerns with using OS mapping. The swept paths have either been undertaken on topographical mapping or OS mapping. On the individual drawings it is stated which mapping was available. To provide reassurances regarding the accuracy of the OS mapping, a site visit was undertaken in July 2022 by the Applicant where on-site measurements were taken at and around the site accesses.

12.1.6 The purpose of the highway work drawings are to agree in principle the general works required to accommodate two-way HGV movements along Elms Road and La Hogue Road. Detailed drawings regarding the highway works would be required to be approved under requirement 6 of the draft DCO before the highway works can be constructed. All proposed highways works are within the Order Limits, which, if approved, grants the Applicant powers to undertake the works.

12.1.7 A review of Elms Road between the Scheme's site accesses, and the A11 Northbound Off-Slip T-junction has been undertaken to identify possible locations of highway works to accommodate two-way HGV movements. Sheet number ACM-60589004-AMR-DR-0032 in Appendix D of this Technical Note identifies five small areas of highway works along Elms Road to enable sufficient passing to accommodate two-way HGV movements. The areas of highway works are identified within the Order Limits.

12.1.8 A review of La Hogue Road between the main site access and the A11 junction has been undertaken to identify possible locations of highway works to accommodate two-way HGV movements. Sheet number ACM-60589004-AMR-DR-0033 in Appendix D of this Technical Note identifies two areas of highway works along La Hogue Road to enable sufficient passing to accommodate two-way HGV movements. The areas of highway works are identified within the Order Limits.

13 Non-Material Change Report

13.1.1 The Non-Material Change (NMC) Report outlines the forecast impact on transport regarding the update to the Burwell National Guid Substation extension. A summary is outlined below which has been circulated via email to the LHAs in September 2022.

13.1.2 Should Option 3 proceed it will eliminate the need for Burwell National Grid Substation Extension Option 2 (accessed via Newnham Drove). The construction programme for the substations at Sunnica West Site A, Sunnica East Site A and Sunnica East Site B will be extended slightly to 50 weeks, from the current proposed 30 weeks as a result of the additional technical complexity of the 400kV configuration; however, this is still within the 24-month construction programme assessed within the ES.

13.1.3 Additional swept path analysis (vehicle tracking) for a worst case Abnormal Indivisible Load (AIL) to ensure that the electrical infrastructure required under Option 3 i.e. a 33kV/400kV transformer and shunt reactor (Sunnica East Site B only) can be safely transported to the onsite substations. During the construction programme the change will not require additional movements of HGVs to the Scheme; however, there will be a small redistribution of HGVs which would have previously accessed Burwell to access Sunnica West Site A. Within Table 2-1 in the F-CTMP & TP [APP-118], the forecast peak daily HGVs associated with the Burwell National Grid Extension is nine HGVs per day. This would result in an increase of circa one HGV per hour to Sunnica West Site A, at the peak of the construction period. The HGV vehicle route would be via the A11 and La Hogue Road. The increase in HGVs on the highway links is not expected to result in changing the category of effects presented in the ES.

13.1.4 The construction programme for the substations associated with Option 3 has been reviewed as part of the engineering design and is expected to be carried out over longer periods (up to 50 weeks) than assumed in the ES, to account for the additional complexity of the 400kV electrical configuration. Therefore, the forecast daily construction HGVs and staff presented in the ES represent a worst-case scenario. Notwithstanding this, as a result of a longer construction programme, the daily number of HGVs and staff on the local highway network are expected to be fewer than that assessed in the ES which reduces the forecast impact presented in the ES, as the same total number of movements are distributed over a longer period lowering the daily average.

13.1.5 During the decommissioning phase the proposed change will remain equal to or less than that forecast during the construction phase and the likely effects of the change outlined above. On this basis, the finding of Chapter 13, Transport and Access, of the ES [APP-045] remains the worst-case scenario with non-material change as a result of the distribution of HGVs during the construction phase.

13.1.6 As a result of the AIL swept path analysis, a minor change to the Order limits has been made at the Mildenhall Road/Ferry Lane T-junction to accommodate the over-sail of the 46.63m AIL trailer at the junction. Should

Option 3 proceed and eliminate the need for Burwell National Grid Substation Extension Option 2, it will decrease the number of Abnormal Indivisible Loads as a result of there being one less substation required for the Scheme, as well as fewer staff mini-bus movements to travel from the Sunnica West Site A staff car park to Burwell, therefore, these will be below those assessed in Chapter 13, Transport and Access, of the ES [APP-045]. Option 3 would also remove the requirement for the highway works on Weirs Drove and Newham Drove to facilitate site access to the Option 2 substation area.

13.1.7 As a result of the NMC report, the Transport and Access chapter of the ES [APP-045] and the Transport Assessment [APP-117] have not been updated as there are no changes to the conclusions in either of these documents. The F-CTMP & TP [APP-118] has been updated (see [AS-278 and 279]), however, no change has been identified to the control mechanisms within it. Further information regarding the update to the F-CTMP & TP [AS-278 and 279] document is provided below.

14 Update to Framework Construction Traffic Management Plan and Travel Plan

14.1.1 The purpose of the update to the F-CTMP & TP [AS-278, AS-279] was to reflect the NMC report regarding the Burwell Substation extension. A summary of the NMC report is provided above.

14.1.2 In addition, further swept path analysis (vehicle tracking) was undertaken of a 46.63m (long) x 3m (wide) Abnormal Indivisible Load (AIL) which is required to transport the 400KV transformer to the onsite substations. The swept path analysis has been undertaken to Sunnica West Site A, Sunnica East Site A and Sunnica East Site B. The vehicle profile for the AIL is provided in Figure 15-1 and the individual swept paths for the locations are identified in Figure 15-2 within the updated F-CTMP & TP [AS-278, AS-279].

15 Side Agreement for Highway Matters

15.1.1 The LHAs raised concerns regarding the legal framework in which alterations of streets, either temporary or permeant, would occur through implementation of the DCO. Therefore, Heads of Terms for a side agreement for highway matters have been issued on 26th August 2022 by the Applicant. This includes the following:

a. Street works;
b. Inspection of works;
c. Design of permanent and temporary alterations of streets;
d. Completion and maintenance of permanent alterations of streets;
e. Maintenance of temporary alternations to streets;
f. Design of the restoration of streets temporarily altered; and
g. Completion and maintenance of works to restore temporarily altered streets.

15.1.2 The items outlined in the bullet points above have been outlined within this Technical Note or within the Site Access Management Plans. The Applicant received the LHAs comments on the proposed Heads of Terms on 4 November 2022 and the Applicant remains optimistic that such an agreement address many of the LHAs concerns in relation to works to their assets.

16 References

Ref 1-1 https://infrastructure.planninginspectorate.gov.uk/projects/eastern/east-anglia-one-north-offshore-windfarm/?ipcsection=docs&stage=app&filter1=Environmental+Statement

Ref 1-2 https://infrastructure.planninginspectorate.gov.uk/projects/eastern/east-anglia-two-offshore-windfarm/?ipcsection=docs

Ref 1-3 https://infrastructure.planninginspectorate.gov.uk/projects/eastern/east-anglia-three-offshore-wind-farm/?ipcsection=docs

Ref 1-4 https://infrastructure.planninginspectorate.gov.uk/projects/eastern/hornsea-project-three-offshore-wind-farm/?ipcsection=docs&stage=app&filter1=Environmental+Statement

Ref 1-5 https://infrastructure.planninginspectorate.gov.uk/projects/west-midlands/meaford-energy-centre/?ipcsection=overview

Ref 1-6 https://infrastructure.planninginspectorate.gov.uk/projects/north-east/west-burton-c-power-station/?ipcsection=docs&stage=app&filter1=Environmental+Statement

Ref 1-7 https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/keadby-3-carbon-capture-power-station/?ipcsection=docs&stage=app&filter1=Environmental+Statement

Ref 1-8 https://infrastructure.planninginspectorate.gov.uk/projects/eastern/longfield-solar-farm/?ipcsection=docs&stage=app&filter1=Environmental+Statement

Ref 1-9 https://infrastructure.planninginspectorate.gov.uk/projects/south-east/cleve-hill-solar-park/?ipcsection=docs

Ref 1-10 https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/little-crow-solar-park/?ipcsection=docs&stage=app&filter1=Environmental+Statement

Ref 1-11 https://www.gov.uk/esdal-and-abnormal-loads

Ref 1-12 www.suffolk.gov.uk/roads-and-transport/lorry-management/apply-to-move-abnormal-loads/#tab3

Ref 1-13 https://www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/roads-and-pathways/heavy-or-abnormal-loads-on-the-highway/abnormal-loads-on-the-road

Appendix A : Link Sensitivity Plan

562500 565000 567500 570000

272500 270000 267500

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

LINK

Red Lodge Dumbbell Roundabouts
1 – Elms Road
2 – Newmarket Road (North)
3 – A11 Northbound On-Slip
4 – Newmarket Road (South)
5 – A11 Southbound Off-Slip
6 – Warren Road
7 – B1085 Turnpike Road
8 – A11 Southbound On-Slip
B1506 Bury Road / Herringswell Road / Gazeley Road
9 – B1506 Bury Road (East)
10 – Gazeley Road
11 – B1506 Bury Road (West)
12 – Herringswell Road
B1102 Mildenhall Road / B1085 Chippenham Road
13 – B1102 Mildenhall Road (East)
14 – B1085 Chippenham Road
15 – B1102 Mildenhall Road (West)
B1085 Chippenham Road / B1104
16 – B1085 Chippenham Road
17 – B1104
18 – B1085 High Street
B1104 Station Road / B1102
19 – B1104 Station Road
20 – B1102 (East)
21 – B1102 (South)
B1102 Mildenhall Road / B1104
22 – B1104 (South)
23 – B1102 Mildenhall Road
B1085 Dane Hill Road / Turnpike Road
24 – B1085 (North-West)
25 – B1085 Turnpike Road
26 – B1085 Dane Hill Road (South)
27 – A11 Southbound On-Slip
A142 Fordham Road / Landwade Road / Snailwell Road
28 – A142 Fordham Road (North)
29 – Snailwell Road
30 – A142 Fordham Road (South)
31 – Landwade Road
A14 Junction 37
32 – A142 Fordham Road (North)
33 – A14 Westbound Off-Slip
34 – A142 Fordham Road (South)
35 – A14 Eastbound Off-Slip

Purpose of Issue
FOR INFORMATION FOR LOCAL HIGHWAY AUTHORITIES

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
LINK LOCATIONS FOR TRANSPORT AND ACCESS ASSESSMENT

Drawn	Checked	Approved	Date
LVH	CCal	CCar	20/07/2022

AECOM Internal Project No.	Scale @ A3
60589004	1:27,152

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number	Rev
60589004	0

0 500 1,000m

NOTE: LINK LENGTHS HAVE BEEN IDENTIFIED TO THE NEAREST JUNCTION OR TO A DISTANCE OF 500M.

File Name:L:\PROJECTS\Sunnica Energy Farm\Examination\GIS\Workspaces\220718_Link Sensitivity (Frame).mxd

Appendix B : Elms Road/ A11 Northbound Off-Slip T-Junction Preliminary Modelling Results

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: A11_Elms_Road_T-Junction_Modelling.j9
Path: \\na.aecomnet.com\lfs\EMEA\StAlbans-UKSTA1\Legacy\DP\PROJECTS\Sunnica Energy Farm\Examination\A11 Off-Slip-Elms Road Modelling
Report generation date: 17/10/2022 12:49:09

Summary of junction performance

	AM 0600-0700					PM 1900-2000				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023+Dev									
Stream B-C	1.2	12.96	0.56	B	42 % [Stream B-C]	0.0	5.66	0.02	A	109 % [Stream B-A]
Stream B-A	0.1	7.99	0.12	A		0.4	10.40	0.27	B	
Stream C-B	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Elms Road / A11 NB off-slip_Sunnica East_Con Workers Only
Location	
Site number	
Date	11/12/2019
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	Laura.VanHeezik [UKSTA1LT44646]
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	mph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023+Dev	AM 0600-0700	Elms Road / A11 NB off-slip	ONE HOUR	05:45	07:15	15	✓

2023+Dev, AM 0600-0700

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.32	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	42	Stream B-C

Arms

Arms

Arm	Name	Description	Arm type
A	Elms Road (East)		Major
B	A11 NB off-slip		Minor
C	Elms Road (West)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.75			100.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	3.25	3.25	100	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	575	0.101	0.256	0.161	0.366
1	B-C	704	0.104	0.264	-	-
1	C-B	632	0.237	0.237	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	198	100.000
B		ONE HOUR	✓	372	100.000
C		ONE HOUR	✓	52	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	0	198
	B	54	0	318
	C	52	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.56	12.96	1.2	3.2	B	292	438
B-A	0.12	7.99	0.1	0.5	A	50	74
C-A						48	72
C-B	0.00	0.00	0.0	~1	A	0	0
A-B						0	0
A-C						182	273

Main Results for each time segment

05:45 - 06:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	239	60	652	0.367	237	0.0	0.6	8.631	A
B-A	41	10	530	0.077	40	0.0	0.1	7.342	A
C-A	39	10			39				
C-B	0	0	597	0.000	0	0.0	0.0	0.000	A
A-B	0	0			0				
A-C	149	37			149				

06:00 - 06:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	286	71	642	0.445	285	0.6	0.8	10.066	B
B-A	49	12	522	0.093	48	0.1	0.1	7.607	A
C-A	47	12			47				
C-B	0	0	590	0.000	0	0.0	0.0	0.000	A
A-B	0	0			0				
A-C	178	44			178				

06:15 - 06:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	350	88	628	0.558	348	0.8	1.2	12.812	B
B-A	59	15	510	0.117	59	0.1	0.1	7.991	A
C-A	57	14			57				
C-B	0	0	580	0.000	0	0.0	0.0	0.000	A
A-B	0	0			0				
A-C	218	55			218				

06:30 - 06:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	350	88	628	0.558	350	1.2	1.2	12.963	B
B-A	59	15	510	0.117	59	0.1	0.1	7.994	A
C-A	57	14			57				
C-B	0	0	580	0.000	0	0.0	0.0	0.000	A
A-B	0	0			0				
A-C	218	55			218				

06:45 - 07:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	286	71	642	0.446	288	1.2	0.8	10.214	B
B-A	49	12	522	0.093	49	0.1	0.1	7.614	A
C-A	47	12			47				
C-B	0	0	590	0.000	0	0.0	0.0	0.000	A
A-B	0	0			0				
A-C	178	44			178				

07:00 - 07:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	239	60	652	0.367	240	0.8	0.6	8.766	A
B-A	41	10	530	0.077	41	0.1	0.1	7.356	A
C-A	39	10			39				
C-B	0	0	597	0.000	0	0.0	0.0	0.000	A
A-B	0	0			0				
A-C	149	37			149				

Queue Variation Results for each time segment

05:45 - 06:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.57	0.55	1.00	1.40	1.45			N/A	N/A
B-A	0.08	0.00	0.00	0.08	0.08			N/A	N/A
C-B	0.00	0.00	0.00	0.00	0.00			N/A	N/A

06:00 - 06:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.79	0.18	0.93	1.40	1.46			N/A	N/A
B-A	0.10	0.00	0.00	0.10	0.10			N/A	N/A
C-B	0.00	0.00	0.00	0.00	0.00			N/A	N/A

06:15 - 06:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.22	0.03	0.27	1.22	1.75			N/A	N/A
B-A	0.13	0.03	0.26	0.46	0.49			N/A	N/A
C-B	0.00	0.00	0.00	0.00	0.00			N/A	N/A

06:30 - 06:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.24	0.03	0.28	1.24	3.15			N/A	N/A
B-A	0.13	0.03	0.25	0.45	0.48			N/A	N/A
C-B	0.00	0.00	0.00	0.00	0.00			N/A	N/A

06:45 - 07:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.82	0.08	0.82	1.08	1.60			N/A	N/A
B-A	0.10	0.00	0.00	0.10	0.10			N/A	N/A
C-B	0.00	0.00	0.00	0.00	0.00			N/A	N/A

07:00 - 07:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.59	0.05	0.48	1.38	1.50			N/A	N/A
B-A	0.08	0.00	0.00	0.08	0.08			N/A	N/A
C-B	0.00	0.00	0.00	0.00	0.00			N/A	N/A

Appendix C : Updated Transport Assessment Figures

560000 565000 570000

275000

270000

265000

Label	Name
1	Red Lodge Dumbbell Roundabout (North)
2	Red Lodge Dumbbell Roundabout (South)
3	B1506 Bury Road/Herringswell Road/Gazeley Road
4	Dane Hill/Turnpike Road Roundabout
5	B1102 Mildenhall Road/B1085 Chippenham Road
6	B1085 Chippenham Road / B1085 High Street / B1104
7	B1104 Station Road / B1102 Junction
8	B1102 Mildenhall Road / B1104 Junction
9	A142 / Snailwell Road / Landwade Road Roundabout
10	A14 J37

0 500 1,000 1,500 2,000m

N

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\ES\Chapter 13 - Transport\Transport Assessment\210707_SunnicaEnergyFarm_TA_Figure3_LocalTrafficDataLocations.mxd

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

The Order limits

Local Junction

NOTE:
Document Reference: EN010106/APP/6.3
APFP Regulation: 5(2)(a)

Purpose of Issue
FOR DCO SUBMISSION

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 3
LOCAL TRAFFIC DATA LOCATIONS

Drawn	Checked	Approved	Date
LL	CC	NC	20/10/2021

AECOM Internal Project No.	Scale @ A3
60589004	1:42,000

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number	Rev
60589004_ES_TA_003	0

565000

570000

270000

265000

Sunnica East Site Main Access

Sunnica West Site Main Access

1

2

3

4

5

6

7

8

0 500 1,000 1,500 2,000m

N

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- The Order limits
- Main Access Point
- WebTRIS Data Collection Site

NOTE:
Document Reference: EN010106/APP/6.3
APFP Regulation: 5(2)(a)

Purpose of Issue
FOR DCO SUBMISSION

Client
SUNNICA LTD

Project Title
sunnica energy farm

Drawing Title
FIGURE 4
WEB TRIS DATA
COLLECTION LOCATIONS

Drawn	Checked	Approved	Date
LL	CC	NC	20/10/2021

AECOM Internal Project No.	Scale @ A3
60589004	1:25,000

AECOM
Unit 1 Wellbrook Court,
Girton,
Cambridge, CB3 0NA
United Kingdom
Telephone (01223) 488000
www.aecom.com

Drawing Number	Rev
60589004_ES_TA_004	0

File Name:\\eu.aecomnet.com\UKUKCBG1\Jobs\PR-334327_Sunnica_Energy_Farm\400_Technical\434_Technical Disciplines\17. GIS\Layout\ES\Chapter 13 - Transport\Transport Assessment\210707_SunnicaEnergyFarm_TA_Figure4_WebTRISDataCollections.mxd

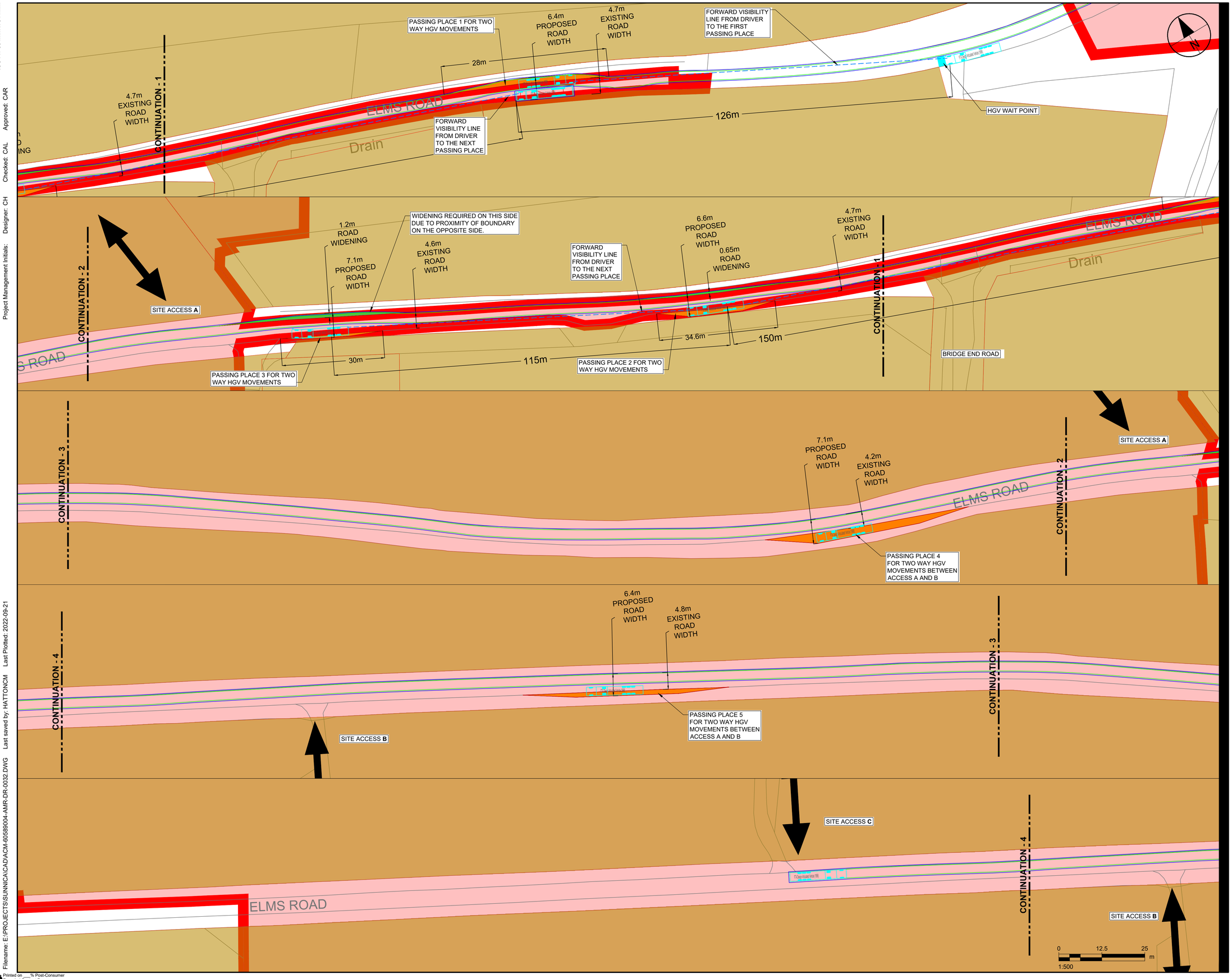
Appendix D Highway Works

ISO A1 594mm x 841mm

Project Management Initials: Designer: CH Checked: CAL Approved: CAR

Last saved by: HATTONCM Last Plotted: 2022-09-21

Filename: E:\PROJECTS\SUNNICA\CAD\ACM-60589004-AMR-DR-0032.DWG



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AECOM

PROJECT

sunnica energy farm

CLIENT

SUNNICA ltd

CONSULTANT

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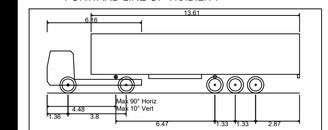
+44(0)1727 535099 fax
www.aecom.com

NOTE

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE
2. ALL JUNCTION LAYOUTS AREA INDICATIVE
3. DESIGN BASED ON OS WITH OS LAND REGISTRY DATA
4. ORDER LIMITS ARE TO THE OUTER EDGE OF THE RED LINE, WHICH IS AS PER PUBLISHED IN THE DCO DOCUMENTATION

KEY

- ORDER LIMITS
- PRIVATE LAND
- PASSING PLACE
- ROAD WIDENING OPPOSITE THE PASSING BAY
- HGV WAITING POINT
- SOUTHBOUND HGV TRAVEL WITH WING MIRROR CLEARANCE (GREEN LINE VEHICLE BODY, BLUE LINE WING MIRRORS)
- SITE ACCESS JUNCTION
- FORWARD LINE OF VISIBILITY



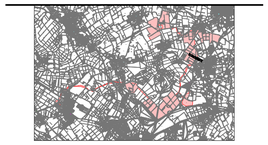
FTA Design Articulated Vehicle (1998)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	2022-09-30	FIRST ISSUE

KEY PLAN



PROJECT NUMBER

60589004

SHEET TITLE

SUNNICA EAST SITE B,
ELMS ROAD
PASSING BAYS

SHEET NUMBER

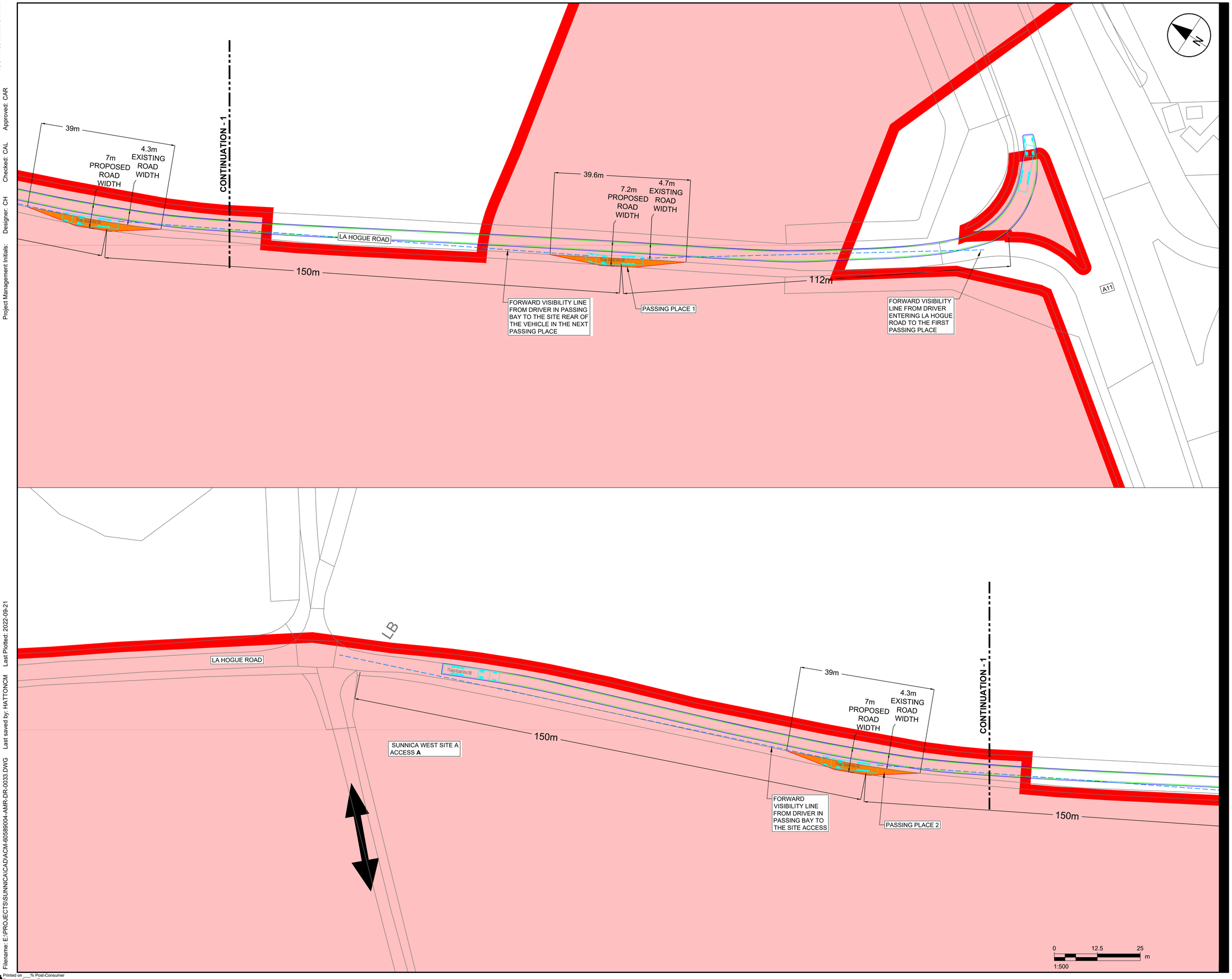
ACM-60589004-AMR-DR-0032

ISO A1 594mm x 841mm

Project Management Initials: Designer: CH Checked: CAL Approved: CAR

Last saved by: HATTONCM Last Plotted: 2022-09-21

Filename: E:\PROJECTS\SUNNICA\CAD\ACM-60589004-AMR-DR-0033.DWG



AECOM

PROJECT

sunnica energy farm

CLIENT

SUNNICA ltd

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www.aecom.com

NOTE

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KEY

- ORDER LIMITS
- PASSING PLACE
- OS LINES
- SOUTHBOUND HGV TRAVEL WITH WING MIRROR CLEARANCE (GREEN LINE VEHICLE BODY, BLUE LINE WING MIRRORS)
- SITE ACCESS JUNCTION
- FORWARD LINE OF VISIBILITY

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ISSUE/REVISION

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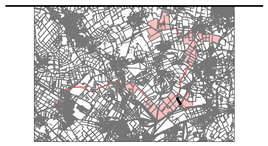

PROJECT NUMBER

60589004

SHEET TITLE

SUNNICA EAST SITE B,
LA HOGUE ROAD, PASSING BAYS
2 WAY HGV

SHEET NUMBER

ACM-60589004-AMR-DR-0033