SUNNICA ENERGY FARM

Preliminary Environmental Information Report

Chapter 13: Transport and Access

Sunnica Ltd

AUGUST 2020

Table of Contents

Tables

13 Transport and Access

13.1 Introduction

13.1.1 This chapter reports the preliminary findings of an assessment of the likely significant effects on traffic and transport as a result of the Scheme during construction. The magnitude of change associated with operation and decommissioning have not been assessed within this chapter, as explained in the Transport Chapter of the EIA Scoping Report included in ***PEI Report Volume 2: Appendix 1A***.

13.1.2 Background traffic flows cannot be accurately forecast for over 40 years into the future and therefore the transport impact of the decommissioning phase cannot be accurately assessed. It is not anticipated at this point in time that the impacts associated with decommissioning would be worse than during the construction period. On this basis as the construction period is considered to have the greatest change on the surrounding transport network, only the construction phase has been assessed. The effect of the decommissioning phase is anticipated to be the same or less than this, and therefore also not significant. A Decommissioning Environmental Management Plan will be prepared prior to the decommissioning phase as outlined in ***Chapter 3: Scheme Description***.

13.1.3 The assessment has been undertaken with reference to relevant policy and guidance documents outlined below. In addition, a separate preliminary Transport Assessment (TA), included in in ***PEI Report Volume 2: Appendix 13A*****,** has been undertaken that considers the general potential transport impacts of the Scheme. Where relevant, the preliminary TA report is cross-referenced within this chapter.

13.1.4 This chapter is supported by the following figures:

- Figure 13-1: Existing Public Rights of Way.
- Figure 13-2: Public Rights of Way Closed During Construction.
- Figure 13-3: Public Rights of Way Post Construction.

13.2 Legislation and Planning Policy

National Planning Policy

13.2.1 As outlined in Section **1.3** of ***Chapter 1: Introduction***, the EIA for the Scheme must have regard to the relevant policies of the NPPF and relevant NPSs.. Key aspects of the NPPF and relevant NPSs, which have been considered during the development of this chapter, are outlined below.

- NPS EN-1 (Ref. 13-1) with particular reference to paragraphs 5.13.3, 5.13.4 and 5.13.5, which state that if a project is likely to have significant transport implications, a Transport Assessment, Travel Plan and additional transport infrastructure should be provided to mitigate the impacts of the proposed development; and

- NPPF (Ref 13-2), with particular reference to Paragraph 108 Part C, which states that any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree. Paragraphs 108 to 110. Also refer to the need to prioritise pedestrian and cycle movements followed by access to high quality public transport, to reflect the importance of creating a well-designed place. Paragraph 111 states that a development that generates a significant amount of movement should be supported by a Transport Statement (TS) or TA and should be required to provide a TP.

Planning Practice Guidance (2014)

13.2.2 In 2014, the Department for Communities and Local Government (DCLG) launched a website containing national planning practice guidance. The website contains guidance on a range of planning topics such as design, Local Plans, Neighbourhood Plans and TPs / TAs. The section on '*Travel plans, transport assessments and statements in decision-taking'* (ID 42 – https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements) (Ref. 13-3) provides advice on when TAs and TSs are required and what they should contain.

13.2.3 Paragraph 014 states*: "the need for, scale, scope and level of detail required of a TA or TS should be established as early in the development management process as possible as this may therefore positively influence the overall nature or the detailed design of the development".*

13.2.4 *"Key issues to consider at the start of preparing a TA or TS may include:*

- *The planning context of the development proposal;*
- *Appropriate study parameters (i.e. area, scope and duration of study);*
- *Assessment of public transport capacity, walking/cycling capacity and road network capacity;*
- *Road trip generation and trip distribution methodologies and/ or assumptions about the development proposal;*
- *Measures to promote sustainable travel;*
- *Safety implications of development; and*
- *Mitigation measures (where applicable) – including scope and implementation strategy."*

13.2.5 Paragraph 015 sets out what information should be included in TAs, which includes:

- *"Information about the proposed development, site layout, (particularly proposed transport access and layout across all modes of transport);*
- *Information about neighbouring uses, amenity and character, existing functional classification of the nearby road network;*
- *Data about existing public transport provision, including provision / frequency of services and proposed public transport changes;*
- *A qualitative and quantitative description of the travel characteristics of the proposed development, including movements across all modes of*

transport that would result from the development and in the vicinity of the site;

- *An assessment of trips from all directly relevant committed development in the area (i.e. development that there is a reasonable degree of certainty will proceed within the next 3 years);*
- *Data about current traffic flows on links and at junctions (including by different modes of transport and the volume and type of vehicles) within the study area and identification of critical links and junctions on the highways network;*
- *An analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent 3-year period, or 5-year period if the proposed site has been identified as within a high accident area;*
- *An assessment of the likely associated environmental impacts of transport related to the development, particularly in relation to proximity to environmentally sensitive areas (such as air quality management areas or noise sensitive areas);*
- *Measures to improve the accessibility of the location (such as provision/enhancement of nearby footpath and cycle path linkages) where these are necessary to make the development acceptable in planning terms;*
- *A description of parking facilities in the area and the parking strategy of the development;*
- *Ways of encouraging environmental sustainability by reducing the need to travel; and*
- *Measures to mitigate the residual impacts of development (such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads."*

Local Planning Policy

- East Cambridgeshire District Local Plan Adopted April 2015 with particular reference to Policy COM 7: Transport Impact;
- East Cambridgeshire District Council SPD Renewable Energy Development (Commercial Scale) October 2014, with particular reference to paragraph 8.3 part 3 which states that where renewable energy development is proposed which is likely to have significant transport implications (e.g. level of traffic movements) a Transport Statement will be required;
- Forest Heath District Council Core Strategy Adopted 2010, with particular reference to Policy CS12: Strategic Transport Improvement and Sustainable Transport which seeks to minimise the magnitude of change of traffic on the environment. and Spatial Objective T1: to ensure that new development is located where there are the best opportunities for sustainable travel and the least dependency on car travel; and
- Forest Heath and St Edmundsbury Councils: Joint Development Management Policies Document (last updated February 2015) (Ref 13-

5) , with particular reference to Policy DM44: Rights of Way; DM45: Transport Assessments and Travel Plans which states that for major development and / or where a proposed development is likely to have significant transport implications, the Council requires the applicant to submit a Transport Assessment appropriate to the scale of the development and the likely extent of transport implications as well as a Travel Plan; and DM46: Parking Standards.

Industry Guidance

13.2.6 This PEI Report transport chapter follows the principles of the methodology set out in the IEMA Guidelines for the Environmental Assessment of Road Traffic (Ref 13-6) when determining the magnitude of change of the Scheme. Further details of the guidelines contained in this document are set out in the 'Assessment Methodology' section of this chapter.

13.3 Assessment Assumptions and Limitations

13.3.1 The following assumptions and limitations are reflected in this assessment:

- *The global pandemic disrupted the normal traffic flows and patterns on the UK road network, preventing traffic count surveys outside of school holidays for this PEI Report. Therefore, no recent traffic surveys have been undertaken on the local highway network to obtain baseline flows for total vehicles and HGVs. The most recent traffic surveys were undertaken on the local highway network in 2016. This traffic data forms part of the Local Plan evidence base as set out in 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref 13-7). TEMPro growth factors were applied to the 2016 data to account for regional traffic growth. The use of this data and approach was agreed with both SCC, CCC and Highways England during scoping discussions and set out in the scoping opinions responses.*
- *The baseline traffic data has limited coverage in the area surrounding the DCO Site. This data is limited to the A11 / Newmarket Road / Warren Road Dumbbell Roundabouts and the Dane Hill Road Roundabout.*
- *No baseline data was available regarding the local pedestrian and cycle usage. Given the nature of the local routes and area, it is expected the pedestrian and cycle flows to be generally low.*

13.3.2 Notwithstanding the limitations regarding traffic data, it is considered the methodology and conclusions to this chapter are robust for where baseline traffic data was available. Where baseline traffic data was unavailable, professional judgement as been applied to form a conclusion.

13.4 Assessment Methodology

13.4.1 This section of the chapter presents the following:

- *Identification of the information sources that have been consulted throughout preparation of this chapter;*
- *The methodology behind the assessment of traffic and transport effects, including the criteria for the determination of the significance of the receptor and the magnitude of change from the baseline condition;*

- *An explanation as to how the identification and assessment of potential traffic and transport effects has been reached; and*
- *The significance criteria and terminology for assessment of the residual effects to traffic and transport.*

Study Area

13.4.2 To determine the study area beyond the proposed DCO Site, for the purposes of assessing effects on vehicle travellers, reference has been made to the IEMA Guidelines (Ref 13-6) which provides guidance on examining the environmental effects of development in terms of traffic and transportation. The study area has been identified to cover a broad area surrounding the Site which includes the likely area for significant effects to occur which includes the available traffic data on the strategic and local highway networks. However, baseline traffic data was unavailable for Chippenham, which could be an area for traffic surveys to be undertaken in the future, when traffic levels return to normality and are acceptable to the local authorities, for the DCO application. It should be noted since the pandemic it has not been possible to collect traffic data.

13.4.3 The IEMA guidelines (Ref 13-6) identify two rules in identifying potential links for analysis:

- ***Rule 1****: include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and*
- ***Rule 2****: include any other specifically sensitive areas (e.g. accident black spots, conservation areas, hospitals, links with high pedestrian flows etc) where traffic flows have increased by 10% or more.*

13.4.4 Based on this, for links where baseline traffic data was available, links where the traffic flows increase by 30% or more within the AM and PM Scheme peak hours as a result of the construction of the Scheme in 2023 have been assessed within this chapter and are set out in paragraph 13.4.5. The AM and PM Scheme peak hours assessed are 06:00 to 07:00 and 19:00 to 20:00 respectively which reflects the arrival and departure times of the staff. These hours represent the Scheme peaks and not the road network peaks. This represents a worst-case approach in relation to percentage impact as the percentage increase over the baseline will be greatest during these hours as the background traffic flows would be lower than the network peak hours. Where baseline traffic data is unavailable, comments are made based on the development trip generation and without baseline traffic data there is no guarantee the impact would be less than 30%.

13.4.5 The analysis identified the following links to be included in the study area:

- *A11 southbound off-slip at Red Lodge;*
- *A11 southbound on-slip at Red Lodge;*
- *A11 northbound off-slip / Elms Road T-junction;*
- *Elms Road;*
- *La Hogue Road;*

- *B1085 Dane Hill Road;*
- *B1085 (North of the Dane Hill Road Roundabout); and*
- *Newmarket Road.*

13.4.6 Chippenham and Red Lodge have also been included in the study area due to the close proximity to the Scheme.

13.4.7 The A142/Landwade Road/Snailwell Road junction has been excluded from the study area as during the initial scoping it was not believed there would be a significant impact and there was not available baseline traffic data.

13.4.8 Also, the A14 Junction 38 has not been included within the study area given the arrangement of the junction consists of on-slip and off-slip roads. Due to the merge/diverge nature of the junction capacity modelling cannot be undertaken. At the initial scoping it was not considered there is an existing capacity issue which could be exacerbated with the forecast vehicles associated with the Proposed Development. Local Plan transport evidence shows that the road markings require updating by the highway authority as a result of the Local Plan site allocation.

Sources of Information

13.4.9 To inform the assessment of the Scheme, information from a number of sources has been used. The sources will have been used are set out below.

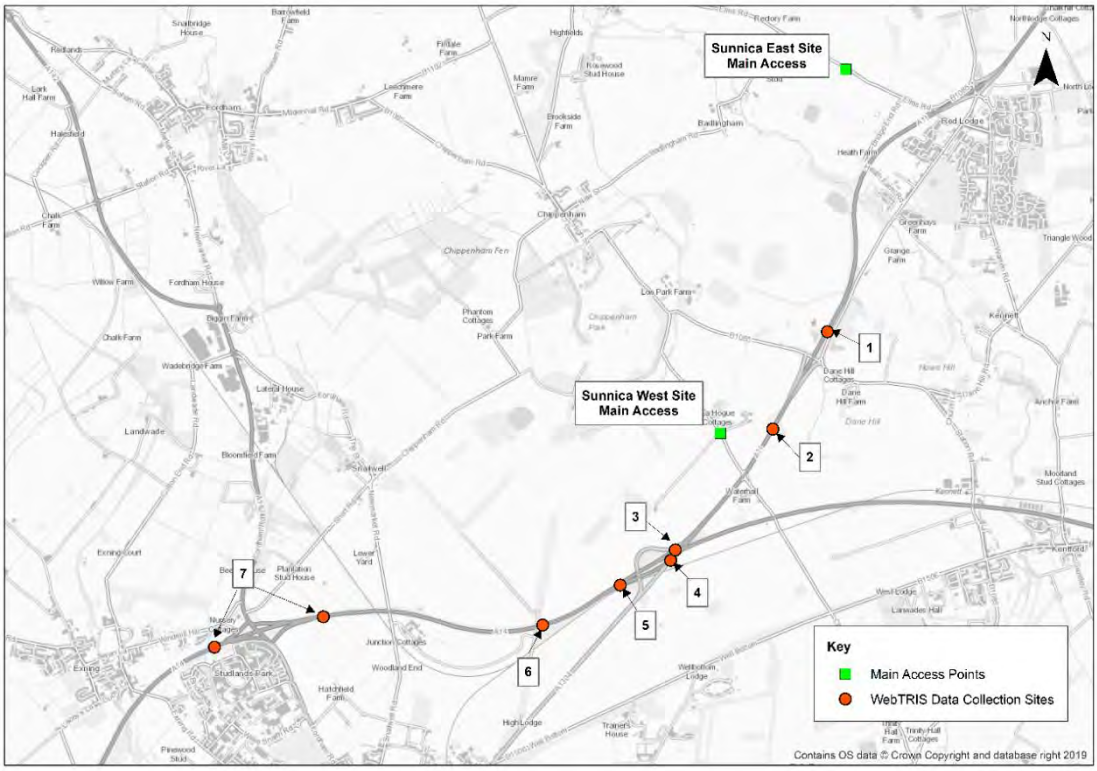
- *Personal Injury Accident data;*
- *Average car occupancy;*
- *WebTRIS Traffic Data; and*
- *Local traffic data, which was included within the 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref 13-7).*

13.4.10 Personal Injury Accident (PIA) data has been obtained from Suffolk County Council (SCC) and Cambridgeshire County Council (CCC).

13.4.11 Due to the rural location of the Scheme, it is anticipated that the majority of staff will drive or be a vehicle passenger to / from the site. For the purpose of this assessment, it is assumed that the staff vehicles will have an average vehicle occupancy of 1.5 persons. The average vehicle occupancy has been identified from previous AECOM experience in Suffolk and the experience of the Applicant on other solar projects in the UK. It is expected that the level of staff vehicle occupancy will be monitored and managed as set out in a TP, which is expected to be produced for the DCO application.

13.4.12 The WebTRIS dataset was utilised to obtain 2019 traffic flows for those roads under control of Highways England, which includes the A11 and A14. **Plate13-1** identifies the WebTRIS data locations utilised to obtain baseline traffic flows on the A11 and A14.

Plate13-1: WebTRIS data collection locations



13.4.13 Traffic flow data was extracted from WebTRIS for each site for September 2019 as this was the most recent complete month of data available for the highway peak hours of 08:00 to 09:00 and 17:00 to 18:00 and for the Scheme peak hours of 06:00 to 07:00 and 19:00 to 20:00. Construction is proposed to occur Monday to Friday, therefore the average Monday to Friday 12-hour traffic flows (07:00 to 19:00) have been obtained from WebTRIS. Further information regarding the WebTRIS traffic data is provided in ***PEI Report Volume 2: Appendix 13A*, Sub-Appendix A**.

13.4.14 The 2019 baseline traffic flows for the local highway network have been taken from the 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref 13-7) which was prepared by AECOM for the Forest Heath Local Plan assessment. Further information regarding the local highway traffic data is provided in the preliminary TA in ***PEI Report Volume 2: Appendix 13A***.

Assessment Methodology

13.4.15 The methodology used when assessing the potential transportation magnitude of change of the proposed Scheme on Vehicle Travellers, Non-Motorised Users (NMU) and Public Transport Users has been based on IEMA guidance (Ref 13-6) in combination with professional judgement.

13.4.16 In accordance with the IEMA guidance (Ref 13-6) for assessing the environmental impacts of road traffic, the following criteria has been considered in this assessment:

- *Severance;*
- *Driver delay;*

- *Pedestrian delay;*
- *Pedestrian and cyclist amenity;*
- *Fear and Intimidation;*
- *Accidents and safety; and*
- *Hazardous loads.*

13.4.17 The significance of effect is determined through consideration of two elements: the magnitude of change and the sensitivity of the receptor. The following sections outline the approach that have been used to determine these factors.

13.4.18 The methodology generally follows that identified in ***PEI Report Volume I Chapter 5: EIA Methodology*** and identifies both the sensitivity of receptor and the magnitude of change, with the relationship of these two variables allowing the identification of the significance of effect, in line with Table 13-1. However, in some cases it has been necessary to consider potential effects across the DCO Site extents as a whole or use professional judgment to consider the effects qualitatively. Where this was the case, it is identified in the analysis.

13.4.19 The overall effect will be determined by measuring the magnitude of change against criteria including: the type and sensitivity of the receptor; and the type of change. Magnitude of change is defined as beneficial or adverse, with effects further defined using the following classifications identified in the guidance:

- *Minor – slight, very short, or highly localised change of no significant effect;*
- *Moderate – limited change (by extent, duration or magnitude) which may be considered significant; and*
- *Major – considerable change (by extent, duration or magnitude) of more than local significance, or in breach of recognised acceptability, legislation, policy or standards.*

13.4.20 The IEMA guidelines (Ref 13-6) state that the magnitude of each change should be determined as the predicted deviation from the baseline conditions. This will be done for the construction phase, as the operational effects have been scoped out and the decommissioning phase is expected to be no worse than the construction phase.

13.4.21 The IEMA guidelines (Ref 13-6) suggest that junction assessments are undertaken to assess **Driver Delay**. However, due to the limitation of the traffic flow data, junction assessments have not been undertaken. This is also not considered necessary given the arrival and departure times of staff are forecast to be outside the AM and PM peak hours. **Driver Delay** has been determined through the analysis of the changes in traffic flows compared to the baseline traffic flows which is contained within the TA. As outlined in the IEMA guidance, increases in traffic flows of 30%, 60% and 90% have been considered to result in a low, medium and high change. On links where baseline traffic data was unavailable professional judgement has been used to assess the significance of change based on the number of additional

vehicles. This is considered to be applicable to all modes of transport using the public highway, namely cars, motorcycles, pedal cycles and buses.

13.4.22 **Severance** is defined in the guidelines (Ref 13-6) as the *"perceived division that can occur within a community when it becomes separated by a major traffic artery".* The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impede pedestrian access to essential facilities. IEMA guidelines (Ref 13-6) suggest that a 30%, 60% and 90% increase in traffic flows will result in a low, medium, and high change in severance respectively, as outlined in the IEMA guidance.

13.4.23 **Pedestrian and Cycle Delay** is considered to be affected by the changes in volume, composition or speed of traffic, in terms of their respective changes on the ability of people to cross the roads. In general, increases in traffic levels and/or traffic speeds are likely to lead to greater increases in pedestrian delay. IEMA guidelines (Ref 13-6) suggest that a 30%, 60% and 90% increase in traffic flows will result in a low, medium, and high change in pedestrian and cycle delay respectively, as outlined in the IEMA guidance.

13.4.24 **Pedestrian and Cycle Amenity** is broadly defined as *"the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and pavement width / separation from traffic".* The guidance suggests that a tentative threshold for judging the significance of changes in pedestrian and cycle amenity would be where the traffic flow is halved or doubled. However, to be consistent with the pedestrian and cycle delay assessment, the 30%, 60% and 90% increase in traffic flows has been applied which will result in a low, medium, and high change.

13.4.25 **Fear and Intimidation** is *"dependent on the volume of traffic, its HGV composition, and its proximity to people or the lack of protection caused by such factors as narrow pavement widths".* The guidance (Ref 13-6) suggests that an average hourly vehicle flow over an 18 hour day of 600-1200 vehicles has a moderate change upon fear and intimidation, 1200-1800 vehicles a great change, and above 1800 vehicles an extreme change. Outlined in the IEMA guidance, consideration has also been given specifically to HGV flows, with a 30%, 60% and 90% increase in HGV flows considered to result in a low, medium, and high change respectively. The assessment also qualitatively considers the changes of other relevant factors such as speed, proportion of vulnerable road users, footway widths, lighting and security measures (e.g. CCTV).

13.4.26 In terms of **Severance**, **Pedestrian Delay**, **Pedestrian / Cycle Amenity** and **Fear and Intimidation**, the links within easy walking (2km) / cycling (5km) distance of the Sunnica East Sites A and B and Sunnica West Sites A and B will be used as receptors. For the construction changes, the sensitivity of pedestrian routes and cycle routes is based on a qualitative assessment of the 2019 baseline scenario, taking into consideration the importance and attractiveness of the route and the destinations served. As outlined in the IEMA guidance, the thresholds are defined as:

- *Neutral – Rural road with no pedestrian / cycle facilities provided;*

- *Low Sensitivity – Strategic vehicular route in a rural setting with pedestrian / cycle facilities;*
- *Medium Sensitivity – Main vehicular route with pedestrian / cycle facilities provided in built up area; and*
- *High Sensitivity – Lightly trafficked route provided in a town/village centre setting.*

13.4.27 The significance of effects on bus users has been qualitatively assessed. Given the distance from the Site and low frequency of services, it is not considered appropriate to assess the impact on the local rail services as staff are unlikely to travel to the Site via rail. The following has been considered:

- *Frequency of bus services and subsequent consideration of capacity;*
- *Potential changes on journey times; and*
- *Change in access to bus services.*

13.4.28 A detailed assessment of **Accidents and Safety** has been carried out by the examination of road traffic accident data for the most recent five-year period available. This analysis has been included in the preliminary TA and undertaken to highlight if there are any existing safety issues on the local road network which may be exacerbated by the Scheme.

13.4.29 With regard to **Hazardous and Dangerous Loads**, paragraph 4.44 of the IEMA guidance (Ref 13-6) indicates that *"the Statement should include a risk or catastrophe analysis to illustrate the potential for an accident to happen and the likely effect of such an event".* Analysis of the road network within the study area indicates that there are no particular features, such as a significant vertical drop immediately beyond the carriageway, which would suggest that the transfer of materials poses a particular risk beyond that which would be expected on the general highway network. It is concluded that the changes of Hazardous and Dangerous Loads do not warrant further consideration in the PEI Report.

13.4.30 In order to determine the effect on specific receptors, both the sensitivity of receptors and the magnitude of change, as outlined above, are considered. Table 13-1, which is taken from the IEMA guidance (Ref 13-6). This table has been utilised as it specifically relates to the assessment of traffic, shows the matrix that has been used to determine the Significance of Effect.

Table 13-1: Matrix for determining effect category

Magnitude of Change	Receptor Sensitivity			
	High	Medium	Low	Neutral
Major Adverse	Major Adverse	Major Adverse	Moderate Adverse	Neutral
Moderate Adverse	Major Adverse	Moderate Adverse	Minor Adverse	Neutral
Minor Adverse	Moderate Adverse	Minor Adverse	Minor Adverse	Neutral
Neutral	Neutral	Neutral	Neutral	Neutral

Magnitude of Change	Receptor Sensitivity			
	High	Medium	Low	Neutral
Minor Beneficial	Moderate Beneficial	Minor Beneficial	Minor Beneficial	Neutral
Moderate Beneficial	Major Beneficial	Moderate Beneficial	Minor Beneficial	Neutral
Major Beneficial	Major Beneficial	Major Beneficial	Moderate Beneficial	Neutral

13.5 Stakeholder Engagement

13.5.1 An EIA Scoping Report was submitted in March 2019, with a Scoping Opinion received from The Planning Inspectorate in April 2019.

13.5.2 Table 13-2 below covers the transport related comments and the responses to these in this PEI Report.

Table 13-2 Main matters raised during consultation

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
The Planning Inspectorate	The operational phase of the proposed Scheme does not need to be assessed as the increases in traffic and likely to be minimal.	The operational phase of the proposed Scheme has not been assessed.	Section 13.8
	It was agreed that predicting traffic levels over this timeframe is unpredictable. The ES should assess impacts from changes in transport and access during the decommissioning phase where significant effects are likely.	The impact of decommissioning has not been considered within this assessment given that it is likely to be 40 to 50 years post construction and traffic flows, advances in transport and removal of equipment will have altered such that it is not possible to predict the change at this stage. It was agreed with the Suffolk, Cambridgeshire and Highways England highway authorities that this would not be considered.	Section 13.8
	The ES should include assessment of impacts of the A11 northbound off slip and priority junction on the B1085 Elms Road.	The additional vehicles that are forecast to be added onto the A11 northbound off-slip and priority junction on Elms Road have been reviewed.	Section 13.8
	The ES should explain how the Sunnica West sites are accessed and any traffic movements between the sites should be assessed where significant impacts will occur.	The Access Strategy in ***PEI Report Volume 2: Appendix 13A***, sub-Appendix I details how each of the sites will be accessed during the construction period. A mini-bus service will be in place to transport construction staff	***PEI Report Volume 2: Appendix 13A*** sub-Appendix I and Section 13.7

Consultee	Main matter raised	How has the concern been addressed	Location of response in chapter
		between the sites and is outlined in the preliminary TA.	
	The ES should set out the study area for assessment based on industry guidance.	The study area for the assessment has been set out in section 13.4	Section 13.4
	The ES should assess any significant effects associated with traffic generation from construction staff travelling to the site of the Scheme due to the lack of public transport facilities.	An assessment has been undertaken on the traffic generated by the construction staff arriving and departing from the sites.	Section 13.8
East Cambridgeshire District Council	The District Council recommends that the A142/ Landwade Road/Snailwell Road Roundabout and junction 38 on the A14 should be assessed due to existing capacity issues.	An assessment on the additional vehicles added to Junction 38 on the A14 has been undertaken.	Section 13.8
	The impact of decommissioning should be considered as part of the assessment due to the parts of the Scheme having a relatively short lifespan.	The impact of decommissioning has not been considered within this assessment given that the it is likely to be 40 to 50 years post construction and traffic flows, advances in transport and removal of equipment cannot be predicted at this stage. It was agreed with the highway authorities that this would not be considered.	Section 13.8
Norfolk County Council	The impact of the Scheme on the A11 and A14 should be considered due to the fact that the two roads play a significant part in Norfolk's economy.	The impact of the Scheme on both the A11 and A14 is considered within the assessment.	***PEI Report Volume 2: Appendix 13A*** sub-Appendix I and Section 13.7
Public Health England	There is the potential for non-motorised user (NMU) to be impacted through the loss or change in formal Public Rights of Way (PRoW), open space and the existing road network. Additional facilities and enhancement of existing facilities should be provided where necessary to encourage travel by modes other than the private car.	The impact on NMU's has been considered within the assessment. Changes to PRoW are set out with additional routes provided in the preliminary TA.	Sections 13.6 and 13.8
Suffolk County Council & West Suffolk Council	The highway authority asked for consideration to be given to: • Mitigation works • Impacts of decommissioning	These items were discussed at a meeting with all highway authorities and are assessed within the preliminary TA ***PEI Report Volume 2: Appendix 13A*** sub-Appendix I and this chapter.	***PEI Report Volume 2: Appendix 13A*** sub-Appendix I and Chapter 13

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
	• SCC Local Transport Plan • Scope of assessment • Assessment years • Guidance used for assessment • Zone of influence • Study area • PRoW • NMUs • Traffic distribution • Scheme vehicular trips • Modelling thresholds • Abnormal Indivisible Loads (AILs)		
Cambridgeshire County Council (Mobilising Local Energy Investment)	It will be helpful to get an understanding of the scale of jobs that will be created during construction to estimate their impact on travelling to site in addition to the HGVs.	The number of workers to be employed during construction and operation phases of the Scheme has been identified and the impact of their travel to the Site assessed.	***PEI Report Volume 2: Appendix 13A*** sub-Appendix I and Chapter 13
Cambridgeshire County Council (Major Development Transport Assessment Team)	Any planning application submitted would need to be supported by a transport assessment.	A preliminary Transport Assessment has been prepared which assesses the impact of the Scheme on the Strategic Road Network and local road network.	***PEI Report Volume 2: Appendix 13A***
Highways England	Specifically, we would be concerned, not only, about how any cables are going to cross the Strategic road network but also construction traffic. Therefore, we would expect a Transport Assessment to be carried out in accordance with best practice and guidance laid out in Circular Roads 02/13 and Highways England's Planning Protocol. The content of which should be discussed with the Highway Authorities before any work is carried out.	A preliminary Transport Assessment has been prepared which assesses the impact of the Scheme on the Strategic Road Network. The scope of assessment was discussed with the Highways England.	***PEI Report Volume 2: Appendix 13A***

Source: Scoping Opinion: Proposed Sunnica Energy Farm, April 2019

13.6 Baseline Conditions

13.6.1 This section reviews the transport facilities and networks provided in the vicinity of the sites by foot, cycle, public transport and via the strategic and local highway network.

13.6.2 The Sunnica East Site A is located approximately 3.5km east of Mildenhall, 0.5km south-east of Isleham and 0.6km south-west of West Row. Sunnica East Site B is located approximately 1.5km south-east of Mildenhall, 1km east of Freckenham and immediately south of Worlington. The Sunnica West Site A is located approximately 7km to the east of Burwell, immediately north of the A14 at Newmarket. Sunnica West Site B is approximately 5.5km to the east of Burwell and 0.5km north of Snailwell. The Sites are connected with cable routes and with the existing Burwell National Grid Substation located on Newnham Drove.

Existing Baseline

Walking & Cycling

13.6.3 The Scheme is located in a rural area with limited footways and pedestrian and cycle facilities in the area. This is due to the rural nature of the surrounding local roads; however, these are lightly trafficked. There are several PRoW crossing and connecting the sites, which are illustrated in Figure 13-1 included in the ***PEI Report Volume 3***. A higher resolution image of the existing PRoW network is provided in ***PEI Report Volume 2: Appendix 13A*, Sub-Appendix A**.

13.6.4 There are three PRoWs (W-257/002/0, W-257/002/X, and W-257/007/0) located within the boundary of the Sunnica East Site A, which run from Mortimer Lane in the south to Beck Road in the north.

13.6.5 There are two PRoWs located within the boundary of Sunnica East Site B. PRoW (W-257/003/0) runs along the south-western boundary 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.

13.6.6 There are no PRoWs situated within the boundary of the Sunnica West Site A or B itself. Adjacent to Sunnica West Site A there is Snailwell 5 bridleway (PRoW 204/5) which runs along the south-west boundary of that site. As well as Snailwell 1 footpath (PRoW 204/1) which crosses the land to the north-west of the Sunnica West Site A boundary.

13.6.7 There is one footpath 49/7 that intersects Grid Connection Route A, located to the south of the Sunnica East Site B, which runs between Red Lodge and Chippenham.

13.6.8 There are six PRoWs that intersect Grid Connection Route B. Towards Snailwell footpath PRoW 204/1 also connects Snailwell with Chippenham Park. Heading west from Sunnica West Site B, footpath 92/19 runs from through agricultural fields between Fordham and Snailwell. Then footpath 35/10 and 35/11 which runs between Wicken and Burwell passing through several agricultural fields. There are also two PRoWs 35/7 and 35/17 running between Burwell and Reach, again through agricultural land.

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

13.6.10 There are no on or off-road cycling facilities in the vicinity of the Sites however the roads surrounding each Site are generally lightly trafficked and therefore could encourage cycling.

Public Transport

13.6.11 Figures showing the local bus and rail services and routes are provided in ***PEI Report Volume 2: Appendix 13A*, Sub-Appendix B**.

Bus

13.6.12 The closest bus stops to the Sunnica West Sites are located in Snailwell on Newmarket Road, where a pair of bus stops are provided. These are approximately 600m to the west of Sunnica West Site A and 750m to the south of Sunnica West Site B. The bus stops are served infrequently by bus services 203/204, operated by Lord's Travel.

13.6.13 The nearest stops to Sunnica Site A are located over a 1km to the north east in Isleham. The bus stops are served infrequently by bus services 203/204, operated by Lord's Travel. The bus stop nearest to Sunnica East Site B is located on B1085 Turnpike Road in Red Lodge approximately 500m to the south-east. The bus stop is served by bus route 16/16A and is operated by Stephensons. To the north Worlington is served by the bus service 16/16A as well as bus services 357 and 956. A pair of bus stops are located in Freckenham to the west of the Sunnica East Site B and are located at the junction of B1102/The Street. The bus stops are served by bus services 357 and 956 and is operated by Mulleys Coaches.

13.6.14 Table 13-3 provides a summary of average weekday bus frequencies serving bus stops closest to the site.

Table 13-3: Frequency of local bus services

	Service	*Route*	*Bus Stop*	*Off-Peak[1] 06:00-08:00*	*AM Peak 08:00-09:00*	*Inter-peak[1] 09:00-17:00*	*PM Peak 17:00-18:00*	*Off-Peak[1] 18:00-20:00*
Sunnica West A and B and Sunnica East A	203	Newmarket - Isleham	Snailwell, Newmarket Road	0	0	1	0	0
	204	Isleham - Newmarket	Snailwell, Newmarket Road	1	0	0	0	1
Sunnica East B	16/16A	Bury St Edmunds - Mildenhall - Newmarket	Red Lodge, Turnpike Road	2	1	1	2	1
	357	Bury St Edmunds - Red Lodge - Mildenhall	Freckenham, B1102 The Street	0	0	1	0	0
	956	Lakenheath - Mildenhall - Bury St Edmunds	Freckenham, B1102 The Street	1	0	1	0	0

[1]Average number of buses per hour
Timetable recorded on 07/01/2020

National Rail

13.6.15 The two closest train stations are located in Kennett and Newmarket, and both stations are on the line between Ipswich and Cambridge.

13.6.16 Kennett railway station is located, approximately 7km and 3km from Sunnica East Sites A and B respectively, and 2 and 3km from Sunnica West Site and Sunnica East Site respectively. Newmarket railway station is located approximately 2km from the Sunnica West Site A and 6km from Sunnica West Site B. Kennett railway station provides 12 car parking spaces and 20 cycle spaces. Newmarket station provides 11 car parking spaces with 1 for blue badge holders and 10 cycle spaces. Both railway stations are served by bus service 16/16A with bus stops located adjacent to the stations.

13.6.17 Table 13-4 identifies the departure times of trains at Kennett and Newmarket in the AM peak period (06:00-09:00) and in the PM peak hour (17:00-20:00).

Table 13-4: Frequency of train services

Station	*Destination*	*AM Peak*	*PM Peak*
Kennett	Ipswich	06:00 07:04 07:43	17:07 18:10 18:37
	Cambridge	07:10	17:16 18:16 19:15
Newmarket	Ipswich	07:02 08:05	17:08 18:08 19:07
	Cambridge	06:09 07:15 07:52	17:19 18:19 19:18

Recorded: 07/01/2020

Source: Greater Anglia Timetable 7: Ipswich to Cambridge and Peterborough. Valid from 15 December 2019

Highway Network

Local Highway

13.6.18 Sunnica West Site A is adjacent to the A14 and A11 on the southern and eastern edge. To the north Chippenham Road connects to A142 and Chippenham Park and is a single carriageway road. To the south-west of Sunnica West Site A, Newmarket Road / Snailwell Road runs in a north-south direction. On the Snailwell Road section there is a 3.9m height restriction located to the south of the A14 due to the railway line which passes over the road.

13.6.19 Sunnica West Site A is bounded by La Hogue Road to the north-east and provides access to the La Hogue Farm Shop. It is linked to the A11 to the south and to the B1085 to the north. Sunnica West Site A is bounded by the

A14 and A11 to the south and east respectively. Chippenham Road is located to the north-west of the Sunnica West Site A which is a single carriageway road with a 60mph speed limit.

13.6.20 Snailwell Road is located to the south of Sunnica West Site B. It is a single carriageway road with a 7.5t weight restriction on the bridge over the River Snail. The A142 Fordham Road runs in a north-south direction to the west of Sunnica West Site B; this is a wide single carriageway road with 60mph speed limit.

13.6.21 Newmarket Road connects B1102 and A11, which runs in a north-east direction and is located to the south-west of Sunnica West Site B. It is a narrow single carriageway with 60 mph speed limit.

13.6.22 Sunnica East Site A is located to the east of the B1104 and north of B1102. The site is located approximately 0.5km from Isleham. Beck Road runs through the centre of the western part of Sunnica East Site A which is a single carriageway road with 60mph speed limit. An unclassified road linking West Row with the B1102 Mildenhall Road at Freckenham provides the border to the east is a narrow single carriageway road with 60mph speed limit.

13.6.23 The Sunnica East Site B is located to the south of the B1102 Freckenham Road / Mildenhall Road which runs to the west. Newmarket Road runs in a north-south direction to the east of the Sunnica East Site B with a small section of the Sunnica East Site B located to the east which is accessed from Golf Links Road.

13.6.24 Elms Road is partially located within the Sunnica East Site B and runs in a broad northwest to southeast direction linking Church Lane in Freckenham with Elms Road and the A11 near Red Lodge. The majority of Elms Road is a narrow single carriageway road, with a general width of approximately 5m or less, which is bound by hedgerows. National speed limit applies on this road. Between the Newmarket Road/Elms Road roundabout and approximately 180m to the west of the A11 northbound off-slip. There are signs informing that Elms Road is not suitable for heavy goods vehicles (HGV) located at the junction with the A11 northbound off-slip for vehicles and Elms Road/Church Lane in Freckenham.

13.6.25 Sunnica East Site A and Site B, and Sunnica West Site A and Site B will be connected by the cable route. The cable route crosses several roads including Weirs Drove, Burwell, the B1102 Ness Road, the A142 Fordham Road, Chippenham Road, the unclassified road, which bounds the Sunnica West Site A to the north-east, the B1085 (between the A11 and Chippenham) and Elms Road. The existing Burwell National Grid Substation is located on Newnham Drove, off Weirs Drove in Burwell.

Strategic Highway

13.6.26 The A11 and A14 form part of Strategic Road Network (SRN) and are in close proximity to both the Sunnica West and East sites. The A11 runs in a northeast-southwest direction between London and Norwich to the east of the Sites. The A11 is a dual carriageway with two lanes in each direction to the north of A14 Junction 38.

13.6.27 There are three junctions along the A11 between the A11/A14 J38 and Red Lodge. The junction closest to the A11/A14 J38 provides a northbound on-slip and off-slip to/from the A11 provides access to the La Hogue Road. The A11/B1085 junction has a northbound off-slip and a southbound on-slip. At Red Lodge, there is a two-lane northbound off-slip from the A11 that connects to Elms Road. The A11 northbound can be accessed via a slip road from the B1085/Newmarket Road Roundabout, whereas the A11 southbound off-slip and southbound on-slip are accessed via the Newmarket Road/Warren Road roundabout.

13.6.28 The A14 has three lanes in each direction to the south of Junction 38 along the Newmarket Bypass, with no hard shoulder and the national speed limit applies. The A14/A11 J38 provides connections between A14 eastbound to the A11 northbound and A11 southbound to the A14 westbound. To the south of Junction 38 the A11 becomes the A1304 providing a route into Newmarket.

13.6.29 To the west of the Sites, the A142 is a single carriageway that runs in the north-south direction where the national speed limit applies. The A14 and A142 meet at the Junction 37, which is a grade-separated junction permitting all movements between the A14 and A142 in the form of two staggered priority T-junctions.

13.6.30 Baseline traffic flows were obtained for the strategic highway network from WebTRIS fixed traffic counters maintained by Highways England. The most up to date 2019 was used at the time of writing. In addition, it is considered 2020 traffic flow data would be unreliable due to the impact of Covid-19. These flows are presented in Table 13-5.

Table 13-5: 2019 Baseline traffic flows – strategic highway (Monday to Friday average)

	06:00-07:00		08:00-09:00		17:00-18:00		19:00-20:00		12-Hours	
	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound
A11 (North of B1085)	817	1,586	1,003	1,971	2,175	1,395	1,109	755	17,721	18,152
A11 (North of La Hogue Road)	878	1,725	1,117	2,228	2,459	1,489	1,229	805	19,664	19,661
A11 to A14 & A1304 Slip Road (J38)	N/A	1,581	N/A	1,860	N/A	1,243	N/A	676	N/A	16,981
A14 to A11 Slip Road (J38)	708	N/A	1,118	N/A	2,088	N/A	885	N/A	16,420	N/A
A14 (J38)	1,441	1,499	2,040	1,889	4,292	1,207	1,959	552	33,573	15,821

A14 (Between J37 and J38)	1,480	3,059	2,063	3,779	4,328	2,458	1,981	1,239	34,016	32,981
A14 J37	1,390	2,982	1,939	3,767	4,190	2,436	2,041	1,232	33,140	32,681

Local Highway

13.6.31 The 2019 baseline traffic flows for the local highway network have been taken from the 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref. 13-5) which was prepared by AECOM for the Forest Heath Local Plan assessment. Traffic surveys were carried out at junctions across the Forest Heath area on Tuesday 28th June 2016 between 07:00 hours and 10:00 hours and between 16:00 hours and 19:00 hours. The coverage of this traffic data is limited and does not cover the entire local highway network around the extent of the DCO Site. Further surveys may need to be undertaken in the future as there is slight gap in the data for the roads in Chippenham and therefore this is a gap. A historic search of data has been undertaken and no data is available. It should be noted due to the pandemic, no traffic surveys could be undertaken, and local highway authorities are unsure as to when they can recommence. This is due to the uncertainness regarding the return to pre-pandemic traffic conditions. Until such time, it is considered the most appropriate approach to use the available historic data. The relevant locations where traffic data was collected include the A11 / Newmarket Road / Warren Road Dumbbell Roundabouts and the Dane Hill Road Roundabout.

13.6.32 The peak hours identified within the assessment for the 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref. 13-5) are 08:00 to 09:00 and 16:45 to 17:45. As the construction traffic associated with the Scheme is anticipated to occur outside of the highway peak hours, 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref. 13-5) traffic flows have been converted to 06:00 to 07:00 and 19:00 to 20:00 traffic flows. The WebTRIS average Monday to Friday traffic flows outlined in Table 13-5 were used to calculate conversion factors from 08:00-09:00 to 06:00-07:00 and 17:00-18:00 to 19:00-20:00 for each site and direction of travel. The average of these factors for each location was used to calculate the total conversion factors which are outlined in Table 13-6.

Table 13-6: Peak hour traffic flow conversion factors

Time	Conversion Factors
08:00-09:00 to 06:00-07:00	0.77
16:45-17:45 to 19:00-20:00	0.50

13.6.33 The resultant 2019 AM peak hour and PM peak hour baseline traffic flows that have been used for this assessment can found in ***PEI Report Volume 2: Appendix 13A*, Sub-Appendix C**.

13.6.34 Table 13-7 below outlines the resultant 2019 baseline traffic flow for key links on the local highway network for the assessment hours.

Table 13-7: 2019 Peak hour local baseline traffic flows

Location	AM Peak (0600-0700)		PM Peak (1900-2000)	
	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound
A11 SB On-Slip (Red Lodge)	N/A	269	N/A	102
A11 SB Off-Slip (Red Lodge)	N/A	164	N/A	118
A11 NB On-Slip (Red Lodge)	186	N/A	122	N/A
Warren Rd	318	188	139	217
Newmarket Rd	305	260	201	254
Elms Rd	35	123	29	149
B1085 (North of Dane Hill Rd Roundabout)	115	345	111	191
B1085 Dane Hill Rd	172	264	156	113
Turnpike Rd	214	121	77	146

Road Safety

13.6.35 Personal Injury Accident (PIA) data on the surrounding highway network has been obtained from SCC and CCC for the most recent five years (60 months) available at the time of request, which included incidents that occurred between January 2014 and August 2019. Due to CCCs arrangement with the police, contributory factors are not available, however STATS 21 codes were provided for the data provided by SCC and therefore contributory factors could be determined. ***PEI Report Volume 2: Appendix 13A*, Sub-Appendix B** identifies the locations of all the incidents recorded in this time period.

13.6.36 Ten incidents have been excluded from the analysis as the primary contributory factor was found to be driver intoxication and is therefore an unrelated safety condition of the road. Excluding these incidents, there were a total were a total of 125 PIAs, of which 101 were classified as slight, 21 serious, and three were classified as fatal as shown in Table 13-8.

Table 13-8: Summary of location and severity of incidents

	Incident Severity				Annual Frequency			
Location	Slight	Serious	Fatal	Total	Slight	Serious	Fatal	Total
Junctions								
B1104 / B1102	2	1	0	**3**	0.4	0.2	0.0	**0.6**

	Incident Severity				Annual Frequency			
Location	**Slight**	**Serious**	**Fatal**	**Total**	**Slight**	**Serious**	**Fatal**	**Total**
B1085 / La Hogue Road	2	1	0	**3**	0.4	0.2	0.0	**0.6**
A11 Off-Slip/Elms Road	2	1	0	**3**	0.4	0.2	0.0	**0.6**
Warren Rd/Hundred Acre Way/Carnation Way	2	0	0	**2**	0.4	0.0	0.0	**0.4**
A142 Fordham Rd/A14 EB Off-Slip	5	1	0	**6**	1.0	0.2	0.0	**1.2**
A142 Fordham Rd/A14 WB off-slip	6	1	0	**7**	1.2	0.2	0.0	**1.4**
A142/Windmill Hill	1	1	0	**2**	0.2	0.2	0.0	**0.4**
Links								
Snailwell Road	4	0	0	**4**	0.8	0.0	0.0	**0.8**
B1102 Mildenhall Road	3	1	0	**4**	0.6	0.2	0.0	**0.8**
A11 NB between B1085 and La Hogue Road	0	2	0	**2**	0.0	0.4	0.0	**0.4**
Soham Road & Newmarket Road	3	1	0	**4**	0.6	0.2	0.0	**0.8**
A142 between Fordham Road and Newmarket Road	1	1	0	**2**	0.2	0.2	0.0	**0.4**
Isleham Road	4	0	0	**4**	0.8	0.0	0.0	**0.8**
A11 between B1085 and Red Lodge	2	0	0	**2**	0.4	0.0	0.0	**0.4**
Dane Hill Road	0	1	1	**2**	0.0	0.2	0.2	**0.4**
B1102 Carter Street	4	1	0	**5**	0.8	0.2	0.0	**1.0**
Chippenham Road	1	1	0	**2**	0.2	0.2	0.0	**0.4**
B1085 Turnpike Road	2	0	0	**2**	0.4	0.0	0.0	**0.4**
B1104 Station Road	3	0	0	**3**	0.6	0.0	0.0	**0.6**
A11 NB (South of Red Lodge)	6	1	0	**7**	1.2	0.2	0.0	**1.4**

	Incident Severity				Annual Frequency			
Location	**Slight**	**Serious**	**Fatal**	**Total**	**Slight**	**Serious**	**Fatal**	**Total**
A11 SB (South of Red Lodge)	1	1	0	**2**	0.2	0.2	0.0	**0.4**
A11 NB (North of Red Lodge)	2	0	0	**2**	0.4	0.0	0.0	**0.4**
A11 SB (North of Red Lodge)	1	0	0	**1**	0.2	0.0	0.0	**0.2**
B1085 Turnpike Road	2	0	0	**2**	0.4	0.0	0.0	**0.4**
B1102	0	1	1	**2**	0.0	0.2	0.2	**0.4**
A14 EB (East of J37)	4	1	0	**5**	0.8	0.2	0.0	**1.0**
A14 WB (East of J37)	4	0	0	**4**	0.8	0.0	0.0	**0.8**
A14 WB (West of J37)	0	1	0	**1**	0.0	0.2	0.0	**0.2**
A14 WB Off-Slip	0	0	0	**0**	0.0	0.0	0.0	**0.0**
A142 Fordham Rd (South of A14)	3	0	0	**3**	0.6	0.0	0.0	**0.6**
A142 Fordham Rd (North of A14)	3	1	0	**4**	0.6	0.2	0.0	**0.8**
A142 Fordham Rd between A14 slips	4	0	0	**4**	0.8	0.0	0.0	**0.8**
Other Locations	24	1	1	**26**	4.8	0.2	0.2	**5.2**
TOTAL	**101**	**21**	**3**	**125**	**-**	**-**	**-**	**-**

13.6.37 Table 13-8 indicates that one fatal incident was recorded on Dane Hill Road. As the PIA data supplied by the police to CCC does not detail contributory factors, it is not possible to identify the cause of the fatal incident. One fatal incident was recorded on the B1102; the contributory factors included injudicious actions, driver error and behaviour or inexperience.

13.6.38 A total of seven incidents were recorded at the A142 Fordham Road / A14 WB-off slip junction, an average of 1.4 incidents per year, six of which were classified as slight and one as serious.

13.6.39 A total of seven incidents were recorded at the A11 northbound (south of Red Lodge junction), with an average of 1.4 incidents per year, six of which were classified as slight and one as serious. It was found there were no common contributory factors at these locations.

13.6.40 Based on the information available the PIA data provided did not show incidents occurring frequently at any particular location.

13.6.41 In addition, the data has been analysed to determine whether any modal trends exist in the incidents around the site, focusing in particular upon vulnerable road users, pedestrians, cyclists, motorcyclists, children and the elderly. The results of this analysis are discussed below and summarised in Table 13-9.

Table 13-9: Summary of PIAs involving vulnerable road users by location

Location	Pedestrians	Cyclists	Motorcyclists	OAPs	Children
Junctions					
B1104 / B1102	0	0	1	1	0
B1085 / La Hogue Road	0	0	0	0	0
A11 Off-Slip/Elms Road	0	0	1	0	0
Warren Rd/Hundred Acre Way/Carnation Way	0	0	0	0	0
A142 Fordham Rd/A14 EB Off-Slip	0	0	0	4	1
A142 Fordham Rd/A14 WB off-slip	0	1	0	2	0
A142/Windmill Hill	0	0	0	1	0
Links					
Snailwell Road	1	0	0	0	0
B1102 Mildenhall Road	2	0	1	1	0
A11 NB between B1085 and La Hogue Road	0	0	1	0	0
Soham Road & Newmarket Road	0	0	1	0	0
A142 between Fordham Road and Newmarket Road	0	0	1	0	0
Isleham Road	1	0	0	0	1
A11 between B1085 and Red Lodge	0	0	0	0	2
Dane Hill Road	0	0	0	0	0
B1102 Carter Street	2	1	0	0	0
Chippenham Road	0	0	0	0	0

Location	Pedestrians	Cyclists	Motorcyclists	OAPs	Children
B1085 Turnpike Road	0	0	1	0	0
B1104 Station Road	0	0	0	0	0
A11 NB (South of Red Lodge)	0	0	0	1	0
A11 SB (South of Red Lodge)	0	0	0	1	0
A11 NB (North of Red Lodge)	0	0	0	1	0
A11 SB (North of Red Lodge)	0	0	0	0	0
B1085 Turnpike Road	1	0	0	1	1
B1102	0	1	0	2	0
A14 EB (East of J37)	0	0	1	0	0
A14 WB (East of J37)	0	0	0	0	0
A14 WB (West of J37)	0	0	0	0	0
A14 WB Off-Slip	0	0	0	0	0
A142 Fordham Rd (South of A14)	0	0	0	1	0
A142 Fordham Rd (North of A14)	0	0	0	3	0
A142 Fordham Rd between A14 slips	0	0	1	1	0
Other Locations	1	5	5	7	1
TOTAL	**8**	**8**	**14**	**27**	**6**

13.6.42 In total 63 vulnerable users were involved in the incidents, eight pedestrian, eight cycle, 14 motorcycles, 27 Old Age Pensioners (OAPs), and six children. No incidents were recorded in the immediate vicinity of the accesses to Sunnica East Site A and B and Sunnica West Site A and B within the most recent five years of PIA data obtained.

13.6.43 Five vulnerable road users (four OAPs and one child) were recorded to be involved in incidents on the A142 Fordham Rd/A14 EB Off-Slip. Driver error or reaction was recorded as the main contributory factor for these incidents.

13.6.44 Based on the information available the PIA data provided did not show vulnerable user incidents occurring at any particular location.

13.6.45 Overall, with the data available the PIA analysis does not indicate a particular safety concern that needs to be considered as part of the Scheme proposals.

Future Baseline

Strategic Highway

13.6.46 WebTRIS data and local highway traffic flow data has been utilised to forecast the 2023 highway baseline conditions. Further details are provided in the preliminary TA with a summary provided below.

13.6.47 The peak construction year of the Scheme is forecast to be 2023. TEMPro 7.2 (Version 7.2, dataset 72) has been used to identify suitable growth rates to factor the 2019 WebTRIS traffic flows to provide future year flows that consider potential growth in background traffic flows. The extent of the highway network falls within two geographical areas, 'East Cambridgeshire 007' and 'Forest Heath 006', with the road types identified as rural trunk roads as 'A' roads. The resultant growth rates for 2019 to 2023 are identified in Table 13-10.

Table 13-10: TEMPro growth factors

Area	Time Period	Growth Factor
East Cambridgeshire 007	Off-Peak 00:00-06:59 &19:00-23:59	1.0791
Forest Heath 006	Off-Peak 00:00-06:59 &19:00-23:59	1.0835
East Cambridgeshire 007	Average Weekday	1.0876
Forest Heath 006	Average Weekday	1.0949

13.6.48 The 2019 base flows have been factored by the TEMPro growth rates to obtain the 2023 base flows for the adjacent strategic highway network which are provided in Table 13-11.

Table 13-11: 2023 Baseline traffic flows for strategic highway network

Location	AM Peak Hour (06:00-07:00)		PM Peak Hour (19:00-20:00)		12-Hour (07:00-19:00)	
	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound
A11 (North of B1085)	885	1,718	1,201	818	19,402	19,874
A11 (North of La Hogue Road)	951	1,869	1,332	872	21,530	21,527
A11 to A14 & A1304 Slip Road (J38)	N/A	1,713	N/A	732	N/A	18,593
A14 to A11 Slip Road (J38)	767	N/A	959	N/A	17,978	N/A
A14 (J38)	1,561	1,624	2,123	599	36,760	17,322

Location	AM Peak Hour (06:00-07:00)		PM Peak Hour (19:00-20:00)		12-Hour (07:00-19:00)	
	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound
A14 (Between J37 and J38)	1,604	3,314	2,146	1,343	37,244	36,111
A14 J37	1,500	3,218	2,203	1,330	36,043	35,544

Local Highway

13.6.49 Using the conversion factors stated earlier in Table 13-6 for the links where data was available the 2023 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref. 13-5) traffic flows have been converted from 08:00-09:00 traffic flows to 06:00-07:00 and 17:00-18:00 to 19:00-20:00 traffic flows. The resultant 2023 baseline traffic flow diagram for the local highway network can be found in ***PEI Report Volume 2: Appendix 13A***, **Sub-Appendix A**. Table 13-12 summarises the 2023 baseline traffic flows for key links on the local highway network.

Table 13-12: 2023 Peak hour local baseline traffic flows

Location	AM Peak (0600-0700)		PM Peak (1900-2000)	
	North-bound / East-bound	South-bound / West-bound	North-bound / East-bound	South-bound / West-bound
A11 SB On-Slip (Red Lodge)	N/A	343	N/A	126
A11 SB Off-Slip (Red Lodge)	N/A	204	N/A	170
A11 NB On-Slip (Red Lodge)	300	N/A	158	N/A
Warren Rd	476	247	190	292
Newmarket Rd	426	296	242	296
Elms Rd	38	151	31	184
B1085 (North of Dane Hill Rd Roundabout)	128	394	119	249
B1085 Dane Hill Rd	278	312	195	163
Turnpike Rd	264	149	96	172

13.7 Embedded Design Mitigation

HGVs

13.7.1 To reduce the potential impact of the HGV deliveries, the arrival and departure times will be manged to minimise the number of HGVs travelling

to the Site during the highway peak hours. In addition, the HGVs can be delayed in the PM to avoid being released from the Site during the highway peak hour. Adequate space will be made available within the Site to ensure no overspill queueing is caused onto the surrounding road network, which would be outlined in the Construction Traffic Management Plan (CTMP). Management of HGVs within the site and being let onto the highway network will be managed through a CTMP (a Framework CTMP is provided in ***PEI Report Volume 2: Appendix 13B***) and secured in a requirement attached to the DCO. The HGV deliveries, including any which could be defined as AILs, will be routed onto the strategic road network (A11 / A14) to travel to / from the site; more detail on the routes can be found in the Access Strategy in ***PEI Report Volume 2: Appendix 13A***, **Sub-Appendix I**. The Police would also be given advanced notification under the Road Vehicle Authorisation of Special Types Order 2003.

13.7.2 Information provided by the Applicant at present suggests that none of the deliveries made by HGVs would fall within the classification of being an AIL, however management of these vehicles will be made through the CTMP prepared by the contractor / applicant which would restrict their movements to outside of the network peak periods.

Staff Vehicles

13.7.3 The following paragraphs within this section are outlined in the preliminary TA and Framework CTMP.

13.7.4 To reduce the potential impact of vehicles associated with the staff, they will be encouraged to lift share with colleagues to reduce the number of vehicles travelling to/from the Site each day. Staff will also be encouraged to use the strategic road network in the vicinity of the Site such as the A11, A14 and A142 to travel to/from the Site where appropriate to minimise the amount of construction traffic using local roads through the nearby villages, in line with the routes identified in the access strategy for the HGVs.

13.7.5 The parking strategy seeks to minimise the potential impact of the vehicle trips associated with the staff, in particular on the surrounding villages. Two evenly split temporary car parking areas are proposed to be used throughout the construction period, one within Sunnica West Site A and the other in Sunnica East Site B, which are accessed as follows:

- *Sunnica West Site A – to be accessed off an unclassified road which links to the A11 as well as a number of unclassified roads within the rural area to west of the A11.*
- *Sunnica East Site B – to be accessed off the B1085, which heads north from its junction with the A11 near to Red Lodge.*

13.7.6 During arrival of staff at both sites the car parking areas will be managed to ensure the efficient arrival of staff and assignment of the car parking spaces where vehicles will be routed to the most appropriate location based on their arrival time. The car parking management will ensure staff entering the car parking areas are undertaken in a timely and safe manner. Given the working patterns identified it is not expected there will be the requirements for car parking management outside of the hour preceding the staff start time, which is identified as 07:00. As a result, it is anticipated a one-way system will be

in place within the two car parks with a single point providing the entry/egress onto the local highway network. Appropriate signage, internally and externally, will identify the entry and egress routes for vehicles for the two car parking areas.

13.7.7 A car parking permit system is proposed to be implemented across the two car parking areas. Before commencing work on site, staff will be allocated to one of the two car parking areas which will be based on their starting location for their travel to the Site. This takes into consideration if staff are starting their journey from a different location to their home. The intention of the car parking permit system is to encourage staff to use the strategic road network in the vicinity of the Site such as the A11 and A14. This will assist in minimising the number of vehicle trips which could occur on the local roads, in particular through Fordham, Chippenham, Worlington and Red Lodge. Where possible, individual's primary working location is the Sunnica East Site and Sunnica West Site will be the same as their parking permit location.

13.7.8 A mini-bus service will be used to transport staff around and between Sunnica East Site (A and B) and Sunnica West Site (A and B) making use of internal routes where possible. Where the mini-bus is unable to use internal routes, the local highway network will be used to transport staff to the other Site compounds. Considering the start/finish time of staff, any mini-bus service trips on the local highway network are expected to occur outside of the peak highway hours of 0800-0900 and 1700-1800.

13.8 Assessment of Likely Changes and Effects

13.8.1 The changes and effects (both beneficial and adverse) associated with the construction of the Scheme are outlined in the sections below. The assessments have been assessed following consideration of the embedded mitigation measures as described in Section 13.7.

13.8.2 Consideration is given to the potential changes in respect to construction traffic for each of the identified user groups.

Construction (2023)

13.8.3 The following section of the chapter will assess the likely changes in respect of the construction period on vehicle travellers, public transport and non-motorised users.

13.8.4 Construction is anticipated to start at the end of 2022, and with a 24-month construction programme that would last until 2024.

Sunnica East Site A and B

Vehicle Travellers

Scheme Traffic Forecast

13.8.5 The peak number of construction staff is forecast to be 650 construction staff per day for the Sunnica East Site (A and B). This includes the 60 staff that are associated with the cable routes but are anticipated to use the Sunnica East Site B main access. Based on an average of 1.5 passengers per vehicle, this would equate to 433 staff vehicles. Construction staff would be expected to arrive at the site between 06:00 and 07:00 and depart between 19:00 and 20:00. In the highway peak hours there will be no staff vehicles and up to four

construction HGVs per hour (eight movements). As such the magnitude of change in the peak hours of the Scheme will be minimal.

13.8.6 In order to identify the impact of links in the local area, the staff distribution of traffic has been based on using Geographical Information Software (GIS) to determine which Middle Super Output Area (MSOA) from the 2011 Census data are located within a 30km radius of the DCO Site. The staff traffic has been distributed using the proportions of the population located within each MSOA. Staff will be required to park their vehicles at one of the two centralised car parking zones. Route planning software has been used to determine the likely routes that will be taken by staff to and from the car centralised parking zones. Further details regarding the distribution and assignment is contained within the preliminary TA.

13.8.7 Between 06:00 and 07:00 it is forecast that 67 staff vehicles will use the A11 southbound off-slip at Red Lodge to travel to the Sunnica East Site B increasing the traffic flow to 270 vehicles. This would result in a 33% increase in traffic flows along this link. However, this increase would equate to approximately one additional vehicle per minute during the Scheme AM peak hour.

13.8.8 In the highway AM peak hour, the base traffic flow without the Scheme is forecast to be 264 vehicles. Therefore, the traffic levels in the development AM peak hour with the Scheme are similar to those forecast in the highway peak hour without the Scheme. Therefore, the delay that the vehicle travellers are forecast to experience due to the Scheme would be no worse than in the highway AM peak hour and therefore is expected to operate within capacity.

13.8.9 Along Newmarket Road (the bridge over the A14) it is forecast that 141 staff will travel along this link in the development AM peak hour to travel to the Sunnica East Site B increasing the traffic flow to 567 vehicles. This would result in a 33% increase in traffic flows and would equate to approximately two vehicles per minute during the Scheme AM peak hour.

13.8.10 In the highway peak hour, the base traffic flow without the Scheme is forecast to be 553 vehicles in 2023. Therefore, the traffic levels in the development AM peak hour with the Scheme are similar to those forecast in the highway peak hour without the Scheme.

13.8.11 As the level of traffic forecast in the development AM peak hour and highway AM peak hour are similar, the delay that the vehicle travellers are forecast to experience due to the Scheme would be no worse than in the highway AM peak hour. The magnitude of change on vehicle travellers in terms of driver delay is **neutral,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **neutral**. This effect would be **short-term**.

13.8.12 In the development PM peak hour, the A11 southbound on-slip at Red Lodge is forecast to experience an increase in traffic flows of 166% (210 vehicles) due to the Scheme. This equates to approximately three to four additional vehicles per minute during the development PM peak hour (19:00-20:00). It is considered that in terms of magnitude of change this will result in a **Major Adverse** impact in the development PM peak however as the forecast flows would be similar to those experienced in the highway PM peak (17:00-18:00), the change is considered to be **Neutral** as the junction is expected to operate

within capacity due to similar total traffic flow through the junction during the hour. This effect would be **short-term**.

13.8.13 In the PM development peak hour Newmarket Road in forecast to have a 96% increase (284 vehicles) in traffic flows associated with the development. This equates to five additional vehicles per minute during the Scheme PM peak hour. It is considered that this will result in a **Moderate Adverse** change in the Scheme PM peak however as the forecast flows would be similar to those experienced in the highway PM peak, the change is considered to be **Neutral** as the junction is expected to operate within capacity due to similar total traffic flow through the junction during the hour. This effect would be **short-term**.

13.8.14 The 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (Ref. 13-5) indicates that the links at the A11 / Newmarket Road / Warren Road roundabouts, which relate to the main links related to the roads outlined in the previous paragraphs above, are forecast to operate within capacity at between 40% to 50% in 2031 in the AM and PM highway peak hours,. Therefore, it is considered, as the combination of the background traffic in the Scheme peak hours with the Scheme forecast trips are of a similar level to those generated in the Highway peak hours that the roundabouts have enough residual capacity (some 35% to 45%) to operate efficiently. The change as a result of the increase in junction capacity is considered to be **neutral**. This effect would be **short-term**.

Delay

13.8.15 It is forecast that 210 staff vehicles will travel on the A11 northbound off-slip onto Elms Road to travel to the Sunnica East Sites. This would equate to approximately three to four vehicles per minute during the Scheme peak hour. Any delay to vehicle travellers would be reduced as the staff will travel to the Site before the highway AM peak hour. It is considered that the majority of the background traffic exiting the A11 northbound at the Elms Road junction will use the right turn lane to travel to Red Lodge or Worlington which are the main destinations in the local area. The slip road is over 200m long which can accommodate a line of over 35 vehicles. Therefore, it is not anticipated that the delay at the Elms Road T-junction will be significant.

13.8.16 As the vehicles associated with the construction are anticipated to travel outside of the highway peak hours, it is considered that the magnitude of change of the construction on vehicle travellers in terms of driver delay is **neutral,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **neutral**. This effect would be **short-term**.

Accidents

13.8.17 The PIA for the past five years obtained from SCC and CCC indicate that three incidents have occurred at the A11 Off-Slip / Elms Road T-junction, two incidents on the A11 southbound (South of Red Lodge) and two incidents on the B1102. This equates to less than one incident per year at each location. One incident was classified as fatal on the B1102. Seven incidents were recorded on the A11 northbound (South of Red Lodge) over the five-year period, this is 1.4 incidents per year. It is considered that this does not indicate any significant safety design issues at these locations. As the construction staff and HGV traffic will travel outside of the highway peak

hours it is considered that development traffic will be added to the network when it is generally operating at a lower level of stress than under peak hour conditions. As such, the overall significance of effect on vehicles travellers in terms of accidents and safety is **minor adverse** during the construction period.

Public Transport Users

13.8.18 It is considered that there will not be a significant change in delay on the local roads associated with construction activity at peak times due to construction staff arriving and departing the Sunnica East Sites outside of peak hours between 07:00-08:00 and 19:00-20:00 which has been outlined previously in this chapter.

13.8.19 At this time, it is not anticipated that any bus services will be affected by the closure of roads during the construction period of the Scheme.

13.8.20 Therefore, it is considered that the significance of effect on public transport users will be **neutral**.

NMUs

13.8.21 In terms of Severance, Pedestrian Delay, Pedestrian / Cycle Amenity and Fear and Intimidation for all of the links within an easy walking and cycling distance from the Sunnica East Sites have a **minor adverse** change as they are rural roads with no pedestrian or cycle facilities available, but traffic levels would increase. It should be noted that this change or effect would not extend into a weekend.

PRoW

13.8.22 During construction four PRoW that are located either within or near the Sunnica East Sites are anticipated to be temporarily closed. A plan illustrating the temporary PRoW closures can be found in **Figure 13-2**. The temporary closures will be supported by appropriate signage. Given the information available at the time of writing, ahead of confirmation of the construction phasing, it is not possible to confirm with certainty the length of time each route will be closed for, so as a worst case scenario it is assumed the PRoW are closed for the entire length of the construction period. Any foreseeable closures of PRoWs will be outlined within the CTMP and scheduled based on the final design with the aim to minimise the actual duration of closure with diversion routes identified and signs indicating those routes provided for all users.

13.8.23 Notwithstanding, the PRoWs would be closed for the shortest timeframe reasonably necessary to carry out the works. It is expected in the majority of cases that the PRoWs would be closed for less than the entire construction period. When a PRoW is temporarily closed there is expected to be alternative options available within the local area.

13.8.24 These PRoW are predominantly used for recreational purposes and there is a wide network of PRoW in the surrounding area providing residents with alternative routes.

13.8.25 The Sunnica East Sites are located in a rural area with limited footways and pedestrian and cycle facilities in the area. There are several PRoW crossing and connecting the site to local villages such as Worlington, Freckenham and Red Lodge. There are no on or off-road cycling facilities within the vicinity of the Sunnica East Sites; however, the roads surrounding the site are generally lightly trafficked and therefore could encourage cycling. There is no data available on the number of pedestrians and cyclists using the PRoW that will be temporarily closed, however it is considered that the number of users affected is likely to be low. The magnitude of change on those using PRoW is **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

13.8.26 Elms Road provides access to Freckenham which is approximately a 35 minute walk to the north of Sunnica East Site B. This is not considered an easy walking distance and due to the lack of footpaths, it is not considered to be an attractive route for pedestrians. In addition, Freckenham mainly consists of residential developments so it not considered to be a key destination. Therefore, it is considered that Elms Road has **minor adverse** change with regards to severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation in relation to the increase of construction traffic. The magnitude of change on those using PRoWs on Elms Road is **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

13.8.27 The B1102 Freckenham Road is located adjacent to the Sunnica East Site and provides access to Freckenham and Worlington. There are no footpaths along the B1102 until close to the destinations. Therefore, it is considered that the B1102 Freckenham Road has **minor adverse** change with regards to severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation in relation to the increase of construction traffic. In addition, both destinations are primarily residential areas. The magnitude of change on those using PRoW on Freckenham Road is **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

Scheme Traffic Forecast

13.8.28 The scheme traffic forecasts are based on the increase on the local road network where NMUs could travel based on a 2km walk and a 5km cycle. The strategic road network has not been included as it is considered highly unlikely that NMUs would us it but it is appreciated that they could use it.

13.8.29 The peak number of vehicles associated with the staff for the Sunnica East Sites is forecast to be 434, this equates to approximately seven vehicles per minute during the development peak hours. On average across the 24-month construction period, approximately 334 staff vehicles are forecast to travel to / from the Sunnica East Sites per day, equating to approximately five to six vehicles per minute during the Scheme peak hours. The increase in traffic is forecast to occur outside of traditional peak hours and therefore it is anticipated that there will be less potential pedestrian and cyclist trips during this time that may be affected by the increase in traffic flow.

13.8.30 No staff travelling to / from the Sunnica East Sites are forecast to travel through Red Lodge or Chippenham in the AM and PM development peak hours.

13.8.31 Therefore, by taking the above factors into consideration, it is considered that the significance of effect of the construction on non-motorised users with regard to severance, pedestrian / cycle amenity and delay is **major adverse** in the development peak hours however as the forecast flows would be similar to those experienced in the highway peak hours, the change is considered to be **minor adverse**. This effect would be **short-term**.

Fear and Intimidation

13.8.32 Consideration has been given to HGV flows during construction. The main HGV access to the Sunnica East Sites is proposed to be from Elms Road and to be in located close proximity to the A11 northbound off-slip/Elms Road T-junction. It is anticipated that on average there will be 21 HGVs Annual Average Weekday Traffic (AAWT) (42 movements) to the Sunnica East Sites over the 24-month construction programme. It is forecast that there will be a peak in HGV deliveries during construction months three and four with 40 HGVs AAWT (80 movements). This would not result in a 30% increase in AAWT HGV activity along the A11 and A14.

13.8.33 Assuming a 10-hour construction delivery window, with movements split equally across the hours, which is considered a reasonable and robust approach based on previous experience and professional judgement, (noting that there will be more arrivals at the start of the day and departures towards the end), it would be anticipated that on average there will be three HGV deliveries per hour (six movements) to the Sunnica East Sites. As there is no accurate HGV data available for this part of the local road network, it is our professional judgement that, based on data for other roads in the study area, any increase associated with the Scheme is likely to have a **minor adverse** change along Elms Road due to the narrow nature of the road where the access is provided.

13.8.34 HGVs associated with the Sunnica East Sites will be routed to the strategic road networks for the majority of the journey to minimise the change on the local roads and villages. The HGV routes to the site are outlined in the Access Strategy (***PEI Report Volume 2: Appendix 13A*, Sub-Appendix I**).

13.8.35 Therefore, it is considered that the magnitude of change would be **minor adverse** and therefore the significance of effect in terms of fear and intimidation is **neutral**.

Accidents and Safety

13.8.36 With regard to accidents and safety, as noted in Section 13.6, no incidents involving vulnerable road users were identified near the main access point to the Sunnica East Sites. Therefore, given the increase in construction traffic it is considered that the magnitude of change would be **minor adverse** and therefore the significance of effect is **minor adverse** during the construction period. This effect would be **short-term**.

Summary

13.8.37 Table 13-13 outlines a summary of the magnitude of impact and significance of effect for vehicle travellers, NMUs and public transport users for the Sunnica East Sites.

Table 13-13: Summary of magnitude of change and significance of effect for Sunnica East (A and B) Sites

Description of Effects	Sensitivity (Value)	Description of Change	Magnitude of Change	Effect Category	Significant effect (Yes / No)
Vehicle Traveller					
Driver Delay	Low	High increase in traffic on the surrounding road network outside of the peak hours.	Neutral	Neutral	No
Accidents & Safety	Low	No accidents involving vulnerable road users were recorded within the vicinity of the Sunnica East site	Minor Adverse	Minor Adverse	No
NMU					
Severance	Low	Temporary closure of PRoW and increase in traffic flows.	Minor Adverse	Minor Adverse	No
Pedestrian Delay	Low	PRoW to be closed temporarily in the vicinity of the Sunnica West Site.	Minor Adverse	Minor Adverse	No
Pedestrian / Cycle Amenity	Low	Temporary closure of PRoW and increase in traffic flows.	Minor Adverse	Minor Adverse	No
Fear & Intimidation	Low	Low increase in HGV flows.	Minor Adverse	Minor Adverse	No
Accidents & Safety	Low	No accidents involving vulnerable road users were recorded within the vicinity of the Sunnica East site access.	Minor Adverse	Minor Adverse	No
Public Transport Users					
Public Transport Users	Neutral	No impact on bus services.	Neutral	Neutral	No

Sunnica West Site A & B

Vehicle Travellers

Forecast Traffic Flows

13.8.38 The peak number of construction staff is forecast to be 610 construction staff per day for the Sunnica West Sites. Based on an average of 1.5 passengers per vehicle, this would equate to 407 vehicles. Construction staff would be expected to arrive at the site between 06:00 and 07:00 and depart between 19:00 and 20:00. In the highway network peak hours there will be no staff vehicles and up to four construction HGVs per hour (eight movements). As such the magnitude of change in the peak hour of the Scheme will be minimal.

13.8.39 The construction vehicles associated with the Sunnica West Sites are not forecast to have a change of greater than 30% on the A11 and A14 in the development AM and PM peak hours. The A11 northbound south of La Hogue Road and A11 southbound north of La Hogue Road are forecast to have the greatest increase with 197 vehicles, this approximately equates to an additional three vehicles per minute in the AM and PM development peak hours. Due to the A11 being a strategic trunk road and based on the A11 slip-road data previously outlined in this chapter, it is not considered to be a significant increase in traffic and is not considered to impact the operation of the A11.

13.8.40 In the AM development peak hour, it is forecast that 128 staff vehicles (100% increase) will travel northbound on the B1085 (North of the Dane Hill Road Roundabout) to the Sunnica West Sites main access. This is forecast to double the traffic along this link in 2023 over the hour. This equates to approximately two additional vehicles per minute in the Scheme AM peak hour.

13.8.41 In the PM development peak hour, it is forecast that the staff vehicles will have a 109% increase (271 vehicles) on the southbound traffic on the B1085 (North of Dane Rill Road Roundabout). This equates to approximately five to six additional vehicles per minute. No junction modelling was undertaken in the 'Forest Heath Site Allocation Plan Cumulative Impact Study' as no issues were raised concerning junction capacity in the AM and PM peak hours. Therefore, it is not considered there would be a capacity issue at this junction in 2023 between 06:00-07:00 and 19:00-20:00 with the additional vehicles associated with the construction staff.

13.8.42 It is forecast that in the AM development peak hour, 210 staff vehicles will travel southbound on La Hogue Road and 197 northbound to reach the Sunnica West Sites car parking compound. This equates to an additional three to four vehicles per minute in each direction. In the development peak hour 354 vehicles are forecast to travel northbound on La Hogue Road and 53 vehicles are forecast to travel southbound to the A11. This equates to approximately an additional six vehicles and one vehicle per hour respectively.

13.8.1 As the vehicles associated with the construction are anticipated to travel outside of the highway peak hours, the magnitude of change on vehicle travellers in terms of driver delay is **neutral,** the sensitivity is **low,** therefore

the significance of the effect during the construction period is **neutral**. This effect would be **short-term**.

Accidents and Safety

13.8.2 The PIA for the past five years obtained from SCC and CCC indicates that three incidents have occurred at the B1085 / La Hogue Road junction, two incidents on the B1085 Turnpike Road and two incidents on Dane Hill Road. One incident was classified as fatal on Dane Hill Road. This equates to less than one incident per year at each location. It is considered that this does not indicate any significant safety design issues at these locations. As the construction staff and HGV traffic will travel outside of the highway peak hours it is considered that the overall significance of effect on vehicles travellers in terms of accidents and safety is **neutral** during the construction period.

Public Transport Users

13.8.3 It is considered that there will not be a significant change in delay on the local roads associated with construction activity at peak times due to construction staff arriving and departing the Sunnica West Sites outside of peak hours.

13.8.4 At this time, it is not anticipated that any bus services will be affected by the closure of roads during the construction period of the Scheme.

13.8.5 Therefore, it is considered that the significance of effect on public transport users would be **neutral**.

NMUs

13.8.6 In terms of Severance, Pedestrian Delay, Pedestrian / Cycle Amenity and Fear and Intimidation all of the links within an easy walking and cycling distance from the Sunnica West Sites have a **minor adverse** change as they are rural roads with no pedestrian or cycle facilities available.

PRoW

13.8.7 During construction one PRoW (204/5) located on the south-west boundary of Sunnica West Site A that connects Snailwell to Newmarket is anticipated to be temporarily closed. A plan illustrating the temporary PRoW closures can be found in ***PEI Report Volume 2: Appendix 13A*, Sub-Appendix E.** The temporary closure will be supported by appropriate signage. At this stage, ahead of confirmation of the construction phasing, it is not possible to confirm with certainty for how long each route will be closed for, so as a worst case scenario it is assumed the PRoW are closed for the entire length of the construction period. The magnitude of change on those using PRoW 204/5 is **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

13.8.8 Notwithstanding, the PRoWs would be closed for the shortest timeframe reasonably necessary to carry out the works. It is expected in the majority of cases that the PRoWs would be closed for less than the entire construction period. When a PRoW is temporarily closed there is expected to be alternative options available within the local area.

13.8.9 The PRoWs are predominantly used for recreational purposes and there is a wide network of PRoW in the surrounding area providing residents with alternative routes.

13.8.10 The Sunnica West Sites are located in a rural area with limited footways and pedestrian and cycle facilities in the area. There are no on or off-road cycling facilities within the vicinity of the Sites; however, the roads surrounding each Site are generally lightly trafficked and therefore could encourage cycling. There is no data available on the number of pedestrians and cyclists using the PRoW that will be temporarily closed, however it is considered that the number of users affected will be low. The magnitude of change on those using PRoW is **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

Forecast Traffic Flows

13.8.11 The peak number of vehicles associated with the staff for the Sunnica West Sites is forecast to be 407, which equates to approximately seven vehicles per minute during the development AM and PM peak hours. On average across the 24-month construction period, 330 staff vehicles are forecast to travel to and from the Sunnica West Sites per day, equating to approximately five to six vehicles per minute during the Scheme AM and PM peak hours. The increase in traffic is forecast to occur outside of traditional peak hours and therefore it is anticipated that there will be less potential pedestrian and cyclist trips during this time that may be affected by the increase in traffic flow.

13.8.12 As stated above it is forecast that the northbound traffic B1085 (North of the Dane Hill Road Roundabout) has a 100% increase in traffic due to the construction of the development in the AM development peak hour. In the PM development peak hour, traffic is forecast to increase by 109%. The IEMA guidelines consider this to be a high change to severance on this link. However, due to the lack of nearby amenities and pedestrian and cycle facilities the B1085 (North of the Dane Hill Road Roundabout) has a neutral sensitivity in terms of severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation. Therefore, the Scheme has a **major adverse** change on severance on this link. This effect would be **short-term**.

13.8.13 La Hogue Road provides access between the A11 and the B1085 and the La Hogue Farm Shop and Café. There are no pedestrian and cycle facilities located along La Hogue Road. Based on the anticipated low pedestrian and cycle flows, it has been determined that La Hogue Road has a **minor adverse** change in terms of severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation. This effect would be **short-term**.

13.8.14 The B1085 provides access to Chippenham to the north-east and Kennett to the south-west. There are no pedestrian and cycle facilities located along the B1085. Based on anticipated low pedestrian cycle flows it has been determined that the B1085 has a **minor adverse** change in terms of severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation. This effect would be **short-term**.

13.8.15 To travel to / from the Sunnica West Site main access 83 staff vehicles are forecast to travel through Chippenham in the development AM and PM peak hours. This equates to one to two vehicles travelling through Chippenham

per minute. Due to the lack of baseline traffic data within Chippenham, professional judgement has been applied to this assessment. As Chippenham is a built-up area this is a **minor** change in terms of severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation. There are limited pedestrian crossing facilities present in Chippenham. However, the increase in traffic flows is not considered significant in terms of severance as they are forecast to occur outside of traditional peak hours. The increase in traffic flows associated with staff vehicles are pre-AM highway peak and post-PM highway peak and is therefore not forecast to cause severance within the village.

13.8.16 Newmarket Road (bridge over the A11) is considered to have a 33% increase in traffic flows in the AM development peak hour and a 96% increase in the PM development peak hour. There are no footways present for pedestrians to walk to and cross the bridge over the A11 and therefore it is not suitable for pedestrians to cross no matter the traffic levels and the resultant change on severance is **neutral**. This effect would be **short-term**.

13.8.17 To travel to the Sunnica West Site main access 53 staff vehicles are forecast to travel through Red Lodge via Turnpike Road in the development AM peak hour due to staff travelling on the A11 southbound to the Red Lodge junction. This equates to approximately one vehicle per minute. There is a toucan crossing at the Turnpike Road / Boundary Road / Elms Road junction to enable pedestrian and cyclists to cross the road and will therefore reduce any potential severance caused by increased traffic flows on Turnpike Road. Red Lodge (via Turnpike Road) is considered to have a medium sensitivity in terms of severance, pedestrian delay, pedestrian / cycle amenity and fear and intimidation. As the additional traffic will travel through the village off-peak and it will also be outside the 'daytime' period when high traffic flows could create severance within the village Given the lack of baseline traffic data, the forecast number of staff vehicles and presence of toucan crossing, professional judgement has been applied. The magnitude of change on those using Turnpike Road in terms of severance is **minor adverse,** the sensitivity is **high,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

Fear and Intimidation

13.8.18 Consideration has been given to HGV flows during construction. The main HGV access to the Sunnica West Sites is proposed to be from La Hogue Road and to be located in close proximity to the A11/La Hogue Road/Norwich Road T-junction. To minimise the number of HGVs on the local network internal routes will be used where possible from the main access point. Where HGVs are unable to use internal routes, there are various secondary access points identified which include B1085 and Dane Hill Road as well as Chippenham Road to access Sunnica West Site B.

13.8.19 During construction it is anticipated that on average there will be 21 HGVs AAWT (42 movements) to the main access for the Sunnica West Site over the 24-month construction programme. It is forecast that there will be a peak in HGV deliveries during construction months three and four with 40 HGVs AAWT (80 movements). This would result in less than a 30% increase in AAWT HGV activity along the A11 and A14.

13.8.20 Assuming a 10-hour construction delivery window, which is considered a reasonable and robust approach based on previous experience and professional judgement, with movements split equally across the hours (noting that there will be more arrivals at the start of the day and departures towards the end), it would be anticipated that on average there will be two HGV deliveries per hour (four movements) to the Sunnica West Sites. Across the 24-month construction programme a maximum of four deliveries per hour is anticipated to occur during construction months two, three and four. As there is no accurate HGV data available for the local road network, it is our professional judgement that based on data for other roads in the study area, that any increase associated with the Scheme is likely to be **minor adverse** along the B1085 and La Hogue Road.

13.8.21 Therefore, it is considered that the magnitude of change would be low and therefore the significance of effect in terms of fear and intimidation is **minor adverse**. This effect would be **short-term**.

Accidents and Safety

13.8.22 With regard to accidents and safety, as noted in Section 13.6, no incidents involving vulnerable road users were identified near the main access point to the Sunnica West Site A. Therefore, it is considered that the magnitude of change would be low and therefore the significance of effect is **neutral** during the construction period. Access to both Sites are expected to be via the main access at Sunnica West Site A, therefore no conclusions are required in relation to Sunnica West Site B.

Summary

13.8.23 Table 13-14 outlines a summary of the magnitude of change and significance of effect for vehicle travellers, NMUs and public transport users for the Sunnica West Sites.

Table 13-14: Summary of magnitude of change and significance of effect for Sunnica West (A and B) Sites

Description of Effect	Sensitivity (Value)	Description of Change	Magnitude of Change	Effect Category	Significant effect (Yes / No)
Vehicle Traveller					
Driver Delay	Low	No increase in traffic on the surrounding road network in the highway peak hours.	Neutral	Neutral	No
Accidents & Safety	Low	A low number of accidents were recorded within the vicinity of the Sunnica West site.	Neutral	Neutral	No
NMU					

Description of Effect	Sensitivity (Value)	Description of Change	Magnitude of Change	Effect Category	Significant effect (Yes / No)
Severance	Low	Closure of PRoW and increase in traffic flows.	Minor Adverse	Minor Adverse	No
Pedestrian Delay	Low	PRoW are being closed in the vicinity of the Sunnica West Site.	Minor Adverse	Minor Adverse	No
Pedestrian / Cycle Amenity	Medium	Closure of PRoW and increase in traffic flows.	Minor Adverse	Minor Adverse	No
Fear & Intimidation	Low	Increase in HGV flows.	Minor Adverse	Minor Adverse	No
Accidents & Safety	Low	No accidents involving vulnerable road users were recorded within the vicinity of the Sunnica West site access.	Minor Adverse	Minor Adverse	No
Public Transport Users					
Delay	Neutral	No impact on bus services.	Neutral	Neutral	No

Burwell National Grid Substation Extension

Vehicle Travellers

Driver Delay

13.8.24 It is forecast that 20 construction staff will be required at the Burwell substation per day until construction month 15. This equates to approximately 13 vehicles per day (26 movements), an additional two vehicles every 10 minutes in the development peak hours. In the highway peak hours there will be no staff vehicles and up to 12 construction HGVs over the day (24 movements). As such the magnitude of change in the peak hour of the development proposals will be minimal. The impact of Burwell substation on vehicles travellers in terms of driver delay is anticipated to be **neutral**.

Accidents and Safety

13.8.25 The PIA for the past five years obtained from SCC and CCC indicate that no incidents have been recorded in the area surrounding the Burwell National Grid Substation Extension.

Public Transport

13.8.26 It is considered that there will not be a significant change in delay on the local roads associated with construction activity at peak times due to construction staff arriving and departing the site outside of peak hours.

13.8.27 At this time, it is not anticipated that any bus services will be affected by the closure of roads during the construction period of the Scheme.

13.8.28 Therefore, it is considered that the significance of effect on public transport users would be **neutral**.

NMUs

13.8.29 In terms of Severance, Pedestrian Delay, Pedestrian / Cycle Amenity and Fear and Intimidation all of the links within an easy walking and cycling distance from the Burwell National Grid Substation Extension have a **minor adverse** change as they are rural roads with no pedestrian or cycle facilities available. The magnitude of change on NMUs is **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

PRoW

13.8.30 The PRoW which runs in an east-west direction to the north of the Burwell substation, is predominantly for recreational use as it does not connect to any large settlements. This PRoW will be temporarily closed near to the substation during the construction period.

13.8.31 Notwithstanding, the PRoWs would be closed for the shortest timeframe reasonably necessary to carry out the works. It is expected in the majority of cases that the PRoWs would be closed for less than the entire construction period. When a PRoW is temporarily closed there is expected to be alternative options available within the local area.

13.8.32 There are two substation locations in Sunnica East (one on Sunnica East Site A and one in Sunnica East Site B), one located in Sunnica West A and one located at Burwell. It is anticipated that on average there will be 12 HGV AAWT (24 movements) to the four substations. This equates to three HGV deliveries (six movements) per substation per day. The HGV deliveries for the substations are forecast to occur from the beginning of construction until month 15 of the programme. The magnitude of change on those using the PRoW is **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

Fear and Intimidation

13.8.33 Assuming a 10-hour construction delivery window, with movements split equally across the hours (noting that there will be more arrivals at the start of the day and departures towards the end), it would be anticipated that on average there will be less than one HGV delivery per hour to each the four substations over the course of the day. This is not considered to be a significant change in the composition of the existing traffic around these sites. Therefore, it is considered that the magnitude of change would be **low,** the sensitivity is **low** and therefore the significance of effect in terms of fear and intimidation is **neutral**. This effect would be **short-term**.

Accidents and Safety

13.8.34 With regard to accidents and safety, as noted in Section 13.6, no incidents involving vulnerable road users were identified near the substations. Therefore, it is considered that the magnitude of change would be low and

therefore the significance of effect is **neutral** during the construction period. This effect would be **short-term**.

Summary

13.8.35 Table 13-15 outlines a summary of the magnitude of change and significance of effect for vehicle travellers, NMUs and public transport users for the Burwell National Grid Substation Extension.

Table 13-15: Summary of magnitude of change and significance of effect for the Burwell National Grid substation extension

Receptor	Sensitivity (Value)	Description of Change	Magnitude of Change	Effect Category	Significant effect (Yes / No)
Vehicle Traveller					
Driver Delay	Neutral	Low increase in traffic flows near the Burwell Substation	Neutral	Neutral	No
Accidents & Safety	Neutral	No accidents within the vicinity of the Burwell Substation.	Neutral	Neutral	No
NMU					
Severance	Neutral	No PRoW are being closed in the vicinity and there is a low increase in traffic flows.	Neutral	Neutral	No
Pedestrian Delay	Neutral	One small section of a PRoW is being temporarily closed in the vicinity of Burwell Substation.	Neutral	Neutral	No
Pedestrian / Cycle Amenity	Neutral	No pedestrian or cycle facilities are being closed during construction.	Neutral	Neutral	No
Fear & Intimidation	Neutral	Low increase in HGV flows.	Neutral	Neutral	No
Accidents & Safety	Neutral	No accidents involving vulnerable road users were recorded within the vicinity of the Burwell Substation.	Neutral	Neutral	No
Public Transport Users					
Public Transport Users	Neutral	No impact on bus services.	Neutral	Neutral	No

Cable Routes A and B

Vehicle Travellers

Delay and Accidents and Safety

13.8.36 It is forecast that 20 construction staff will be working on the cable routes until month 15. This equates to approximately 13 vehicles. These staff will travel to the main central compounds of either Sunnica West Site A or Sunnica East Site B depending on which is closest to the section of the cable route that they are working on at the time to park their vehicles. If all staff were to travel to the same site, this would equate to approximately two vehicles every 10 minutes during the development peak hour. In the highway peak hours there will be no staff vehicles, as such the magnitude of change in the peak hour of the development proposals will be minimal.

13.8.37 The PIA for the past five years obtained from SCC and CCC indicate that no incidents have been recorded in the area surrounding cable routes A and B. Professional judgement has been applied to identify the most appropriate study area around the Sunnica West Site (A and B) and Sunnica East Site (A and B).

13.8.38 Therefore, it is considered that the significance of effect on vehicles travellers in terms of driver delay and accidents and safety is **neutral**.

Public Transport

13.8.39 It is considered that there will not be a significant change in delay on the local roads associated with construction activity at peak times due to construction staff arriving and departing the site outside of peak hours.

13.8.40 At this time, it is not anticipated that any bus services will be affected by the closure of roads during the construction period of the Scheme.

13.8.41 Therefore, it is considered that the significance of effect on public transport users would be **neutral**. This effect would be **short-term**.

NMUs

13.8.42 In terms of Severance, Pedestrian Delay, Pedestrian / Cycle Amenity and Fear and Intimidation all of the links within an easy walking and cycling distance from the cable routes A and B have a **neutral** sensitivity as they are rural roads with no pedestrian or cycle facilities available. The magnitude of change on those links are **neutral,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**.

PRoW

13.8.43 During construction seven PRoW that cross the cable routes are anticipated to be temporarily closed. These include a PRoW (35/6) and (35/7) which are located to the north-west of Burwell. PRoW (35/10) and (35/11) that cross the cable routes to the north-east of Burwell, PRoW (92/19) that crosses to the north of Landwade.

13.8.44 A plan illustrating the temporary PRoW closures can be found at **Figure 13-2**. The temporary closures will be supported by appropriate and clearly

signed alternative routes. At this stage, it is assumed that there will be four sections and that each section will take four months to complete. It is however assumed that as a worst case scenario, each of the PROWs are closed for the entire length of the construction period.

13.8.45 These PRoW are predominantly used for recreational purposes and there is a wide network of PRoW in the surrounding area providing residents with alternative routes. The PRoWs would be closed for the shortest timeframe reasonably necessary to carry out the works. It is expected in the majority of cases that the PRoWs would be closed for less than the entire construction period. When a PRoW is temporarily closed there is expected to be alternative options available within the local area.

13.8.1 Therefore, by taking the above factors into consideration, it is considered that the significance of effect of the construction on non-motorised users with regard to severance, pedestrian / cycle amenity and delay is **major adverse** in the development peak hours; however, as the forecast flows would be similar to those experienced in the highway peak hours, the change is considered to be **minor adverse**. This effect would be **short-term**.

Fear and Intimidation

13.8.2 Consideration has been given specifically to HGV flows during construction. Based on the information provided by the Applicant, the cable routes are forecast to require four HGV AAWT (eight vehicle daily movements) during the first 15 months of the construction period. The specific HGV access points for the cable routes are not currently known; however, the increase in HGVs is not considered likely to be significant enough to increase the HGV AAWT flows by 30% in the local area.

13.8.3 Assuming a 10-hour construction delivery window, with movements split equally across the hours (noting that there will be more arrivals at the start of the day and departures towards the end), it would be anticipated that on average there will be one HGV delivery per hour (two movements) to the cable routes. The cable routes are spread across the Scheme and therefore the HGV trips will be spread across the extent of the cable routes. It is currently unknown the routes that would be used for the return journeys. However, it is are expected that they would take the same route used to access the Site and would return to the strategic road network at the earliest opportunity.

13.8.4 The magnitude of change on those using the PRoW is **neutral,** the sensitivity is **low,** therefore the significance of the effect during the construction period is **neutral**. This effect would be **short-term**.

Summary

13.8.5 Table 13-16 outlines a summary of the magnitude of change and significance of effect for vehicle travellers, NMUs and public transport users for cable routes A and B.

Table 13-16: Summary of magnitude of change and significance of effect for the cable routes A and B

Description of Effects	Sensitivity (Value)	Description of Change	Magnitude of Change	Effect Category	Significant effect (Yes / No)
Vehicle Traveller					
Driver Delay	Neutral	Traffic associated with the cable routes has been assessed in the relevant earlier sections.	Neutral	Neutral	No
Accidents & Safety	Neutral	No accidents within the vicinity of the cable routes.	Neutral	Neutral	No
NMU					
Severance	Neutral	PRoW are being closed in the vicinity and there is a low increase in traffic flows.	Minor Adverse	Neutral	No
Pedestrian Delay	Neutral	PRoW are being closed in the vicinity of the cable routes.	Minor Adverse	Neutral	No
Pedestrian / Cycle Amenity	Neutral	No pedestrian or cycle facilities are being closed during construction.	Minor Adverse	Neutral	No
Fear & Intimidation	Neutral	Low increase in HGV flows.	Neutral	Neutral	No
Accidents & Safety	Neutral	No accidents involving vulnerable road users were recorded within the vicinity of the cable routes.	Neutral	Neutral	No
Public Transport Users					
Delay	Neutral	No impact on bus services.	Neutral	Neutral	No

Combined Effects on Receptors

Vehicle Travellers

13.8.6 It is forecast that 1,260 construction staff is the maximum number of construction staff required across the Scheme per day. Based on an average of 1.5 passengers per vehicle, this would equate to 854 vehicles across the Scheme. Staff would be expected to arrive at the site between 06:00 and

07:00 and depart between 19:00 and 20:00 and therefore will avoid the highway peak times when the highway network is most likely to be congested. In the highway peak hours there will be no staff vehicles and up to 10 construction HGVs per hour (20 movements) across the Scheme. As such the magnitude of change in the peak hour of the development proposals will be minimal.

13.8.7 The A14 to A11 slip road at Junction 38 is forecast to experience the greatest percentage increase in traffic flow in the development AM peak hour of 47% (346 vehicles). This equates to approximately six additional vehicles per minute. In comparison, during the AM highway peak (08:00-09:00) the traffic flow along the A14 to A11 slip road at Junction 38 is approximately 1,216 vehicles without the Scheme. This means the development AM peak hour, with the traffic forecast to be generated by the Scheme added to it would generate 85 less vehicles over the hour (approximately one less vehicle per minute) than in the highway network AM peak hour. The other strategic highway links are not forecast to have an increase in flows of greater than 30% in the AM peak hour and have therefore not been considered further. It is considered the junction would operate within capacity with the additional forecast trips as it is not believed the junction is congested during the peak hours given the arrangement of the junction.

13.8.8 Junction 38 of the A14 is forecast to experience a 61% (364 vehicles) increase in traffic flows southbound in the development PM peak hour during the peak construction period. This equates to approximately six additional vehicles per minute during the Scheme PM peak hour. In comparison, during the PM highway peak (17:00-18:00) without the Scheme, the traffic flow along the A14 southbound at Junction 38 is approximately 1,314 vehicles. Therefore, this suggests that the flows forecast for the development PM peak hour with the additional trips associated with the Scheme would be lower than those forecast for the highway network PM peak. As a result, it is considered that the A14 southbound at Junction 38 would operate better than during the highway PM peak hour.

13.8.9 The A11 to A14 and A1304 slip road at Junction 38 is forecast to experience a 57% (416 vehicles) increase in traffic flow in the Scheme PM peak hour. This equates to approximately seven additional vehicles per minute. In comparison during the PM highway peak (17:00-18:00) without the Scheme, traffic flow along the A11 to A14 and A1304 slip road at junction 38 is approximately 1,243 vehicles. Therefore, this suggests that the flows forecast for the development PM peak hour with the additional trips associated with the Scheme would be lower than those forecast for the highway network PM peak. As a result, it is considered that the A11 to A14 and A1304 slip road at Junction 38 would operate better than during the highway PM peak hour without the Scheme.

13.8.10 The A11 southbound (north of La Hogue Road) is forecast to experience a 47% (406 vehicles) increase in traffic flows in the development PM peak hour during the peak construction period. In comparison during the PM highway peak (17:00-18:00) without the Scheme the traffic flow along the A11 southbound (north of La Hogue Road) is approximately 1,621 vehicles. Therefore, this suggest that the flows forecast for the development PM peak hour with the additional trips associated with the Scheme would be lower than

those forecast for the highway network PM peak. As a result, it is considered that the A11 southbound (north of La Hogue Road) would operate better than during the PM highway peak hour without the Scheme.

13.8.11 It is forecast that an additional 120 construction staff vehicles will use the A11 southbound off-slip (Red Lodge) to travel to the Sunnica East Sites and Sunnica West Sites. This results in a 59% increase in traffic along this link, which equates to approximately two additional vehicles per minute. The 'Forest Heath District Council Site Allocation Plan Cumulative Impact Study' document (August 2016) (**Ref. 13-5**) indicates that the links at the A11 / Newmarket Road / Warren Road roundabouts are forecast to operate within capacity at between 40% to 50% in 2031 in the AM highway peak hour. Therefore, it is considered that these roundabouts have enough residual capacity to operate efficiently with the additional 120 vehicles in 2023 between 06:00 and 07:00.

13.8.12 Therefore, it is considered that the overall significance of effect on vehicle travellers, including in terms of driver delay and accidents and safety compared to the baseline situation, is **neutral** during the construction period. This change would be **short-term**.

13.8.13 The PIA for the past five years obtained from SCC and CCC indicate that ten incidents have been excluded from the PIA analysis as the primary contributory factor was found to be driver intoxication. Excluding these incidents, there were a total were a total of 125 PIAs, of which 101 were classified as slight, 21 serious and three were classified as fatal in the selected area.

13.8.14 In the area surrounding the Sunnica East Sites three incidents were recorded at the A11 Off-Slip / Elms Road T-junction, two incidents on the A11 southbound (South of Red Lodge) and two incidents on the B1102. This equates to less than one incident per year at each location. One incident was classified as fatal on the B1102. Seven incidents were recorded on the A11 northbound (South of Red Lodge) over the five-year period, this is 1.4 incidents per year.

13.8.15 In the area surrounding the Sunnica West Sites, three incidents were recorded at the B1085 / La Hogue Road junction, two incidents on the B1085 Turnpike Road and two incidents on Dane Hill Road. One incident was classified as fatal on Dane Hill Road. This equates to less than one incident per year at each location. It is considered that this does not indicate any significant safety design issues at these locations.

13.8.16 As the construction staff and HGV traffic will travel outside of the highway peak hours it is considered that the overall significance of effect on vehicles travellers in terms of accidents and safety is **neutral** during the construction period.

NMUs

13.8.17 Based on the information contained within Tables 13-13 and 13-14 the magnitude of change of the combined effects between Sunnica East Sites A and B and Sunnica West Sites A and B is considered **minor adverse,** the sensitivity is **low,** therefore the significance of the effect during the

construction period is **minor adverse**. This effect would be **short-term** occurring across the study area.

13.8.18 In terms of Severance, Pedestrian Delay, Pedestrian / Cycle Amenity and Fear and Intimidation all of the links within an easy walking and cycling distance from the Sunnica West and East Sites. The magnitude of change is **minor adverse**, the sensitivity is **low**, therefore the significance of the effect during the construction period is **minor adverse**. This effect would be **short-term**. Public Transport Users

13.8.19 It is considered that there will not be a significant change in delay on the local roads associated with construction activity at peak times due to construction staff arriving and departing each site outside of peak hours.

13.8.20 At this time, it is not anticipated that any bus services will be affected by the closure of roads during the construction period of the Scheme.

13.8.21 Therefore, it is considered that the significance of effect on public transport users would be **neutral**.

Summary

13.8.22 Table 13-17 outlines a summary of the magnitude of change and significance of effect for vehicle travellers, NMUs and public transport users for the combined effects on receptors.

Table 13-17: Summary of magnitude of change and significance of effect for the combined effects on receptors

Description of Effects	Sensitivity (Value)	Description of Change	Magnitude of Change	Effect Category	Significant effect (Yes / No)
Vehicle Traveller					
Driver Delay	Low	High increase in traffic on the surrounding road network.	Neutral	Neutral	No
Accidents & Safety	Low	No accidents within the vicinity of the main site access points.	Neutral	Neutral	No
NMU					
Severance	Medium	Closure of PRoW and increase in traffic flows.	Neutral	Minor Adverse	No
Pedestrian Delay	Low	PRoW to be closed in the vicinity of the DCO Site.	Minor Adverse	Minor Adverse	No
Pedestrian / Cycle Amenity	Low	Closure of PRoW and	Minor Adverse	Minor Adverse	No

Description of Effects	Sensitivity (Value)	Description of Change	Magnitude of Change	Effect Category	Significant effect (Yes / No)
		increase in traffic flows.			
Fear & Intimidation	Neutral	Low increase in HGV flows.	Neutral	Minor Adverse	No
Accidents & Safety	Low	No accidents within the vicinity of the main site access points.	Neutral	Neutral	No
Public Transport Users					
Delay	Neutral	No impact on bus services.	Neutral	Neutral	No

Operation (2025-2065)

13.8.23 During scoping the assessment of the operational phase was scoped out. Five full time staff are expected on Site per day during the operation of the Scheme. In addition, there is the potential for maintenance staff to be required on an ad hoc basis. Therefore, it is not considered necessary to consider the opening year of the Scheme given that it will generate very low levels of traffic with peak traffic movements occurring during the construction phase.

Decommissioning (2065)

13.8.24 Background traffic flows cannot be accurately forecast for over 40 years into the future and therefore the transport impact of the decommissioning phase cannot be accurately assessed. It is not anticipated at this point in time that the impacts associated with decommissioning would be worse than during the construction period. On this basis as the construction period is considered to have the greatest change on the surrounding transport network, only the construction phase has been assessed. The effect of the decommissioning phase is anticipated to be the same or less than this, and therefore also not significant. A Decommissioning Environmental Management Plan will be prepared prior to the decommissioning phase as outline in ***Chapter 3: Scheme Description***.

13.9 Additional Mitigation and Enhancement Measures

13.9.1 No significant adverse effects are anticipated during construction and therefore no additional mitigation, other than the embedded mitigation, is required.

13.9.2 After construction during the operation phase, there are three potential routes that may be provided in the surrounding area, which are identified in **Figure 13-2** in ***PEI Report Volume 2: Appendix 13A*, Sub-Appendix K**. The provision of a route is proposed along Beck Road, one connecting PRoW W-257/010/0 and the B1102 Freckenham Road. A route is also proposed as an alternative route of the PRoW 204/5 where it starts and ends.

Monitoring

13.9.3 No monitoring is required for the mitigation and enhancements

13.10 Residual Effects

13.10.1 This section summarises the residual significant effects of the Scheme on vehicle travellers, NMUs and public transport users.

13.10.2 Significant residual effects are defined as moderate or major. These are listed in Table 13-18 (Scheme construction).

13.10.3 Table 13-18 outlines the likely residual construction effects after mitigation.

Table 13-18: Summary of Residual Effects (Construction)

Receptor	Description of change	Significance of effect without mitigation	Mitigation/Enhancement measure	Residual effect after mitigation
Sunnica East Sites A and B				
Vehicle Traveller – Driver Delay	No increase in traffic on the surrounding road network during the highway peak hours.	Neutral	*N/A*	Neutral
Vehicle Traveller – Accidents & Safety	A low number of accidents were recorded within the vicinity of the Sunnica East site access.	Neutral	*N/A*	Neutral
NMU – Severance	Closure of PRoW and increase in traffic flows.	Minor Adverse	*N/A*	Minor Adverse
NMU – Pedestrian Delay	PRoW to be closed in the vicinity of the Sunnica West Site.	Neutral	*N/A*	Neutral
NMU – Pedestrian / Cycle Amenity	Closure of PRoW and increase in traffic flows.	Minor Adverse	*N/A*	Minor Adverse
NMU – Fear & Intimidation	Low increase in HGV flows.	Neutral	*N/A*	Neutral
NMU – Accidents & Safety	No accidents involving vulnerable road users were recorded within the vicinity of the Sunnica East site access.	Neutral	*N/A*	Neutral
Public Transport Users	No impact on bus services.	Neutral	*N/A*	Neutral

Receptor	Description of change	Significance of effect without mitigation	Mitigation/Enhancement measure	Residual effect after mitigation
Sunnica West Sites A and B				
Vehicle Traveller – Driver Delay	No increase in traffic on the surrounding road network during the highway peak hours.	Moderate Adverse	*N/A*	Moderate Adverse
Vehicle Traveller – Accidents & Safety	A low number of accidents were recorded within the vicinity of the Sunnica West site access.	Neutral	*N/A*	Neutral
NMU - Severance	Closure of PRoW and increase in traffic flows.	Minor Adverse	*N/A*	Minor Adverse
NMU – Pedestrian Delay	PRoW to be closed in the vicinity of the Sunnica West Site.	Minor Adverse	*N/A*	Minor Adverse
NMU – Pedestrian / Cycle Amenity	Closure of PRoW and increase in traffic flows.	Minor Adverse	*N/A*	Minor Adverse
NMU – Fear & Intimidation	Increase in HGV flows.	Neutral	*N/A*	Neutral
NMU – Accidents & Safety	No involving vulnerable road users were recorded accidents within the vicinity of the Sunnica West site access.	Neutral	*N/A*	Neutral
Burwell National Grid Substation Extension				
Vehicle Traveller – Driver Delay	No increase in traffic on the surrounding road network during the highway peak hours.	Neutral	*N/A*	Neutral
Vehicle Traveller – Accidents & Safety	No accidents within the vicinity of the Burwell Substation.	Neutral	*N/A*	Neutral

Receptor	Description of change	Significance of effect without mitigation	Mitigation/Enhancement measure	Residual effect after mitigation
NMU - Severance	No PRoW are to be closed in the vicinity and there is a low increase in traffic flows.	Neutral	*N/A*	Neutral
NMU – Pedestrian Delay	No PRoW are to be closed in the vicinity of Burwell Substation.	Neutral	*N/A*	Neutral
NMU – Pedestrian / Cycle Amenity	No pedestrian or cycle facilities are being closed during construction.	Neutral	*N/A*	Neutral
NMU – Fear & Intimidation	Low increase in HGV flows.	Neutral	*N/A*	Neutral
NMU – Accidents & Safety	No accidents involving vulnerable road users were recorded within the vicinity of the Burwell Substation.	Neutral	*N/A*	Neutral
Public Transport Users	No impact on bus services.	Neutral	*N/A*	Neutral
Cable Routes A and B				
Vehicle Traveller – Driver Delay	No increase in traffic on the surrounding road network during the highway peak hours.	Neutral	*N/A*	Neutral
Vehicle Traveller – Accidents & Safety	No accidents within the vicinity of the cable routes.	Neutral	*N/A*	Neutral
NMU - Severance	PRoW to be closed in the vicinity and there is a low increase in traffic flows.	Neutral	*N/A*	Neutral
NMU – Pedestrian Delay	PRoW to be closed in the vicinity of the cable routes.	Neutral	*N/A*	Neutral

Receptor	Description of change	Significance of effect without mitigation	Mitigation/Enhancement measure	Residual effect after mitigation
NMU – Pedestrian / Cycle Amenity	No pedestrian or cycle facilities are being closed during construction.	Neutral	*N/A*	Neutral
NMU – Fear & Intimidation	Low increase in HGV flows.	Neutral	*N/A*	Neutral
NMU – Accidents & Safety	No accidents involving vulnerable road users were recorded within the vicinity of the cable routes.	Neutral	*N/A*	Neutral
Public Transport Users	No impact on bus services.	Neutral	*N/A*	Neutral

13.11 Cumulative Effects

13.11.1 The future baselines to 2023 has been calculated using TEMPro growth factors which include forecast development growth. Therefore, the baseline includes cumulative growth and the cumulative effects are considered within the Assessment of Likely Impacts and Effects above.

13.11.2 Further to this the residual effects are not significant, and it can therefore be concluded that the Scheme on its own is not significant and together with other scheme proposed in the local area, the effect is not significant.

13.12 References

Ref 13-1 Department of Energy and Climate Change, (July 2011). 'Overarching National Policy Statement for Energy (EN-1)'. The Stationary Office, London,

Ref 13-2 Ministry of Housing, Communities and Local Government (February 2019). 'National Planning Policy Framework'. APS Group, London.

Ref 13-3 Ministry of Housing, Communities and Local Government (March 2014). 'Travel Plans, Transport Assessments and Statements'. GOV.UK, London.

Ref 13-4 Forest Heath District Council, (May 2010). 'Forest Heath Local Development Framework Core Strategy Development Plan Document 2001-2026 (with housing projected to 2031). Forest Heath District Council, Mildenhall.

Ref 13-5 West Suffolk, (February 2015). 'Joint Development Management Policies Document'. West Suffolk, Bury St Edmunds.

Ref 13-6 Institute of Environmental Assessment, (1994). 'Guidelines for the Environmental Assessment of Road Traffic'. IEA, Horncastle.

Ref 13-7 AECOM, (August 2016). 'Forest Heath District Council Site Allocations Plan Cumulative Impact Study'. AECOM, Norwich.