# The Sizewell C Project

## 5.1 Consultation Report Appendix E.1 - Part 1 of 2 Part E: Stage Three Pre-Application Consultation

Revision: 1.0

Applicable Regulation: Regulation 5(2)(q)

PINS Reference Number: EN010012

May 2020

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

# Appendix E.1 Stage 3 Pre-Application Consultation Document: Volume 1 – Development Proposals (January 2019)

# Sizewell C | Proposed Nuclear Development

## Stage 3 Pre-Application Consultation

January 2019

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Volume 1

# Development Proposals

# Contents

# Foreword


I am very pleased to be able to present the latest proposals for Sizewell C, a new nuclear power station which would be built to the north of Sizewell B on the Suffolk coast.

Sizewell C would make a major contribution to the economy of Suffolk and beyond, while also helping to meet the nation's future need for low carbon energy.

EDF Energy and CGN are working in partnership to develop three new nuclear power stations in the UK. We are building Hinkley Point C in Somerset, and are jointly developing other proposals, with EDF Energy leading on Sizewell C and CGN leading on Bradwell B in Essex.

The proposals presented here have been shaped through feedback received from two previous stages of public consultation, on-going engagement with stakeholders, and substantial technical assessments and environmental studies. We have also learnt from Hinkley Point C, already under construction and on track to generate electricity from 2025.

Our overarching aim for the development of Sizewell C remains to support - locally, regionally, and nationally - the creation of significant business, training and job opportunities while limiting or mitigating any adverse effects from construction for local people and the environment. This is reflected in our proposals, which present refinements to our plans in some areas, along with a number of new options, particularly for the transport of people and freight to and from the construction site.

Consultation has played an important role in informing and developing our plans and I would like to thank everyone who has taken the time to give their views so far. I would encourage you to play an active part in this Stage 3 consultation as some significant choices are presented and your feedback will inform our proposals.

The Sizewell C team will be available at our consultation events to discuss our proposals and answer your questions. I hope you can join us and contribute to the further development of our plans. We look forward to receiving your views.

**Jim Crawford**
Sizewell C Project Development Director

# 1. Introduction

## 1.1. Introduction

**1.1.1.** NNB Generation Company (SZC) Limited[1] is proposing to build and operate a new nuclear power station, Sizewell C, on the Suffolk Coast, on land immediately to the north of the existing Sizewell B power station. NNB Generation Company (SZC) Limited has been formed as a separate company to finance and construct Sizewell C. EDF Energy will seek additional shareholders in NNB Generation Company (SZC) Limited and is currently in discussion with UK pension funds. NNB Generation Company (SZC) Limited is referred to in this document as EDF Energy[2]. This document forms part of EDF Energy's Stage 3 public consultation, which is being undertaken in order to inform preparation of an application for development consent.

**1.1.2.** Stage 2 consultation was undertaken between 23 November 2016 and 3 February 2017. We are grateful for the extensive feedback that was received from the local community, others with an interest in the project and statutory consultees, including the local planning authorities to this consultation. That feedback has been very helpful in guiding us in refining and revising our proposals and strategies for the development of Sizewell C.

**1.1.3.** The purpose of this Stage 3 consultation document is to update the local community and all interested parties on the way in which EDF Energy has taken account of consultation feedback, further detailed studies and up to date learning from the construction of our sister project in Somerset, Hinkley Point C, to further develop our preferred proposals for Sizewell C. This consultation seeks further views on those proposals and on issues where we are still considering options for different elements of the project. Following this Stage 3 consultation, we will consider all of the further comments received and commence the preparation of an application for development consent.

**1.1.4.** In making changes since Stage 2, we have beenguided by local feedback and by the views of the statutory consultees, with whom we continue to engage. We have also been guided by our own vision for the project which we set out at Stage 2:

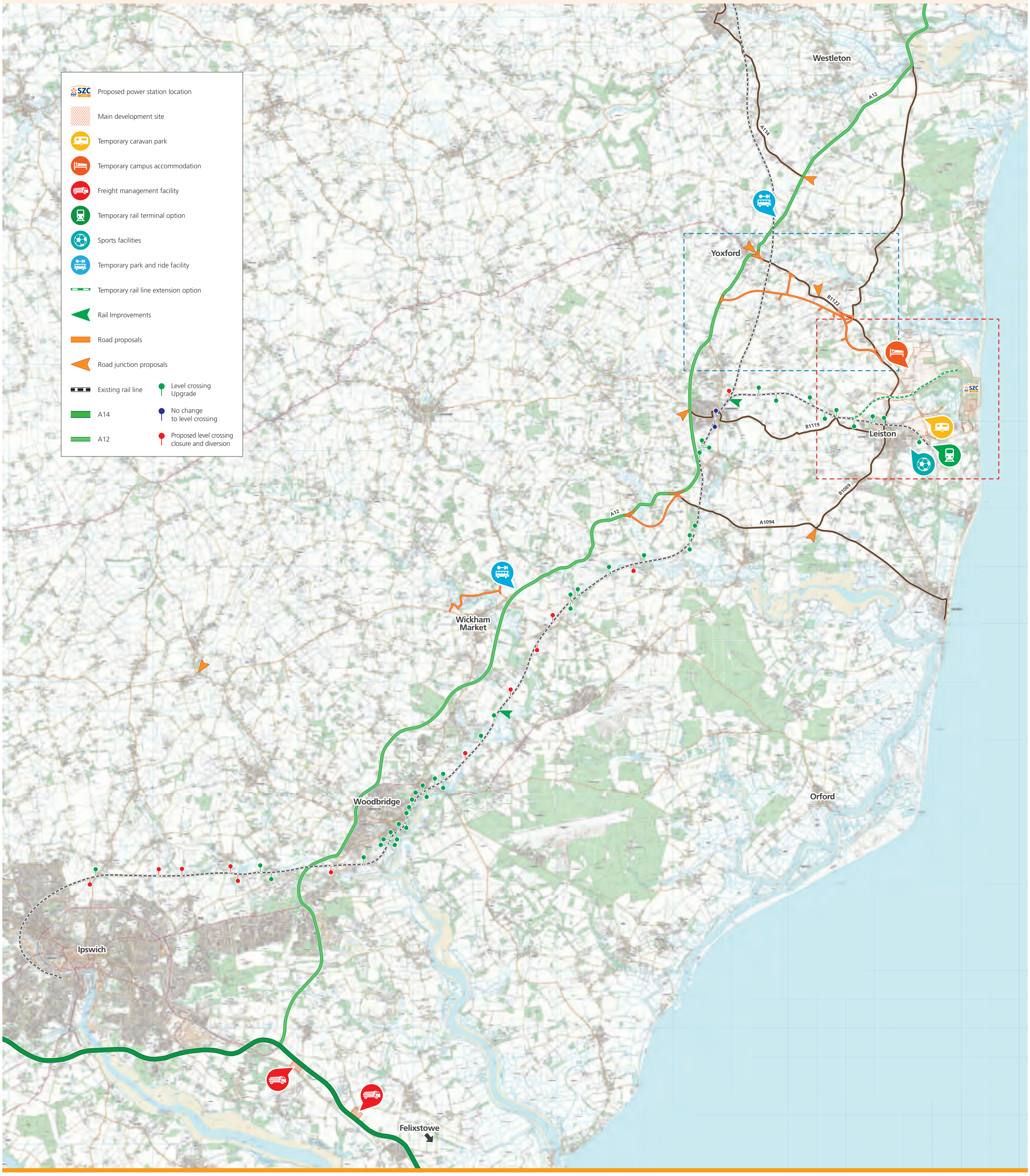
*"EDF Energy intends to deliver a nuclear power station at Sizewell C that will make a major contribution to the nation's low-carbon energy needs. The development, operation and ultimate decommissioning of the power station will be undertaken in a manner consistent with the highest standards of safety, reliability and sustainability.*

*EDF Energy will strive to ensure that the inherent benefits of its investment in Sizewell C are captured in a way which makes the most of its practical contributions to the local and regional economy. In recognition of the environmental sensitivity of the location, EDF Energy will ensure that the power station is designed and delivered in such a way as to limit any adverse effects on the environment and on local communities as far as is reasonably practical. Any significant adverse impacts of the construction, operation or decommissioning of the power station shall be mitigated where practical and appropriate in a way which is environmentally responsible and sensitive both to the needs of the community and to the strategies of the relevant authorities."*

**1.1.5.** Important to achieving these objectives are our transport and socio-economic strategies and our understanding of the environmental sensitivities of the local area. Since Stage 2, we have carried out work to develop our proposals in a way which maximises the benefits and minimises the harm caused by the project, in line with our vision. We provided preliminary environmental information as part of both the Stage 1 and Stage 2 consultations, and we have continued to collect environmental information to identify any significant environmental effects that may arise in connection with the project. In doing so, we have started to consider how these effects may be addressed, for example, through the identification of mitigation measures and changes to our transport and socio-economic strategies.

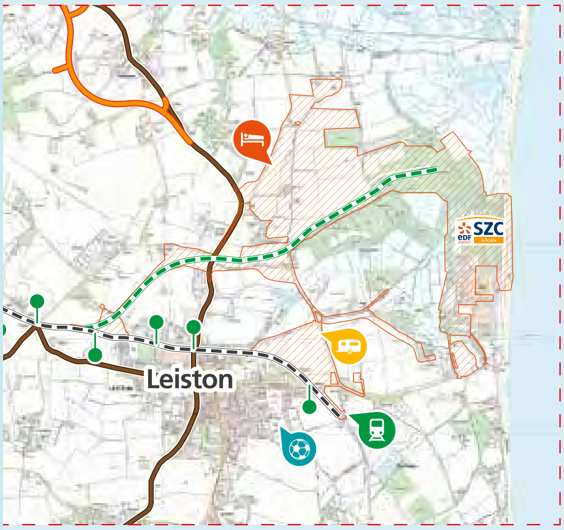
[1] Company No. 9284825
[2] NNB Generation Company (SZC) Limited is currently a joint venture company between EDF Energy and China General Nuclear Power Corporation (CGN)

## **Figure 1.1** Sizewell C Project, Suffolk




Rail-led strategy: Theberton bypass


Road-led strategy: Sizewell link road




Main Development Site

**1.1.6.** The locations of all elements of our proposals being consulted on in this Stage 3 consultation are shown in **Figure 1.1**. However, not all of this infrastructure will form part of our application for development consent. The nature of the proposals we take forward will depend upon decisions made following this consultation, and in particular whether a rail-led or road-led freight management strategy is adopted, as explained in **section 1.2**.

## 1.2. Key updates and changes since the stage 2 consultation

### a) Main development site

**1.2.1.** In response to feedback and further technical and environmental work we have developed our design proposals for the permanent power station development. In particular:

- a jetty is no longer proposed, as we are no longer considering use of the marine-led strategy for the movement of construction materials;
- the beach landing facility (BLF) remains part of our proposals, but its role would be to facilitate the movement of some large and Abnormal Indivisible Loads (AILs) to the main development rather than to move bulk materials by sea;
- we propose a causeway/culvert to provide access to the power station site across the Site of Special Scientific Interest (SSSI);
- we have revised our proposals for spoil management and now propose that they can be limited and drawn away from immediate proximity to the village of Eastbridge;
- we propose to proceed with a single accommodation campus with sports facilities located off-site in Leiston, at a site adjacent to the Leisure Centre and Alde Valley School, with shared use between the workforce, school and local community. This enables the accommodation campus to have a smaller footprint and to be contained to the east of Eastbridge Road. We have revised the layout so that no building is higher than 4-storeys;
- we have developed our proposals for the relocation of Sizewell B facilities currently located on the Sizewell C site to new sites within and adjacent to Sizewell B;
- we have continued to refine our design for the power station in response to stakeholder feedback and ongoing technical work, specifically in relation to the turbine halls, forebays, operational service centre, site offices, interim spent and fuel store;
- at Stage 2 we said that electrical connections from Sizewell C would be made via underground cables to a new National Grid 400 Kilovolt (kV) substation, which would be located

adjacent to the existing Sizewell B substation. However, the development of plans for the construction site has highlighted that there are significant safety and programme risks with constructing and operating an underground cable option. Connection via an overhead line is therefore now proposed as part of this Stage 3 consultation;

- the northern mound (a substantial landscape feature to the north of Sizewell beach) is proposed to be removed and rebuilt, complete with the structural strengthening necessary to provide adequate protection from flood risk over the lifetime of the new power station;
- we have continued to progress our design to provide an effective sea defence and landscape feature;
- we have furthered our work on the training building to create a sensitive concept design, which we have concluded should be located north of the power station platform, adjacent to the main car park;
- a Combined Heat and Power (CHP) plant is proposed to support the accommodation campus and during the operational phase as a backup power source, although other options are being considered;
- a new substation is proposed east of Old Abbey Farm; and
- some changes have been made to the boundary of the proposals on the main development site.

### b) Transport strategy for movement of construction materials

**1.2.2.** Consultation feedback from Stage 2 confirmed that transport during the construction phase is a particularly important issue. Guided by that feedback, our further work has indicated that:

- a marine-led strategy for the movement of construction materials would be difficult to deliver because of the impact on the marine environment of constructing a jetty. Measures to reduce this impact would not fully address those issues but would significantly increase the overall time taken to construct the power station, which would not meet the "urgent" need for new nuclear power identified by Government in the Nuclear Power Generation National Policy Statement (NPS EN – 6) (Ref. 1.1);
- at Stage 3 we are consulting on two alternative transport options for the management of freight: (i) a rail-led strategy; and (ii) a road-led strategy;
- the rail-led strategy is based on the "green rail route" presented at Stage 2, taking construction materials direct to the main development site. Upgrades and improvements would be necessary along the Saxmundham-Leiston branch line and on the East Suffolk Line, including some closures and changes to level crossings. Detailed work is being undertaken with Network Rail to confirm the deliverability of those improvements;
- the road-led strategy would involve construction of a new direct link road (the "Sizewell link road") provided from the A12 to the main development site. Use of this road for Sizewell C traffic would avoid the need for the use of local roads and would ensure traffic bypasses communities;
- if the rail-led strategy is ultimately adopted, we propose a smaller bypass around Theberton instead of the Sizewell link road;
- the road-led strategy, would include a freight management facility (lorry holding area) near Ipswich to manage the flow of HGV traffic to the main development site; and
- at Stage 2 we suggested that in the early years of construction the existing Sizewell Halt rail terminal on the Saxmundham–Leiston branch line would be used for delivery of construction materials to the main development site. Use of Sizewell Halt in the early years, in either a rail-led or road-led scenario, is proposed at Stage 3. However, as an alternative, we are also now consulting on construction of a new rail siding adjacent to the existing branch line in the land east of Eastlands Industrial Estate.

**1.2.3.** The two village bypass consulted on at Stage 2 is proposed under either the road-led or rail-led strategies.

### c) Changes to park and ride facilities

**1.2.4.** Consultation feedback has helped to confirm our preference for park and ride sites at Wickham Market (southern park and ride) and Darsham (northern park and ride). The site at Woodbridge is no longer being considered in reserve. At Wickham Market, we put forward enhanced proposals for access from the west in order to limit impacts on local communities, or alternatively restrictions on on-street parking with parking provided elsewhere. At Darsham, an alternative entrance located further north along the A12 via Willow Marsh Lane is now proposed, which replaces the entrance consulted on at Stage 2.

### d) Community and economic issues

**1.2.5.** The construction of Sizewell C would make a significant contribution to the Government's energy strategy to support the security of the United Kingdom's (UK) economic future, as well as supporting the UK's Industrial Strategy by producing a long-term boost for the local economy through increased employment and skills provision, operational and construction employment and opportunities for business and supply chains.

**1.2.6.** EDF Energy recognises that there are significant opportunities to maximise and support the uptake of local socio-economic benefits through targeted enhancement, initiatives and support. Since Stage 2:

- we have been working closely with stakeholders including Suffolk County Council (SCC), schools and colleges and New Anglia Local Enterprise Partnership (LEP) to set out an approach to education, skills, employment and training that aligns with the wider energy sector strategies in the region and utilises already successful schemes; and
- as a result of information gathering work with the Suffolk Chamber of Commerce (alongside our own experience derived from Hinkley Point C on the types of contracts that are most likely to be placed locally), we have set out our commitment to a supply chain strategy and to maximising where possible the potential for local businesses to secure contracts on the project.

**1.2.7.** We recognise that there is potential for the project to cause adverse socio-economic impacts, unless properly mitigated. Since Stage 2, our understanding of community issues relating to the project has evolved, enabling us to put forward proposals to minimise impacts:

- we have identified a range of measures that could be used via a housing fund to avoid or mitigate any potential adverse effects on the housing market and in particular vulnerability in the private rented sector;
- we have set out in more detail the likely profile of construction workers, and begun to identify potential effects on community facilities and services. This includes work with the emergency services, health and social care; and
- following work with local stakeholders, we have set in motion a process for identifying potential effects on the tourist economy and measures for avoiding or mitigating it through a tourism fund, and aspirations for a visitor centre.

### e) Additional assessment of impact of construction workforce

**1.2.8.** At peak, the project would be one of the largest construction projects in the UK. As explained in our Stage 2 consultation, a workforce of around 6,100 workers is anticipated at the peak of the construction phase, comprising 5,600 workers on the main development site plus 500 workers at the associated development sites. This remains our central case assessment. However, that assessment is a forecast and there will always be some uncertainty over the actual number of workers. To ensure our assessments are robust in relation to transport, environmental effects, worker accommodation and impact on services, we have considered what the effects might be if the workforce numbers turned out to be higher. To test this we have considered what the effects might be if there were as many as 8,500 workers (made up of 7,900 workers on the main site development site and 600 on the associated development sites) at peak. In order to do this, we have taken different approaches in our transport and our socio-economic assessments:

- for transport, where the effects are project wide and complex, we have based our modelling on this higher assessment number so that all potential effects can be captured; and
- for socio-economics the potential effects of a higher workforce number are easier to anticipate and so we have maintained our assessment at the central case of 6,100 workers but considered on a topic by topic basis (housing impacts, services impacts etc.) what the effects of a higher number might be and how they might be mitigated.

### f) Movement of people

**1.2.9.** EDF Energy continues to develop measures to manage and reduce the daily traffic associated with the movement of the construction workforce to and from the main development site during the peak years of construction. Whilst there have been many and varied views on the specific site options presented in the Stage 1 and Stage 2 consultations, and queries around how some of the proposals would work in practice, the principle of these measures received support and they were recognised as having the potential to reduce the traffic impacts which would otherwise occur. These elements, therefore, remain our preferred proposals and are set out in more detail in this Stage 3 consultation. They include:

- an onsite accommodation campus, helping to significantly reduce the number of workforce journeys through towns and villages close to the main development site;
- two park and ride developments, one for construction workers approaching Sizewell from the north on the A12 and the other for those approaching from the south on the A12;
- direct bus services operating from Leiston, Ipswich and Lowestoft;
- bus pick up services for workers using rail services on the East Suffolk Line; and
- a Construction Worker Travel Plan to encourage car sharing, cycling and walking to the site.

## 1.3. Policy context update

**1.3.1.** Our Stage 2 consultation explained the planning policy background. Since that time there have been some policy developments, particularly in relation to national planning policy for nuclear power.

**1.3.2.** The Overarching National Policy Statement (NPS) for Energy (NPS EN – 1) (Ref. 1.2) and the NPS for Nuclear Power Generation (NPS EN – 6) were formally designated by the Government in July 2011. Together they provide the primary basis for decisions on applications for development consent for nuclear projects.

**1.3.3.** The need for the project is established in NPS EN – 6 which lists Sizewell as one of eight potentially suitable sites for the deployment of new nuclear power stations in England and Wales before the end of 2025. NPS EN – 1 confirms that all applications for development consent should be assessed on the basis that the Government has demonstrated that there is a need for those types of infrastructure. NPS EN – 1 confirms that it is Government policy that new nuclear power forms an important element of the strategy for moving towards a de-carbonised, diverse electricity sector by 2050, and that nuclear power should be able to contribute to the UK's need for new capacity. The need for new nuclear power generation is described as "urgent."

**1.3.4.** In December 2017, the Government began the process of consulting on the preparation of a new NPS for nuclear power stations in light of the need to review and update government policy and, in particular, to take into account that progress with the development of new nuclear power stations has been relatively slow. Subject to the outcome of the Government's consultation, the document explains that:

- the Government proposes to carry forward the sites listed in NPS EN – 6 as the list of sites potentially suitable for the deployment of nuclear power stations under the new NPS (including Sizewell), except for Hinkley Point C which has already secured consent;
- the assessment of need for new electricity generation set out in the existing NPS remains valuable and continues to be relevant, and the need for new nuclear power remains significant;
- new nuclear power is important in making the transition to a low carbon economy; and
- therefore, it is important that there is a strong pipeline of new nuclear power projects to contribute to the UK's energy mix and future security of supply.

**1.3.5.** In addition, the Government's consultation proposes that a further opportunity is given for additional potentially suitable sites to be nominated for the development of nuclear power, although the consultation explains that the Government's preliminary view is that the sites already listed in NPS EN – 6 are likely to be those which can deploy the soonest and are the only sites capable of deploying new nuclear power stations by 2035.

**1.3.6.** In due course, the sites listed in EN–6 (including Sizewell) will be covered by the policy in the new NPS but, in the meantime, the consultation makes clear that the Government will continue to consider those sites to be appropriate and that they will retain strong Government support pending the designation of the new NPS.

**1.3.7.** Key national and local planning policies are referred to, where relevant, throughout this Stage 3 consultation document but, particularly in **Chapter 3** of this volume.

## 1.4. Structure of this document

**1.4.1.** **Volume 1** (this volume) provides an introduction to the consultation and an overview of the project proposals with particular reference to the changes made since Stage 2 consultation. It explains the planning policy context **(Chapter 3)**, and the socio-economic strategies **(Chapter 4)** and alternative transport strategies **(Chapter 5)** which have been developed to limit local impacts, regulate the construction of the project and maximise local benefits. Reference is made to how feedback from Stage 2 consultation has helped to shape our preferred proposals. **Chapter 6** provides traffic modelling information which supports our transport proposals. **Chapters 7** to **17** describe the proposals that we are presenting for our Stage 3 consultation.

**Table 1.1** Elements of Stage 3 Proposals for Consultation

| Stage 3 proposals | Rail-led | Road-led | Description of proposed development | Preliminary environmental information |
|---|---|---|---|---|
| Main development site | Yes | Yes | Volume 1, Chapter 7 | Volume 2A, Chapter 2 |
| Green rail route | Yes | No | Volume 1, Chapter 8 | Volume 2A, Chapter 3 |
| Sizewell Halt or new rail siding adjacent to the existing branch line on LEEIE | Yes | Yes | Volume 1, Chapter 7 and 8 | Volume 2A, Chapter 2 |
| Upgrades to the East Suffolk Line | Yes | No | Volume 1, Chapters 8 | Volume 2A, Chapter 4 |
| Upgrades to the Saxmund-ham to Leiston branch | Yes | Yes | Volume 1, Chapters 8 | Volume 2A, Chapter 4 |
| Changes to level crossings | Yes | Yes | Volume 1, Chapters 8 and 9 | Volume 2A, Chapter 4 |
| Sizewell link road | No | Yes | Volume 1, Chapter 10 | Volume 2A, Chapter 5 |
| Theberton bypass | Yes | No | Volume 1, Chapter 11 | Volume 2A, Chapter 6 |
| Two village bypass | Yes | Yes | Volume 1, Chapter 12 | Volume 2B, Chapter 7 |
| Northern park and ride | Yes | Yes | Volume 1, Chapter 13 | Volume 2B, Chapter 8 |
| Southern park and ride | Yes | Yes | Volume 1, Chapter 14 | Volume 2B, Chapter 9 |
| Freight management facility | No | Yes | Volume 1, Chapter 15 | Volume 2B, Chapter 10 |
| Yoxford roundabout | Yes | Yes | Volume 1, Chapter 16 | Volume 2B, Chapter 11 |
| Highway improvements, cycling and rights of way | Yes | Yes | Volume 1, Chapter 17 | Volume 2B, Chapter 12 |

**1.4.2. Volume 2** provides preliminary environmental information which assesses the effects of our Stage 3 proposals, as well as information on related assessments to be carried out. A full environmental impact assessment will be provided with our application for development consent. The purpose of this preliminary information is to assist consultees in understanding the scale, nature and potential environmental effects of the project, in order to inform responses to this consultation.

**1.4.3. Volume 3** provides figures and drawings relating to the preliminary environmental information provided in **Volume 2**.

**1.4.4.** As explained earlier in this chapter, there are some differences to the nature of the proposals for which we will seek development consent, depending on whether we decide to pursue a road-led or rail-led freight management strategy. **Table 1.1** below lists all elements of the Stage 3 proposals on which we are consulting, whether each would be required for a rail-led or road-led strategy, and where relevant information can be found in the consultation documents.

## 1.5. Approach to consultation

**1.5.1.** EDF Energy is consulting on its proposals for Sizewell C in accordance with its detailed **Statement of Community Consultation** (SoCC), which has been agreed with Suffolk Coastal District Council (SCDC) and SCC. As the SoCC explains, we have committed to undertaking a minimum of three formal stages of pre-application consultation prior to submitting our application for development consent, as illustrated in **Figure 1.2**.

**1.5.2.** Stage 3 consultation is planned to run between 4 January and 29 March 2019. Full details of the planned consultation activities are set out in the **Stage 3 Consultation Summary Document.**

**1.5.3.** This consultation explains that there remain some significant choices about aspects of the project and the nature of those choices is carefully set out. Views are invited from the local community and all interested parties.

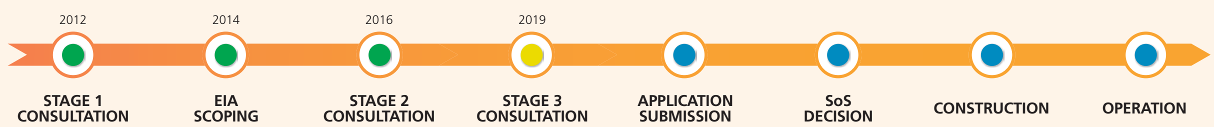
**1.5.4.** In particular, a decision has yet to be made about whether a rail-led or road-led freight management strategy will be adopted. That decision will have significant implications for the proposals for which EDF Energy will seek development consent, as explained earlier. Subject to the outcome of this consultation, further engagement with statutory consultees, and further environmental assessments, EDF Energy intends to make an application for development. Consultation responses, however, can still influence those proposals and it would be extremely helpful to receive as much feedback as possible.

**1.5.5.** Following the submission of the application for development consent, consultation will continue to be an important feature of the planning process. The application will be submitted to the Planning Inspectorate (PINS) who will examine the application and make a recommendation to the Secretary of State who will ultimately determine whether development consent is granted. As part of that process, the PINS will encourage the submission of views from interested parties. The application will be largely examined in writing but it is likely that a series of open floor and issue specific hearings will be held so that the PINS is made fully aware of all the views of interested parties.

**1.5.6.** If stakeholders wish to understand more about the planning process for nationally significant infrastructure projects, further information is available on the PINS's website: http://infrastructure.planninginspectorate.gov.uk/

**1.5.7.** Outside these formal stages of the process we will continue to engage informally with interested parties.

**Figure 1.2** Planning process



## 1.6. Approach to acquisition of land

**1.6.1.** As part of this consultation, EDF Energy will be consulting with land owners whose land would need to be acquired to deliver the proposals. EDF Energy is committed to acquiring all interests in land by private agreement wherever possible. However, in the event that negotiations with some land owners are unsuccessful, EDF Energy would propose to acquire land via compulsory purchase, and will seek the necessary powers in the application for development consent.

## 1.7. Responding to this consultation

### a) Finding out more

**1.7.1.** Copies of the consultation documents (this Stage 3 Consultation Document and the Stage 3 Consultation Summary Document) will be available at the exhibitions (see below) and at the Sizewell C Information Office (48-50 High Street, Leiston, IP16 4EW), which is open 09:30–17:00 Monday – Friday. The documents are also available to view during office hours in the offices of SCC, SCDC, Waveney District and Ipswich Borough Councils and at local public libraries, and are available on the project website (http://sizewell.edfenergyconsultation.info).

**1.7.2.** If you require this information in a different format for accessibility reasons please call 0800 197 6102 or email sizewell@edfconsultation.info

**1.7.3.** In addition to the consultation documents, other tools are available to support engagement with this consultation, including:

- contact the team – call the team on 0800 197 6102 during normal office hours or drop into the Sizewell C Information Office during the hours listed above;
- newsletters – EDF Energy will publicise the consultation programme, including details of events and how people can respond, in its Sizewell C Newsletter;
- local media – EDF Energy will publicise the consultation activities in the local media; and
- public exhibitions – EDF Energy will hold exhibitions and events. An early event will be held at Sizewell. Staffed exhibitions using presentation boards and literature to explain the strategies and proposals will be held at: Leiston; Theberton; Hacheston; Yoxford; Stratford St Andrew; Darsham; Middleton; Wickham Market; Aldeburgh; Saxmundham; Woodbridge; Southwold; Trimley St Martin.

**1.7.4.** The exhibition material will remain available for the public to view at the Sizewell C Information Office after the close of the formal consultation, as well as being available to download from the project website:

- presentations–town and parish councils can request meetings and presentations during the consultation period, which EDF Energy will seek to accommodate where possible;
- drop-in sessions–for villages or towns which are not exhibition locations, or those communities which require greater opportunities to engage with the team, EDF Energy will seek to accommodate requests where possible. These sessions would operate like surgeries, where local people can have discussions with members of the EDF Energy team; and
- social media–EDF Energy has a Twitter account and followers will be updated on the latest events and news during the public consultation (@edfesizewellc).

### b) Responding to this consultation

**1.7.5.** EDF Energy encourages you to respond to this Stage 3 consultation as feedback will help it to further evolve its strategies and proposals. Those wishing to respond can:

- complete a questionnaire either online (http://sizewell.edfenergyconsultation.info) or post a completed form to FREEPOST SZC CONSULTATION (no stamp or further address required);
- email comments to sizewell@edfconsultation.info;
- post comments to FREEPOST SZC CONSULTATION (no stamp or further address required); and
- call 0800 197 6102 during normal office hours.

The deadline for responses to this Stage 3 consultation is 29 March 2019.

# 2. Project Overview

## 2.1. Introduction

**2.1.1.** The Sizewell C site is located on the Suffolk Coast, approximately half way between Felixstowe and Lowestoft, to the north-east of the town of Leiston (refer to **Figure 2.1**). The proposed nuclear power station would be located immediately to the north of the existing Sizewell B power station and would comprise two United Kingdom European Pressurised Reactor (UK EPR™) units with an expected net electrical output of approximately 1,670 megawatts (MW) per unit, giving a total site capacity of approximately 3,340MW. The design of the UK EPR™ units is based on technology used successfully and safely around the world for many years, including innovations to enhance performance and safety. The UK EPR™ design has passed the Generic Design Assessment (GDA) process undertaken by United Kingdom (UK) regulators, and has been licensed and permitted at Hinkley Point C. Once operational, Sizewell C would be able to generate enough electricity to supply approximately 6 million homes (about 20% of Britain's homes).

**2.1.2.** In addition to the key operational elements of the power station, the project comprises other permanent and temporary developments to support the construction and operation of the power station.

**2.1.3.** We have developed socio-economic strategies and transport strategies to manage the people and freight movements associated with the construction phase of the project (as set out in **Chapters 4** and **5** respectively of this volume).

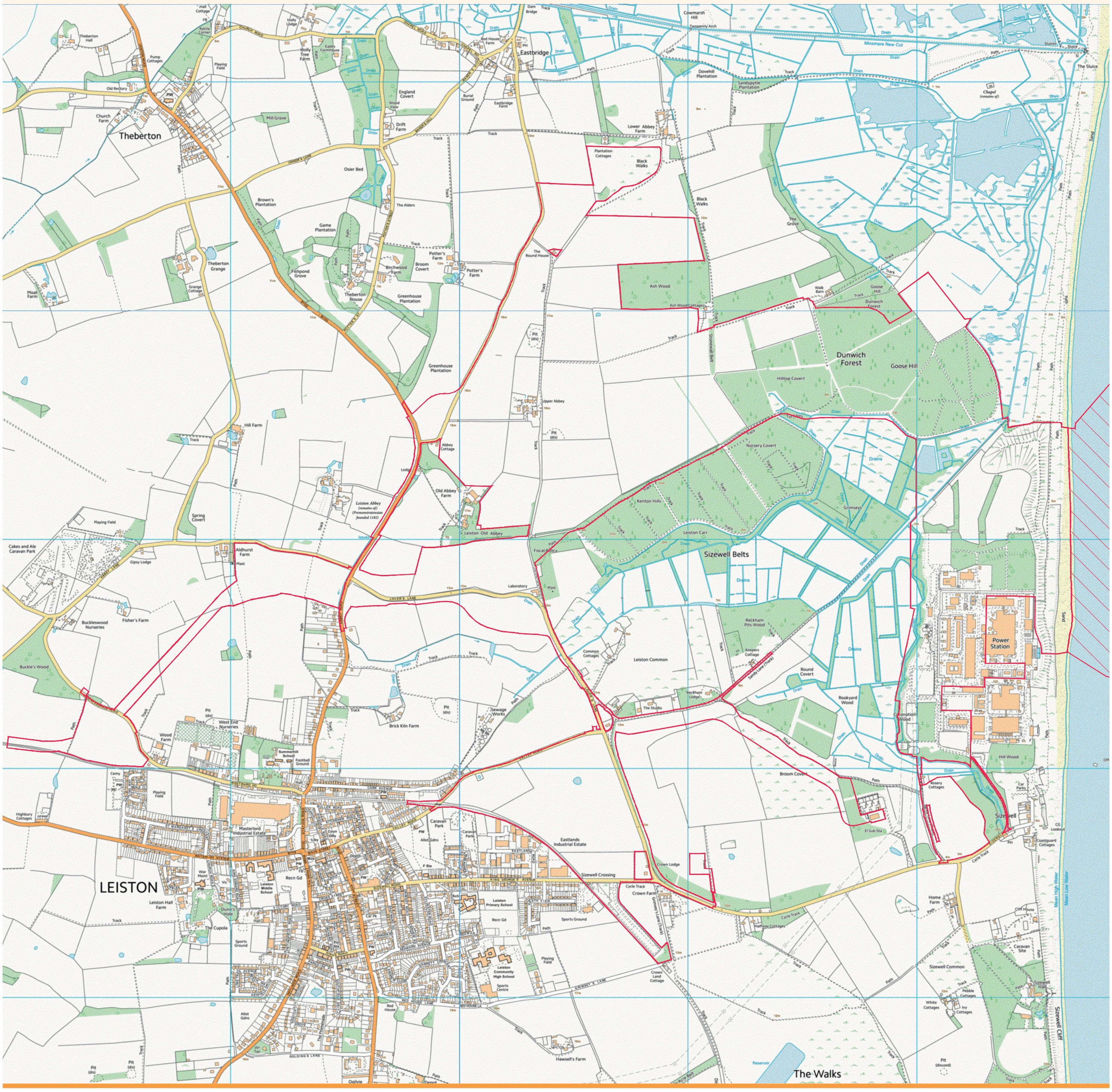
**2.1.4.** The proposals put forward in this Stage 3 consultation build on those consulted on in our Stage 2 consultation, taking into account your feedback and further technical work. However, a key driver of changes to some of our proposals is the evolution of our freight management strategy. As explained in **Chapter 1** of this volume, we have identified that the "marine-led" strategy consulted on as an option in the Stage 2 consultation would be challenging to deliver because of its impact on the marine environment and related potential to impact the project's construction programme and operational date. A marine-led strategy therefore has not been taken forward as part of our proposals in this Stage 3 consultation.

**2.1.5.** At Stage 3, we are consulting on two alternative transport options for the management of freight:

- a "rail-led" strategy; and
- a "road-led" strategy.

**2.1.6.** For reasons explained in **Chapter 5** of this volume, the nature of the infrastructure required to support these two strategies is different (refer to **Figure 2.2**). In this chapter we summarise all elements of the proposals being consulted on, and note whether each is required under a road-led or rail-led strategy. Some rail improvements will be required even if the road-led strategy is adopted, and some highway works will be required even if the rail-led strategy is adopted.

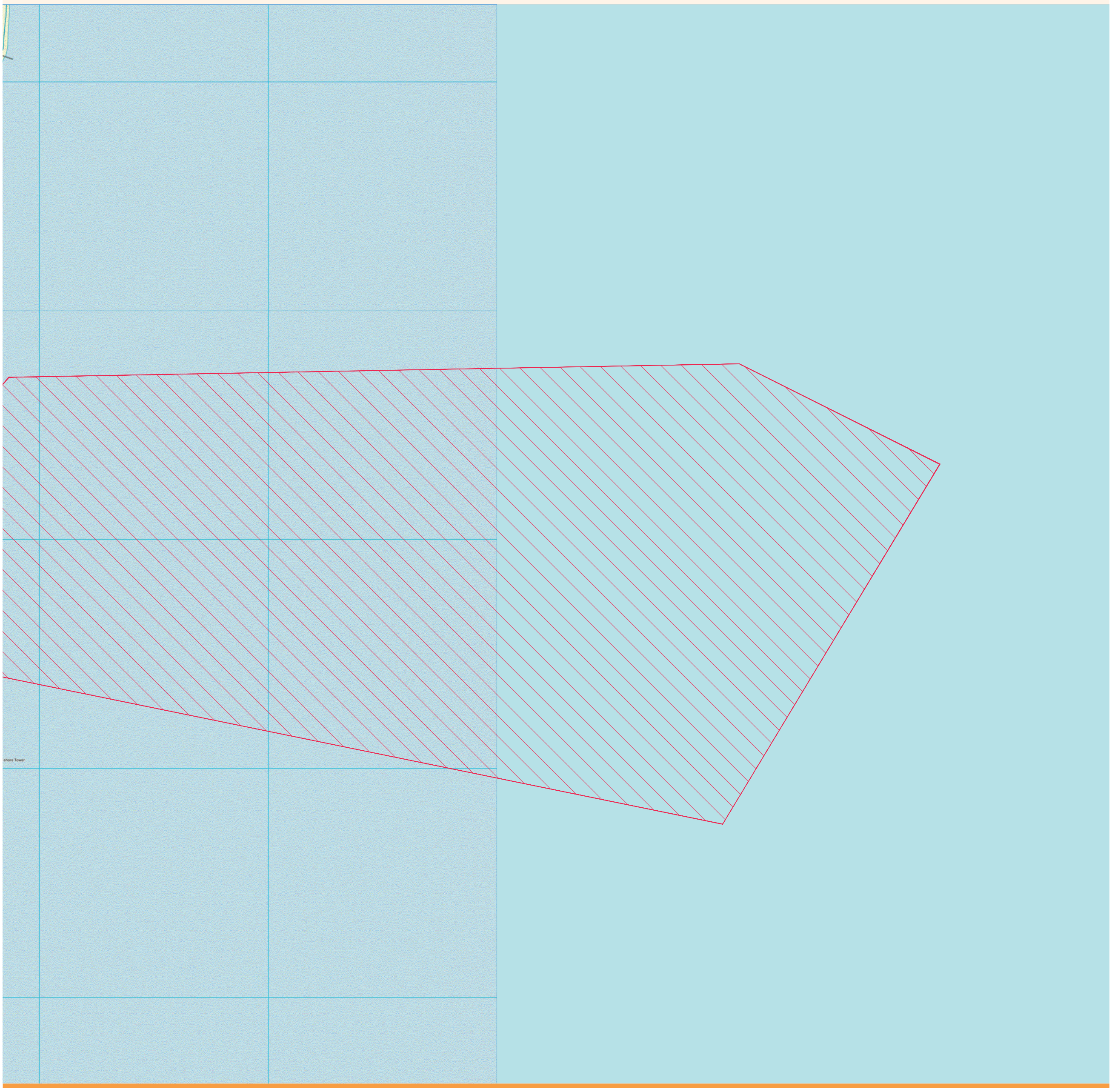
# **Figure 2.1** Site context



**KEY**

MAIN DEVELOPMENT SITE BOUNDARY

INDICATIVE AREA: COOLING WATER INFRASTRUCTURE



**2.1.7.** We do not yet know with certainty that the rail-led strategy is deliverable, particularly within the timescale necessary to serve the project. However, we are working with Network Rail to confirm the deliverability of the various improvements to rail infrastructure that would be necessary. We wish at this stage also to receive feedback from this consultation on the implications of a rail-led strategy so that we can make a fully informed decision on which strategy to take forward into the application for development consent.

**2.1.8.** As explained in **Chapter 1** of this volume, we have also tested what the effects of the project might be if our workforce numbers were to increase from our central estimate of 5,600 at peak on the main development site to a higher figure of up to 7,900 workers. Those effects are reported mainly in **Chapters 4** and **5** of this volume. That higher assessment case, however, would not affect the scale of the physical components of the project. This can be explained principally as follows:

- the accommodation campus has been revised and sized to respond to the physical characteristics of its site – if more accommodation was needed for workers EDF Energy would not expand the campus but we anticipate that local landowners would respond with proposals to create or extend one or more local caravan parks;
- there would be an increased need for parking at the park and ride site but we have checked and the site areas already proposed for the park and ride sites could accommodate increased numbers (up to 1,250 spaces) without the need to be extended; and
- any change in transport effects would be confined to the transport effects of workers and no effect would arise on HGV traffic levels. It is HGV traffic which largely drives the need for major road improvements and so, if there were to be an increase in worker numbers, it is not expected to require any adjustment to our road infrastructure proposals.

**2.1.9.** Against this background, therefore, the principal characteristics of our road or rail strategy would be unaffected. Those characteristics are shown in **Figure 2.2** below.

## **Figure 2.2** Stage 3 freight management strategy options

**RAIL - LED**

- A12 - Two village bypass
- A12 / B1122 - Yoxford roundabout
- B1122 - Theberton bypass
- Other minor road improvements
- Rail - Green rail route to the temporary construction area
- Rail - East Suffolk line and branch line upgrades and level crossings works
- Rail - Sizewell Halt or rail siding at LEEIE for early years
- Beach landing facility

HGV operation 07:00 – 23:00
HGVs 225 average at peak/450 busiest day
Up to 5 trains a day

**ROAD - LED**

- A12 - Two village bypass
- A12 / B1122 - Yoxford roundabout
- B1122 - Sizewell link road
- Other minor road improvements
- Freight management facility
- Rail - East Suffolk line and branch line upgrades and level crossings works
- Rail - Sizewell Halt or rail siding at LEEIE for construction period
- Beach landing facility

HGV operation potential for extended hours
HGVs 375 average at peak/750 busiest day
Up to 2 trains a day

## 2.2. Main development site

**2.2.1.** Our proposals for the main nuclear development site are set out in **Chapter 7** of this volume**.** We provide an explanation of how nuclear power generation works, an overview of nuclear safety processes and a summary of the decommissioning stage of the project after its 60-year life. The design principles that the project will adhere to and how the power station could look once it is operational are described (refer to **Figure 2.3**). We explain how the site could evolve during the construction phase and provide details of the proposed temporary worker accommodation (campus and caravan site). The role of feedback from Stage 2 and further engineering and design work is described to explain how our proposals have evolved (as summarised in **Chapter 1** of this volume). **Figures 2.4** and **2.5** show indicative configurations of the construction site in the event that rail-led or road-led freight management strategies are adopted.

**2.2.2.** As explained in the Stage 1 and 2 consultations, EDF Energy Nuclear Generation Limited, the owner of Sizewell B, intends to relocate the Sizewell B facilities that are currently on the Sizewell C site. Whilst plans to secure planning permission for these works continue, we will seek consent for the works via an application for development consent in order to maintain flexibility in the planning process and reduce programme risks.

**2.2.3.** Preliminary Environmental Information in relation to the main development site can be found in **Volume 2A, Chapter 2**.

## **Figure 2.3** Operational masterplan

**KEY**

EXISTING

- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- VEGETATION/WOODLAND
- WET GRASSLAND/REEDBED
- LOWLAND HEALTH MOSAIC
- PONDS, SCRAPES, DRAINAGE CHANNELS
- SHINGLE BEACH AND VEGETATED DUNE

PROPOSED

- VEGETATION/WOODLAND
- LOWLAND HEALTH MOSAIC
- IMPROVED PASTURE
- VEGETATED EMBANKMENT
- PONDS, SCRAPES, DRAINAGE CHANNELS
- VEGETATED SEA DEFENCE STRUCTURE

## **Figure 2.4** Construction masterplan: rail-led strategy


### KEY

MAIN POWER STATION PLATFORM

**MAIN LAND USES**

- MAIN POWER STATION PLATFORM
- CONTRACTOR COMPOUNDS
- NATIONAL GRID CONSTRUCTION WORKING AREA
- MATERIALS STORAGE AREAS
- BORROW PIT AREAS
- ACCOMMODATION CAMPUS
- SITE ENTRANCE HUB
- WATER MANAGEMENT ZONE

**SITE INFRASTRUCTURE**

- ACCESS ROAD
- HAUL ROAD
- EXISTING/ALTERNATIVE RAIL HEAD
- RAIL ROUTE AND CORRIDOR

**OTHER LAND USES**

- EXISTING VEGETATION TO BE RETAINED (WOODLAND/HEDGEROWS/TREES)
- EXISTING PRINCIPAL WOODLAND AREAS OUTSIDE REDLINE BOUNDARY
- PROPOSED CONSTRUCTION PHASE PLANTING
- BUFFER ZONE


Water Management Zone
BORROW PIT FIELD 3
Water Management Zone
Access Track
NORTH SEA
BORROW PIT FIELD 4 / MAIN STOCKPILE AREA
Ash Wood
Great Mount Wood
Dunwich Forest
Water Management Zone
Ash Wood Cottages
CONTRACTOR COMPOUNDS
MAIN STOCKPILE AREA
SSSI Crossing
Goose Hill
COMMON USER FACILITIES
CONTRACTOR COMPOUNDS
Sizewell drain
Kenton Hills
Grimseys
MAIN POWER STATION PLATFORM
Realigned ditch
Perimeter construction access road
National grid construction working area
Sizewell B Power Station
Common Cottages
Keepers Cottage
Rackham Lodges
The Studio
Sizewell A Power Station
Greater Gabbard substation
SIZEWELL VILLAGE
Galloper substation
PILLBOX FIELD
Crown Lodge
NORTH SEA
Existing rail head

## **Figure 2.5** Construction masterplan: road-led strategy


### KEY

MAIN POWER STATION PLATFORM

MAIN LAND USES

- MAIN POWER STATION PLATFORM
- CONTRATOR COMPOUNDS
- NATIONAL GRID CONSTRUCTION WORKING AREA
- MATERIALS STORAGE AREAS
- BORROW PIT AREAS
- ACCOMMODATION CAMPUS
- SITE ENTRANCE HUB
- WATER MANAGEMENT ZONE

SITE INFRASTRUCTURE

- ACCESS ROAD
- HAUL ROAD
- EXISTING/ALTERNATIVE RAIL HEAD

OTHER LAND USES

- EXISTING VEGETATION TO BE RETAINED (WOODLAND/HEDGEROWS/TREES)
- EXISTING PRINCIPAL WOODLAND AREAS OUTSIDE REDLINE BOUNDARY
- PROPOSED CONSTRUCTION PHASE PLANTING
- BUFFER ZONE


Water Management Zone
BORROW PIT FIELD 3
Ash Wood
Ash Wood Cottages
Water Management Zone
Great Mount Wood
Access Track
Dunwich Forest
Water Management Zone
NORTH SEA
CONTRACTOR COMPOUNDS
MAIN STOCKPILE AREA
Goose Hill
SSSI Crossing
COMMON USER FACILITIES
CONTRACTOR COMPOUNDS
Sizewell drain
Kenton Hills
Grimseys
MAIN POWER STATION PLATFORM
Realigned ditch
Perimeter construction access road
National grid construction working area
Sizewell B Power Station
Common Cottages
Keepers Cottage
Reckham Lodges
The Studio
Sizewell A Power Station
Greater Gabbard substation
Galloper substation
PILLBOX FIELD
SIZEWELL VILLAGE
NORTH SEA
Crown Lodge

## 2.3. Green rail route

**2.3.1.** The green rail route is proposed as part of the rail-led strategy only. Our proposals for the green rail route are set out in **Chapter 8** of this volume. Our proposed design remains largely as described in our Stage 2 consultation, except that either part of Buckleswood Road will be stopped up and a new footbridge will be constructed (refer to **Figure 2.6**); or a new level crossing will be provided on Buckleswood Road (refer to **Figure 2.7**). The route would run from west to east, from Saxmundham Road to Buckleswood Road; Buckleswood Road to B1122 (Abbey Road); and B1122 (Abbey Road) to the main development site.

**2.3.2.** Provision of the green rail route would require:

- part of Buckleswood Road to be stopped up to vehicular traffic and the construction of a new footbridge connecting the intersected parts of Buckleswood Road or a new level crossing on Buckleswood Road;
- the north-south footpath between Saxmundham Road and Abbey Lane (E-363/003/0) to be diverted across the new railway line via the new Buckleswood Road level crossing or footbridge;
- the construction of a new level crossing where the new railway line crosses the B1122 (Abbey Road);
- the north-south footpath linking Abbey Lane and Westward Ho (E-363/006/0) to be diverted across the new railway line via the new level crossing on the B1122 (Abbey Road);
- the north-south footpath linking Abbey Lane to the B1122 (Abbey Road) (E-363/010/0) to be diverted across the new railway line via the new level crossing on the B1122 (Abbey Road); and
- the relocation of the junction of the B1122 (Abbey Road) and Lover's Lane.

**2.3.3.** It is anticipated that the green rail route line would be privately owned and operated by EDF Energy, with its construction, operation and maintenance being EDF Energy's responsibility. The rail line would be designed and constructed to Network Rail's standards. A maximum train speed of 25 miles per hour (mph) has been assumed along the length of the route, although trains would run at lower speeds on certain sections.

**2.3.4.** The railway line would be constructed early in the construction phase of the project. It is envisaged that construction of the rail infrastructure itself would start at the eastern end and progress westwards, with the main contractor's compound situated at the eastern end (within the temporary construction area) and a smaller one at the western end.

**2.3.5.** Once construction of the power station is complete, the green rail route would be removed and the land on which it was located would be restored.

**2.3.6.** Preliminary environmental information in relation to the green rail route can be found in **Volume 2A**, **Chapter 3.**

## Figure 2.6 Green rail route masterplan: Option 1 closure of Buckleswood Road


**KEY**

- STAGE 3 CONSULTATION BOUNDARY
- GREEN RAIL ROUTE
- TEMPORARY CONTRACTOR COMPOUND
- GRASSED SPOIL BUND
- GRASSED AREAS
- PROPOSED/EXISTING PLANTING
- EXISTING PUBLIC RIGHT OF WAY
- PROPOSED DIVERTED PUBLIC RIGHT OF WAY

**Figure 2.7** Green rail route masterplan: Option 2 proposed level crossing


**KEY**

- STAGE 3 CONSULTATION BOUNDARY
- GREEN RAIL ROUTE
- TEMPORARY CONTRACTOR COMPOUND
- GRASSED SPOIL BUND
- GRASSED AREAS
- PROPOSED/EXISTING PLANTING
- EXISTING PUBLIC RIGHT OF WAY
- PROPOSED DIVERTED PUBLIC RIGHT OF WAY

## Figure 2.8 Land east of eastlands industrial estate: Option 1 Sizewell Halt


**KEY**

- STAGE 3 CONSULTATION BOUNDARY
- ACCESS ROAD
- BUFFER ZONE (FADED AERIAL)
- EXISTING PUBLIC RIGHT OF WAY
- OFF-ROAD CYCLE/BRIDLEWAY
- LOGISTICS COMPOUND
- TOPSOIL STOCKPILE
- MATERIAL STORAGE AREAS
- RECONFIGURED RAIL HEAD
- AGGREGATE CONVEYORS

## **Figure 2.9** Land east of eastlands industrial estate: Option 2 rail siding


### KEY

- STAGE 3 CONSULTATION BOUNDARY
- ACCESS ROAD
- BUFFER ZONE (FADED AERIAL)
- EXISTING PUBLIC RIGHT OF WAY
- OFF-ROAD CYCLE/BRIDLEWAY
- LOGISTICS COMPOUND
- TOPSOIL STOCKPILE
- MATERIAL STORAGE AREAS
- RECONFIGURED RAIL HEAD
- AGGREGATE CONVEYORS

## 2.4. Other rail improvements and changes to level crossings

**2.4.1. Chapters 8** and **9** of this volume sets out the other rail improvements and changes to level crossings which would be required to support the road-led and rail-led strategies (refer to **Figure 1.1**). PEI in relation to these proposals can be found in **Volume 2A**, **Chapter 4.**

### a) Sizewell Halt or new rail siding

**2.4.2.** Regardless of whether the road-led or rail-led strategy is adopted, there will be a need for construction materials to be delivered to the main development site in the period prior to completion of either the green rail route (rail-led strategy) or the Sizewell link road (road-led strategy). EDF Energy is considering using the existing Sizewell Halt rail terminal on the Saxmundham–Leiston branch line during this period, with some reconfiguration of the existing railhead to accommodate longer trains (refer to **Figure 2.8**). Alternatively, EDF Energy is considering the construction of a new rail siding adjacent to the existing branch line on the land east of Eastlands Industrial Estate (LEEIE) (refer to **Figure 2.9**). Either option could support up to two freight trains per day.

**2.4.3.** Freight delivered to Sizewell Halt would be transferred by Heavy Goods Vehicle (HGV) along Lover's Lane to the main development site. Some potential amendments to the Sizewell Halt layout may be required to facilitate deliveries. This includes reconfiguration of the existing railhead required in order to accommodate longer trains and provision of an overhead conveyor to transfer freight material back into the LEEIE.

**2.4.4.** Freight delivered to the new rail siding adjacent to the existing branch line on the LEEIE would also be transferred by HGV along Lover's Lane to the main development site.

**2.4.5.** Neither Sizewell Halt nor the new rail siding would have sufficient capacity to fully meet the requirements for rail-delivered freight during the whole period of main site construction in a rail-led scenario, as at peak construction up to five freight trains per day would be required under the rail-led strategy. It is for this reason that either the green rail route or the Sizewell link road is required to deal with peak construction.

**2.4.6.** Following completion of construction of Sizewell C, the reconfigured Sizewell Halt would remain (although the overhead conveyor would be removed) if that option forms part of our proposals but the new rail siding would be removed if that option instead forms part of our proposals.

### b) Upgrades to the East Suffolk line and changes to level crossings

**2.4.7.** If the rail-led strategy is adopted, infrastructure upgrades and changes to level crossings will be required to the East Suffolk line in order to accommodate up to five freight trains per day which are expected at peak construction, once the green rail route is operational. These upgrades would include:

- a passing loop at a location between Ipswich and Saxmundham;
- signalling upgrades;
- a track crossover at Saxmundham;
- up to 45 level crossings to be upgraded or closed, and rights of way to be diverted; and
- strengthening works to six bridges.

**2.4.8.** EDF Energy does not expect that any upgrades to this line will be required under the road-led strategy. However, Network Rail is carrying out further assessments and it is possible that some of the infrastructure upgrades required under the rail-led strategy may also be required under the road-led strategy.

**2.4.9.** All of these upgrades and changes would be retained following completion of construction of Sizewell C.

### c) Saxmundham-Leiston branch line and changes to level crossings

**2.4.10.** In both the rail-led or road-led strategies, there would be a need for the existing track on the Saxmundham to Leiston branch line to be repaired or replaced to the standard required for freight transport. There would also be a need for nine level crossings to be upgraded. These changes would be retained following completion of construction of Sizewell C.

## Figure 2.10 Sizewell link road masterplan


## 2.5. Sizewell link road

**2.5.1.** The Sizewell link road (refer to **Figure 2.10**) is proposed as part of the road-led strategy only. Details of our proposals are set out in **Chapter 10** of this volume. Further transport assessment work has led us to conclude that for the road-led strategy the higher level of HGVs on the roads (375 HGVs on average at peak as opposed to 225 HGVs at peak under the rail-led strategy) would require the construction of this separate new access road from the A12 to the B1122 east of Theberton. The new road would originate south of Yoxford and bypass Middleton Moor and Theberton. The proposed route incorporates the design of the Theberton bypass (which is now proposed as part of the rail-led strategy in response to feedback at the Stage 2 consultation, see **section 2.6**) and extends the route further to bypass Middleton Moor, joining the A12 south of Yoxford.

**2.5.2.** The road would be approximately 6.8 kilometres (km) in length and 7.3 metres (m) wide with 1m hardstrips, 2.5m wide verges, earthworks where needed, and a 5m berm. We are, however, consulting on a wider area during this Stage 3 consultation including the buffer zone shown on **Figure 2.10**, as the design and landscaping mitigation has yet to be fully finalised, and in particular we wish to engage with land owners in relation to works which might accommodate the access works for their retained land.

**2.5.3.** The Sizewell link road would be open to public use alongside construction traffic associated with the project. After completion of the power station, it would be retained as a lasting legacy of the project.

**2.5.4.** Preliminary environmental information in relation to the Sizewell link road can be found in **Volume 2A, Chapter 5.**

## Figure 2.11 Theberton bypass masterplan


## 2.6. Theberton bypass

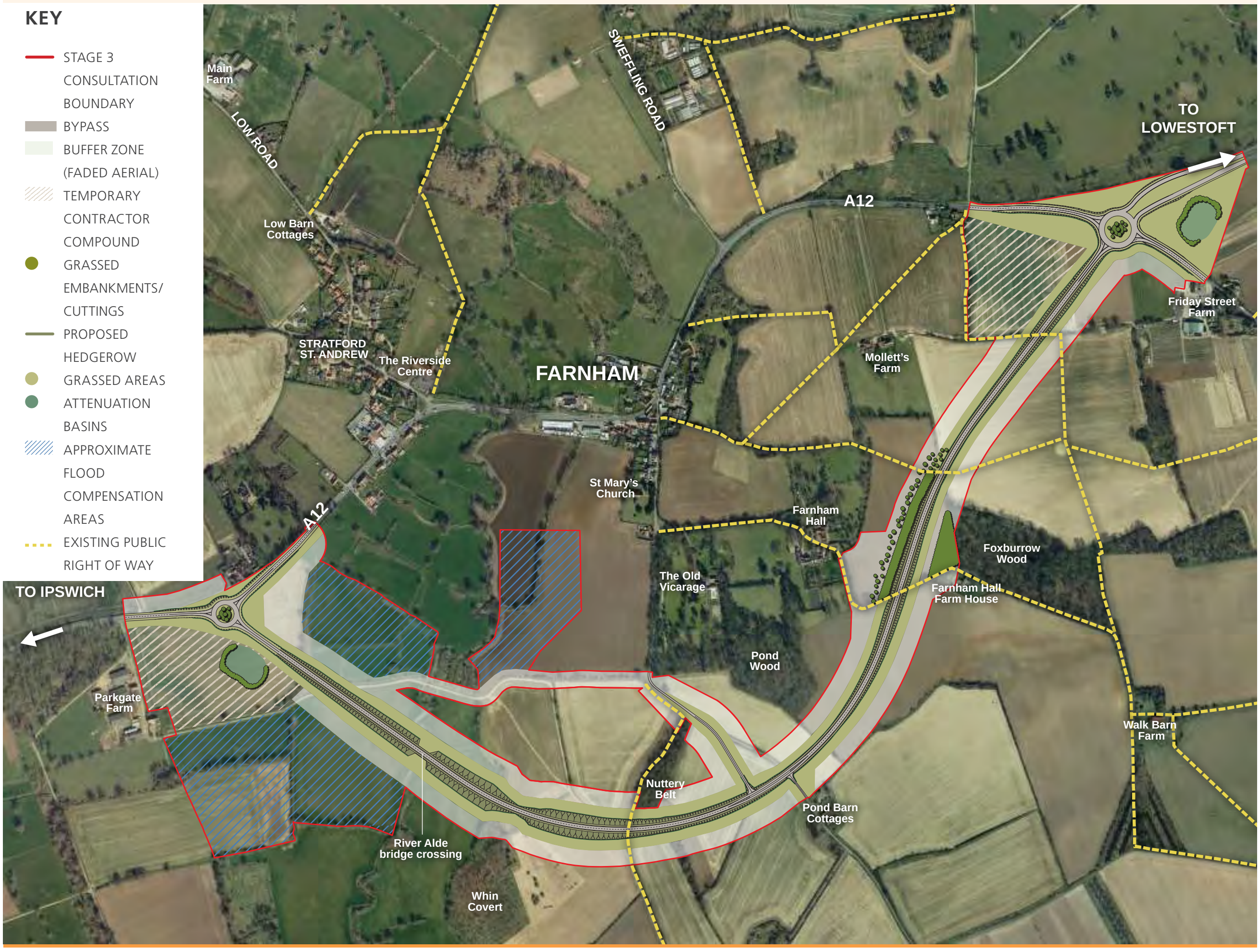
**2.6.1.** The Theberton bypass (refer to **Figure 2.11**) is proposed as part of the rail-led strategy only. Details of our proposals are set out in **Chapter 11** of this volume. Our transport assessments indicate that the volume of freight traffic generated by a rail-led strategy at peak would not justify the construction of the Sizewell link road. However, we recognise that there would be benefits in providing a Theberton bypass to mitigate the impact of HGV traffic even if the rail-led strategy is pursued. This bypass therefore forms part of our Stage 3 proposals for a rail-led strategy in place of the minor safety improvements along the B1122 which we had proposed in our Stage 2 consultation (with the exception of highway improvements at Mill Street, which are proposed to support both strategies).

**2.6.2.** The road would be approximately 2.6km in length and 7.3m wide with 1m hard strips, 2.5m wide verges, earthworks where needed and a 5m berm. We are, however, consulting on a wider area during this Stage 3 consultation including the buffer zone shown on **Figure 2.11**, as the design and landscaping mitigation has yet to be fully finalised, and in particular we wish to engage with land owners in relation to works which might accommodate the access works for their retained land.

**2.6.3.** The Theberton bypass would be open to public use alongside construction traffic associated with the project. After completion of the power station, it would be retained as a lasting legacy of the project.

**2.6.4.** Preliminary environmental information in relation to the Theberton bypass can be found in **Volume 2A**, **Chapter 6**.

## Figure 2.12 Two village bypass masterplan




## 2.7. Two village bypass

**2.7.1.** The two village bypass of Farnham and Stratford St Andrew was one of the options consulted on during the Stage 2 consultation. It has been selected to be taken forward as part of our Stage 3 proposals under both the rail-led or road-led strategies. The scheme proposed is described in **Chapter 12** of this volume.

**2.7.2.** The route would bypass the villages of Farnham and Stratford St Andrew with a new single carriageway road to the south (refer to **Figure 2.12**). Once operational, the bypass would form a new section of the A12. The proposed route runs approximately 2.4 km across predominantly agricultural land to the south of the existing A12, departing the A12 to the west of Stratford St Andrew via a new three arm roundabout near Parkgate Farm and re-joining the A12 with a second roundabout to the east of Farnham at the A12/ A1094 Friday Street junction. The proposed route would cross the River Alde, pass to the south of both Nuttery Belt and Pond Wood and pass between Foxburrow Wood and Hall Cottages.

**2.7.3.** The road would be 7.3m wide with 1m hardstrips, 2.5m wide verges, earthworks where needed and a 5m berm. We are, however, consulting on a wider area during this Stage 3 consultation including the buffer zone shown on **Figure 2.12**, as the design and landscaping mitigation has yet to be fully finalised, and in particular we wish to engage with land owners in relation to works which might accommodate the access works for their retained land.

**2.7.4.** The two village bypass would be open to public use alongside construction traffic associated with the project. After completion of the power station, it would be retained as a lasting legacy of the project.

**2.7.5.** Preliminary environmental information in relation to the two village bypass can be found in **Volume 2B**, **Chapter 7.**

## Figure 2.13 Northern park and ride (Darsham) masterplan


## 2.8. Park and ride facilities

**2.8.1.** We confirm our commitment to providing park and ride facilities to reduce the amount of additional traffic generated by the construction workforce on local roads and through local villages. The two park and ride facilities consulted on in our Stage 2 consultation remain part of our preferred proposals: one at Darsham for construction workers approaching Sizewell from the north on the A12 and the other at Wickham Market for those approaching from the south on the A12. Both park and ride facilities are proposed in connection with the rail-led and the road-led strategies.

**2.8.2.** EDF Energy's Gravity Model, which estimates the residential location of the peak construction workforce, has informed the required number of car parking spaces at each of the park and ride facilities. As the proposals have developed, the Gravity Model has evolved and now indicates that slightly more car parking spaces could be required at the park and ride sites than were initially proposed. As such, the proposals presented in this Stage 3 consultation allow car parking areas for up to 1,250 cars at each site. The overall size of the sites has, however, not changed since the Stage 2 consultation.

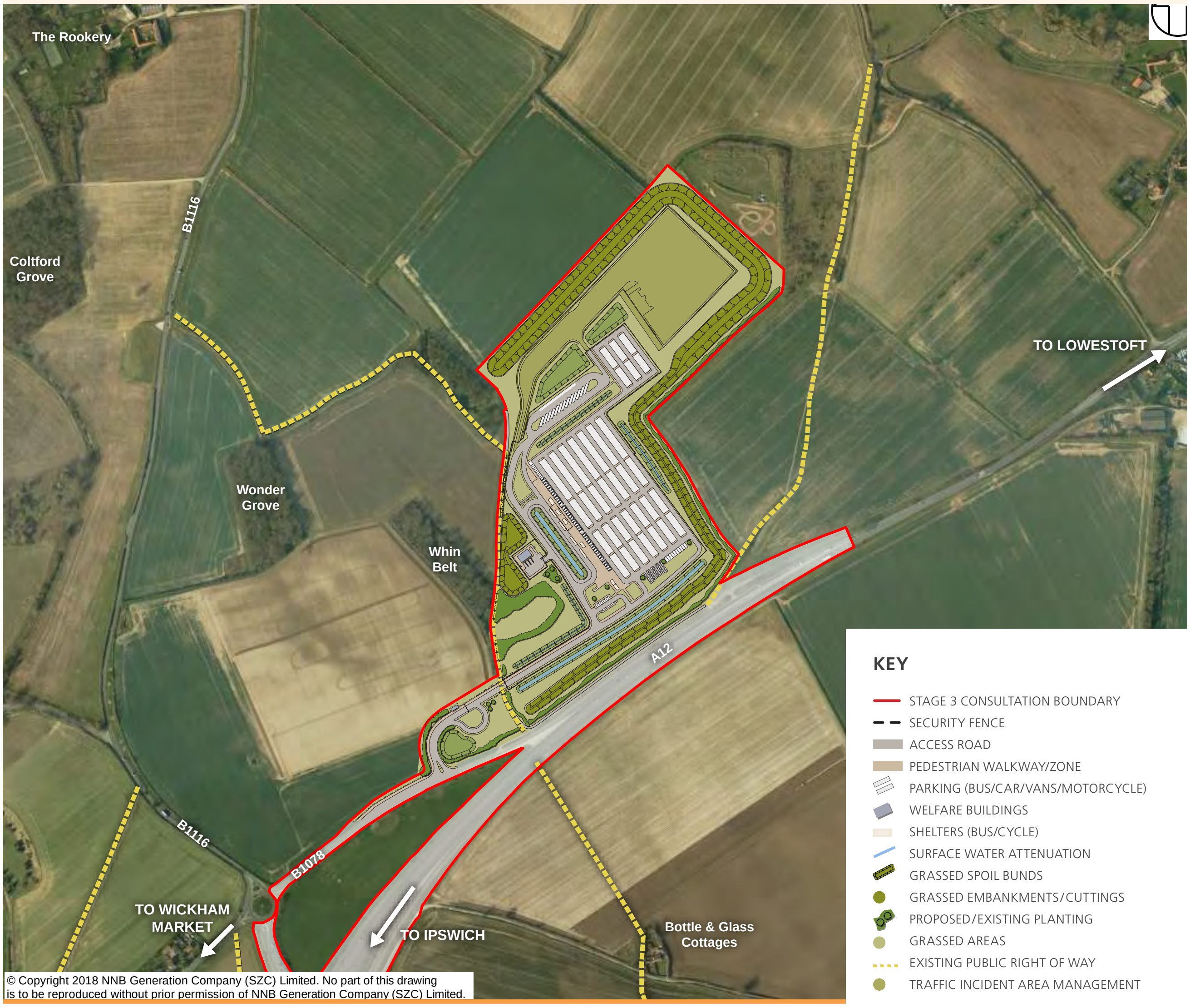
**2.8.3.** Following completion of construction of the power station, the use of both park and ride sites would cease and the sites would be restored to agricultural use.

### a) Northern park and ride site

**2.8.4.** **Chapter 13** of this volume sets out our proposals for the northern park and ride facilities for up to 1,250 cars (refer to **Figure 2.13**). The Stage 2 proposals were generally supported by the majority of respondents and statutory consultees. However, in light of concerns expressed by residents living on the A12 in close proximity to the proposals, and to local authority concerns about the capacity and performance of the proposed access from the A12, we are now proposing a roundabout access located further north along the A12 to the north of Willow Marsh Lane.

**2.8.5.** Preliminary environmental information in relation to the northern park and ride can be found in **Volume 2B**, **Chapter 8**.

**Figure 2.14** Southern park and ride (Wickham Market) masterplan



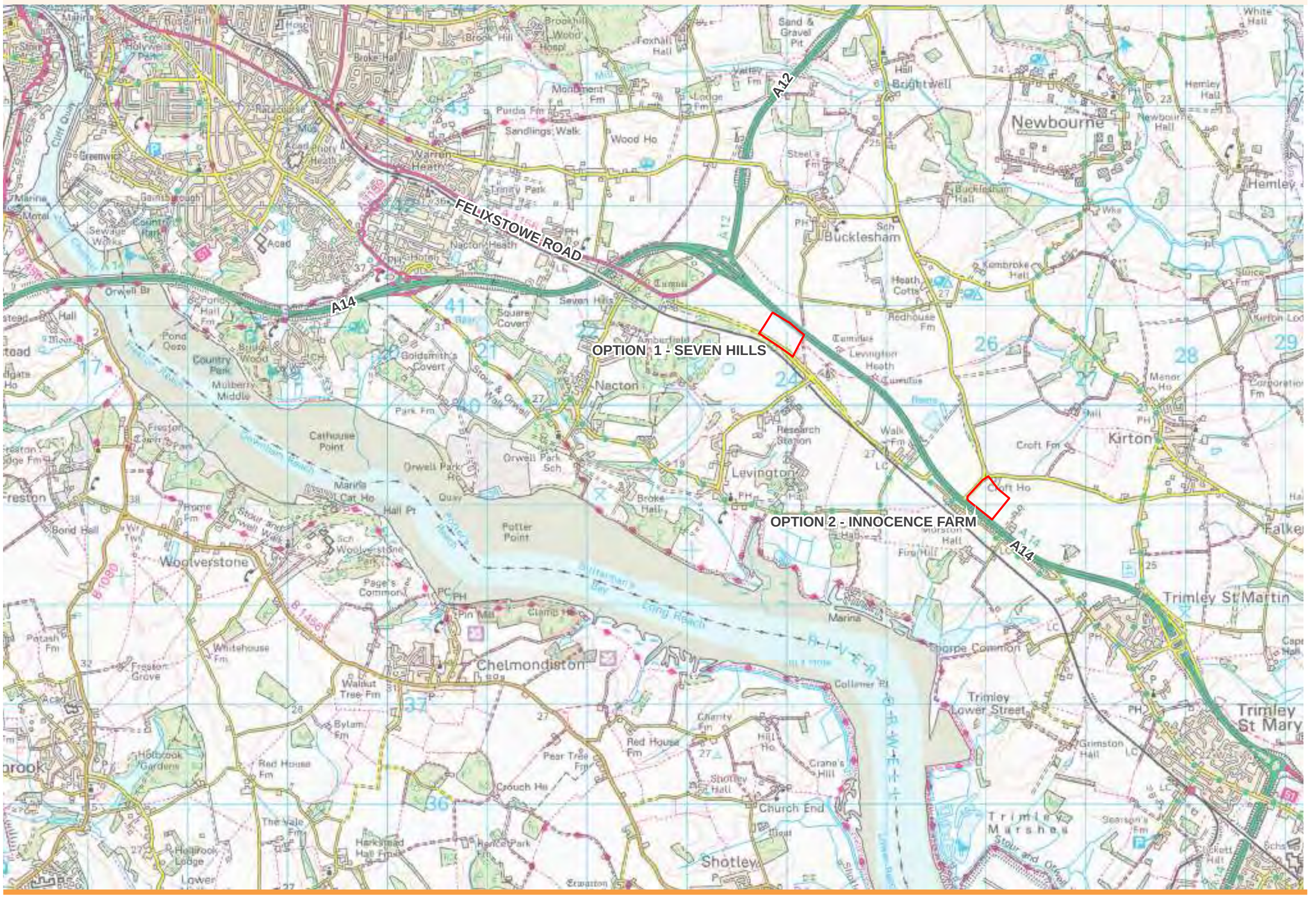

### b) Southern park and ride site

**2.8.6. Chapter 14** of this volume sets out our proposals for the southern park and ride facilities for up to 1,250 cars (refer to **Figure 2.14**). At Stage 2, there was some support for the location of the facility at Wickham Market, however specific queries were raised regarding traffic flows on the B1078 through Wickham Market. Delays and queuing on the B1078 between Border Cot Lane and the River Deben Bridge in Wickham Market was reported as an existing problem. Two alternative mitigation measures are now proposed which would alleviate the effect of Sizewell C traffic flow along this route:

- temporary removal and replacement of on-street parking on the B1078 between Border Cot Lane and River Deben Bridge; or
- improvements to Valley Road and Easton Road.

**2.8.7.** Preliminary environmental information in relation to the southern park and ride can be found in **Volume 2B, Chapter 9.**

## Figure 2.15 Freight management facility site options




## 2.9. Freight management facility

**2.9.1. Chapter 15** of this volume sets out our proposals for a freight management strategy, which would support the road-led strategy. The freight management facility (FMF) would accommodate approximately 150 parking spaces for HGVs. It would assist in allowing a controlled pattern of deliveries to site with reduced movements during peak or sensitive hours on the network. It could provide facilities where paperwork and goods can be checked prior to delivery to the main development site, and a location where HGVs are held while they wait to enter the site or in the event of an accident on the local road network which prevented access to the site. Two alternative sites, described below, are being considered in this Stage 3 consultation (refer to **Figure 2.15**).

**2.9.2.** When the chosen site is no longer required for use as a FMF by EDF Energy it is expected that it would be returned to greenfield.

**2.9.3.** Preliminary environmental information in relation to both alternatives can be found in **Volume 2B**, **Chapter 10.**

### a) Option 1: A12/A14 Seven Hills site

**2.9.4.** This option is approximately 9.9 hectares (ha) in area and is located to the southeast of the A12/A14 junction near Ipswich with local roads along its western (A1156) and southern (Old Felixstowe Road) boundaries. The site is accessed off the Old Felixstowe Road.

### b) Option 2: Innocence Farm site

**2.9.5.** This option is approximately 9ha in area and forms part of a larger (115ha) site which is located adjacent to the communities of Kirton and Trimley St Martin at Innocence Farm and immediately to the north of the A14.

**Figure 2.16** Yoxford roundabout masterplan


## 2.10. Yoxford roundabout

**2.10.1. Chapter 16** of this volume sets out our proposal for a new roundabout in Yoxford which is required to support both the rail-led and road-led strategies. The proposed roundabout (refer to **Figure 2.16**) would replace the existing A12/B1122 ghost island junction in Yoxford. The proposed roundabout is approximately 100m north of the existing junction and would be built on agricultural land to the east of the existing A12. The B1122 would be realigned to join the roundabout via a new section of road that starts north of "The Cottage" shown on **Figure 2.16**. The A12 approach roads leading in to the roundabout would be 7.3m in width, with the B1122 approach road 6m wide. All three of the approaches would flare to create additional width at the roundabout give-way line. The design of the roundabout is very similar to the proposals put forward at the Stage 2 consultation. However, minor amendments have been required based on our review of utilities records and topographic surveys.

**2.10.2.** Preliminary environmental information in relation to the Yoxford roundabout can be found in **Volume 2B**, **Chapter 11.**

## 2.11. Highway improvements, cycling and rights of way

**2.11.1.** We have undertaken further work to consider the traffic impacts arising from the construction of Sizewell C. This work and feedback from the Stage 2 consultation has identified the need to consider certain improvements to the highway network. **Chapter 17** of this volume provides an overview of the junction improvements planned to mitigate the impact of Sizewell C traffic. The following highway improvements would be delivered to support either the rail-led or road-led strategies (with the exception of the Mill Street improvements which are required only to support the rail-led strategy):

- A140 / B1078 west of Coddenham;
- B1078 / B1079 east of Easton & Otley College;
- A12 / B1119 at Saxmundham;
- A1094 / B1069 south of Knodishall;
- A12 / A1094 Friday Street, north of Farnham;
- A12 / A144 south of Bramfield;
- Wickham Market Diversion Route via Valley Road & Easton Road; and
- Mill Street (B1122).

**2.11.2.** The chapter also outlines the rights of way and open access strategy, and describes proposed improvements to rights of way.

**2.11.3.** Preliminary environmental information in relation to the above improvements can be found in **Volume 2B**, **Chapter 12.**

# 3. Planning Policy Context

## 3.1. Introduction

**3.1.1.** This section provides a high-level summary of the key planning policy considerations relevant to the Sizewell C project. The purpose of this section is to explain the policy context for the project as a whole, including the strategies and proposals which are being consulted upon.

## 3.2. Planning regime

**3.2.1.** The Planning Act 2008 (Ref. 3.1) is the primary legislation which establishes the legal framework for applying for, examining and determining applications for Nationally Significant Infrastructure Projects (NSIPs), including new nuclear power stations.

**3.2.2.** Consent for an NSIP takes the form of a Development Consent Order (DCO). Applications for development consent are determined within the context of relevant National Policy Statements (NPSs).

## 3.3. Need for new nuclear development and Sizewell C

**3.3.1.** In the 2008 White Paper on Nuclear Power, the Government made clear that new nuclear power stations should have a role in the UK's energy mix, alongside other low-carbon sources (Ref 3.2). Nuclear power can contribute to meeting the UK's binding targets for emissions reductions, whilst contributing to diversity and security of supply.

**3.3.2.** The Government's Overarching NPS for Energy (NPS EN-1) (Ref. 3.3) states that, for the Government to meet its energy and climate change objectives, there is an urgent need for new electricity generating stations, including nuclear power. NPS EN-1 anticipates that, as a low carbon, proven technology, nuclear power generation can play an increasingly important role as we move to diversify and decarbonise our sources of electricity.

**3.3.3.** Members of Parliament have confirmed the Government's ongoing commitment to new nuclear. For example, in December 2017, the Rt Hon Greg Clark MP and Secretary of State for Business, Energy and Industrial Strategy re-emphasised the importance of becoming world-leaders in developing the next generation of nuclear technologies:

*"New industry figures show that the UK's civil nuclear sector contributed £6.4 billion to the UK economy last year. Today's announcements recognise the importance of industry driving innovation, supported by government, so the sector continues to compete at the very highest level, not just in the UK but globally." (Ref. 3.4).*

**3.3.4.** Sizewell is identified in the NPS for Nuclear Power Generation (NPS EN-6) as one of eight potentially suitable sites for deployment of new nuclear power stations by 2025 (Ref. 3.5). The eight sites were identified based on a Strategic Siting Assessment (SSA) carried out by the Government. The Government has assessed the suitability of the site based on a strategic level review against a number of criteria. To inform its policy, the Government also carried out an Appraisal of Sustainability (AoS) which assessed the sustainability of the NPS on nuclear power generation, taking account of alternative strategies and the potential impacts of nominated sites.

**3.3.5.** Annex C to NPS EN-6 contains the outcomes of the site assessments and the reasons why the sites listed were found to be potentially suitable. In relation to Sizewell C, the annex demonstrates that the site's suitability has been considered carefully and that its inclusion in the NPS reflects the in-principle acceptability of the location, as well as the overall need for nuclear power generation.

**3.3.6.** The annex also identifies that the development of Sizewell C would not be expected to take place without some significant impacts. However, the assessment recognises the potential acceptability of those impacts in view of the national need for nuclear power generation and the scarcity of alternative sites.

**3.3.7.** NPS EN-6 was also subject to a Government Habitats Regulations Assessment (HRA) in accordance with the Habitats Directive (Ref 3.6). The HRA recognised that there is potential for adverse effects on the integrity of European sites adjacent to or within the proximity of the potential sites identified in NPS EN-6. In line with the requirements set out in Article 6(4) of the Habitats Directive, the Government considered potential alternatives. It concluded that no alternatives would better respect the integrity of European sites and deliver the objectives of NPS EN-6.

**3.3.8.** The annex recognises that the Sizewell C site is located in a sensitive area and a precautionary approach suggests that the potential for adverse effects on the integrity of nine European sites cannot be ruled out. However, taking account of the urgent need for new nuclear power generation and the potential for avoidance and mitigation, the Government concluded that there is an

Imperative Reason of Overriding Public Interest (IROPI) that favours the inclusion of the site in NPS EN-6 (paragraph C.8.57 Annex C).

**3.3.9.** In addition to the precautionary approach adopted towards the European sites, NPS EN-6 also draws attention to the following environmental considerations:

- there would be a direct loss of a triangle of land within the Sizewell Marshes Site of Special Scientific Interest (SSSI), but the annex finds that there is potential for this loss to be addressed by habitat creation (paragraph C.8.6.63 Annex C);
- the visual sensitivity of the location within the Area of Outstanding Natural Beauty (AONB) is recognised and the NPS EN-6 annex accepts that there are likely to be some long-lasting adverse direct and indirect effects on the landscape, but that these are not likely to be sufficient to rule out developing a new nuclear power station (paragraph C.8.83 Annex C); (paragraph 3.10.8); and
- the potential for flood risk and coastal erosion is identified, but the annex considers it is reasonable to conclude that the power station can be protected from these risks (paragraphs C.8.19 and C.8.39 Annex C).

**3.3.10.** The conclusion of NPS EN-6 is that, in principle, the Sizewell site is potentially suitable for development of a nuclear power station. The NPS acknowledges that the sensitivities of the location do not in themselves constitute a reason to prevent the site from being considered as potentially suitable. The NPS highlights, however, the importance of paying full regard to the need to limit, mitigate or compensate for impacts, where practical.

**3.3.11.** The principle of site suitability and the need for Sizewell C are established through NPS EN-1 and NPS EN-6. Therefore, these matters do not fall to be debated in the consideration of an application for development consent. National planning policy recognises the urgency of need for the development of a new nuclear power station at Sizewell and the significant national and regional benefits that such a development would bring.

**3.3.12.** The weight to be given to that need, however, is important and further described within the NPS. NPS EN-1 advises that the weight which is attributed to considerations of need in any given case should be 'substantial' and at least proportionate to the anticipated extent of a project's actual contribution to satisfying the need for a particular type of infrastructure (paragraph 3.2.3). It makes clear that Government policy is that nuclear power should be free to contribute as much as possible towards meeting the need for around 18 Gigawatts (GW) of new non-renewable capacity by 2025 (paragraph 3.3.22).

**3.3.13.** In December 2017, the Government sought views on a new NPS for nuclear power stations and there will be another consultation in due course. Refer to **Chapter 1** of this volume for further details.

## 3.4. Historic site selection

**3.4.1.** In the 1950s, Sizewell was confirmed by the Government as an appropriate location for the construction and operation of the Sizewell A nuclear power station. Sizewell A was subsequently commissioned in 1966 and operated for 40 years. It is currently being decommissioned. Sizewell B was granted planning permission in 1987, following a public inquiry, with the support of the Suffolk County Council and a recognition that an application for Sizewell C would follow. This was reflected in the Inspector's report (paragraphs 96.5, 96.38 and 108.23). (Ref 3.7) The landscape strategy put in place for Sizewell B included advanced mounding and planting to define and protect a potential Sizewell C site. EDF Energy's current proposals encompass the area identified for the previous Sizewell C proposals.

**3.4.2.** The site's identification in current national policy reconfirms the historic recognition of Sizewell as a suitable location for nuclear power generation.

## 3.5. National Policy Statements

**3.5.1.** NPS EN-1 and NPS EN-6 were considered by Parliament and formally designated in July 2011. Together they provide the primary basis for decisions on applications for nuclear projects.

**3.5.2.** As well as setting out the important need case for new electricity generation, NPS EN-1 also provides policy for the assessment of generic effects of energy projects.

**3.5.3.** NPS EN-6 provides additional policy for the assessment of the effects and siting considerations for new nuclear power stations at those sites.

**3.5.4.** Section 104 of the Planning Act 2008 makes clear that an application for development consent must, subject to certain exceptions, be determined in accordance with any NPSs that have effect in relation to development of the description to which the application relates.

**3.5.5.** The following list summarises the principal assessment principles which are expected to be taken into account in NPS EN-1 and NPS EN-6 (or both):

- **air quality and emissions (NPS EN-1);**
  NPS EN-1 requires the consideration of any significant air emissions, their mitigation and any residual effects, distinguishing between the development stages and taking account of any road traffic significant emissions. The absolute emission levels that are predicted after mitigation methods have been applied should also be assessed. The decision maker should generally give air quality considerations substantial weight where a project would lead to a deterioration in air quality in an area, or lead to air quality breaches of any national air quality limits. In all cases, the decision maker must take account of any relevant statutory air quality limits. Where a project is likely to lead to a breach of such limits the developers should work with the relevant authorities to secure appropriate mitigation measures to allow the proposal to proceed.

- **biodiversity and geological conservation (both);**
  NPS EN-1 states that the applicant should clearly set out any effects on internationally, nationally and locally designated sites of ecological and geological conservation importance. Development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives; where significant harm cannot be avoided, then appropriate compensation measures should be sought.

  The effects of the construction of a new nuclear power station on the groundwater regime and its effects on terrestrial/coastal habitats should be assessed, as required by NPS EN-6.

- **coastal change (both);**
  NPS EN-1 states that coastal geomorphological and sediment transfer modelling should be undertaken to predict impacts and facilitate the identification of relevant mitigation and compensatory measures. The development should be resilient to coastal erosion and deposition during the operational and decommissioning stages, while taking account of climate change. Impacts on other parts of the coast should also be avoided by managing coastal processes. Where such proposals are brought forward consent should only be granted where the decision maker is satisfied that the benefits (including need) of the development outweigh the adverse impacts. Restoration plans should be provided by the applicant for areas of foreshore disturbed by works.

  A requirement of NPS EN-6 sets out that applicants should assess the proposed development site's geology, soils and geomorphological processes in order to understand the ongoing natural ecological, coastal and geomorphic processes. Measures should be included to mitigate the effects of, and on, coastal change.

- **dust, odour, artificial light, smoke, steam and insect infestation (NPS EN-1);**
  The potential for insect infestation and emissions of dust, odour, artificial light, smoke, steam and insect infestation to have an adverse impact on amenity should be avoided. All reasonable steps to minimise detrimental impacts should be taken, including a scheme of management and mitigation, where appropriate.

- **flood risk (both);**
  An appropriate Flood Risk Assessment (FRA) must be carried out for proposals located in Flood Zones 1 (of 1ha or greater), 2 and 3 (Ref 3.8) The development should aim to minimise risk by locating most vulnerable uses to areas of lowest flood risk, as well as other measures to mitigate risk of flooding. The use of Sustainable Drainage Systems (SuDSs) should also be prioritised and provisioned for in the application for development consent, as required by National Standards published by Ministers under the Flood and Water Management Act 2010 (Ref. 3.9).

  In determining an application for development consent, the decision maker should be satisfied that where relevant:

  – the application is supported by an appropriate FRA;
  – the Sequential Test (paragraph 5.7.13) has been applied as part of site selection;
  – a sequential approach has been applied at the site level to minimise risk by directing the most vulnerable uses to areas of lowest flood risk;
  – the proposal is in line with any relevant national and local flood risk management strategy;
  – priority has been given to the use of SuDSs; and
  – in flood risk areas the project is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed over the lifetime of the development.

  The decision maker should not consent to development in Flood Zone 2 in England unless it is satisfied that the Sequential Test requirements have been met. It should not consent to development in Flood Zone 3 unless it is satisfied that the Sequential and Exception Test requirements have been met.

- **historic environment (NPS EN-1);**
  The development should avoid any significant impacts on heritage assets by taking into account the desirability of sustaining and enhancing the significance of the heritage asset. The scale, height, massing, alignment, materials and use should be considered when developing proposals to ensure a positive contribution to the character of the historic environment. There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be. Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification will be needed for any loss. Where the application will lead to substantial harm to or total loss of significance of a designated heritage asset the decision maker should refuse consent unless it can be demonstrated that the substantial harm to or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm.

- **landscape and visual (both);**
  The existing nature of the local landscape, including the quality and value, need to be considered when assessing the impact of the proposal on the landscape. Virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. The development should aim to minimise harm to the landscape and provide mitigation measures, where appropriate. In particular, the development should avoid harming AONBs, which have the highest status of protection.

  NPS EN-6 states that although the scope for visual mitigation for new nuclear power stations will be limited, the proposal should be designed to reduce the visual intrusion of the project as far as reasonably practical.

- **land use, including open space, green infrastructure and Green Belt (NPS EN-1);**
  NPS EN-1 requires the applicant to consider any significant effects on the existing and proposed uses near the project and these should be minimised by the application of good design principles, including the layout of the project, as far as possible. Maintaining coastal recreation sites and features, ensuring access to the coast is preserved, should also be a priority.

- **noise and vibration (NPS EN-1);**
  Development should avoid significant adverse impacts on health and quality of life from noise, mitigate any detrimental impacts and, where possible, contribute to improvements to health and quality of life through effective management of noise. Noise levels should not exceed any limits specified in the DCO.

  The decision maker should not grant development consent unless it is satisfied that the proposals will meet the following aims:

  - avoid significant adverse impacts on health and quality of life from noise;
  - mitigate and minimise other adverse impacts on health and quality of life from noise; and
  - where possible, contribute to improvements to health and quality of life through the effective management and control of noise.

- **socio-economics (both);**
  NPS EN-1 requires the development to minimise adverse impacts of new energy infrastructure on socio-economic conditions. Any positive provisions by the developer should be considered, including legacy benefits.

  As required by NPS EN-6, measures should be set out to reduce impacts at local and regional level from all stages of the proposal. These could include pressures on resources, alterations to local/regional demographics and economic benefits.

- **traffic and transport (NPS EN-1);**
  A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the decision maker should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development. Detrimental impacts on the surrounding transport infrastructure should be managed and mitigated during all stages of the development. Demand management measures must be considered, including other modes of transport such as water-borne or rail transport. Controls must be put in place for Heavy Goods Vehicle (HGV) movements, ensuring arrangements are in place for any abnormal disruption.

  Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the decision maker should consider requirements to mitigate adverse impacts on transport networks arising from the development, as set out below. Applicants should also be willing to enter into planning obligations for funding infrastructure and otherwise mitigating adverse impacts.

Provided that the applicant is willing to enter into planning obligations or requirements, which can be imposed to mitigate transport impacts identified in the NATA/WebTAG transport assessment (Ref 3.10), with attribution of costs calculated in accordance with the Department for Transport's guidance, then development consent should not be withheld, and appropriately limited weight should be applied to residual effects on the surrounding transport infrastructure (paragraph 5.13.7 of NPS EN-1).

- **waste management (NPS EN-1);**
  An effective system to manage hazardous and non-hazardous waste arising from all stages of the development should be provided. Any waste produced should be managed properly, both on-site and off-site. The applicant must ensure that any waste arising should not have a detrimental effect on the capacity of the existing waste management facilities in the area.

  The decision maker should consider the extent to which the applicant has proposed an effective system for managing hazardous and non-hazardous waste arising from the construction, operation and decommissioning of the proposed development. It should be satisfied that:

  - any such waste will be properly managed, both on-site and off-site;
  - the waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, or is likely to be, available. Such waste arising should not have an adverse effect on the capacity of existing waste management facilities to deal with other waste arising in the area; and
  - adequate steps have been taken to minimise the volume of waste arising, and of the volume of waste arising sent to disposal, except where that is the best overall environmental outcome.

- **water quality and resources (both); and**
  The development should aim to provide suitable pollution control, in relation to activities that discharge to the water environment. An abstraction licensing regime must be in place when water is taken from the water environment. The requirements of the Water Framework Directive (Ref 3.11) must also be met.

  NPS EN-6 requires the applicant to consider cumulative effects of the proposal with other major infrastructure proposals in accordance with NPS EN-1.

- **human health and well-being (NPS EN-6);**
  The applicant should work with the local authority and the local primary care trust to identify any potentially significant health impacts and appropriate mitigation measures. The decision maker should consider the positive effect of employment and other socio-economic impacts on human health and well-being.
  The decision maker should act on the basis that the risk of adverse effects resulting from exposure to radiation for workers, the public and the environment will be adequately mitigated because of the need to satisfy the requirements of the UK's strict legislative and regulatory regime as well as the Office for Nuclear Regulation's implementation of the Government's policy on demographics.

**3.5.6.** NPS EN-6 also requires the following further issues to be considered where relevant:

- proximity to civil aircraft movements;
- access to transmission networks;
- impact on significant infrastructure and resources; and
- size of site to accommodate construction and decommissioning.

**3.5.7.** EDF Energy is considering all relevant issues identified in NPS EN-1 and NPS EN-6 throughout the development of its strategies and proposals for the project.

## 3.6. Other planning policy considerations

**3.6.1.** The primary policy basis for determining any application for development consent for a nuclear power station is the policy framework set out in NPS EN-1 and NPS EN-6. The extent to which the National Planning Policy Framework (NPPF) (Ref. 3.12) and the local development plan are deemed material is a matter for the examining authority and the Secretary of State.

**3.6.2.** Neither the NPPF nor local planning policy is specifically identified as a matter to be taken into account, although the decision maker may determine that one, or both, are important and relevant.

### a) National Planning Policy Framework

**3.6.3.** The NPPF sets out the Government's planning policy at the national level. As set out in paragraph 5, the NPPF: does not contain specific policies for nationally significant infrastructure projects. These are determined in accordance with the decision making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the National Planning Policy Framework).

**3.6.4.** At paragraph 8, the NPPF identifies that achieving sustainable development means that the planning system has three overarching objectives:

- **an economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
- **a social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- **an environmental objective** – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

**3.6.5.** The project would deliver substantial benefits that the NPPF identifies as being important to the achievement of sustainable development.

### b) Local planning policy

**3.6.6.** In relation to some policy topic areas, the NPS does import direct reference to local policy designations. For example, the fact that the Sizewell area is designated as an AONB and a Heritage Coast in local designations may well be important and relevant, although the approach to be taken to development within such locally designated areas is a matter for the policies of the NPS.

**3.6.7.** This relationship between national and local policy is apparent in the local statutory development plan, the Suffolk Coastal District Local Plan (Ref. 3.13). The current Local Plan recognises that national policy has identified Sizewell as a potentially suitable site for the development of an additional nuclear power station (paragraphs 1.14; 2.19 and 2.42). The Local Plan is clear that any decision on such an application will be taken 'at a national level' and that the role of the local planning authority is as a statutory consultee (paragraphs 3.76; 3.130 and 3.132).

**3.6.8.** The Local Plan recognises that the need for a new nuclear power station has been established in national policy, and that the role of the local planning process is limited to considering the suitability of any specific proposals and the mitigation of local impacts (paragraph 3.1.31). Consequently, whilst Local Plan Strategic Policy SP13 (Ref 3.14) sets out a range of issues which 'the Council considers [to be] the local issues that need to be adequately addressed', paragraph 3.132 is clear that these matters are listed in the plan in order to inform the Local Impact Report to be prepared by Suffolk Coastal District Council (SCDC), rather than as tests for the acceptability of any application for development consent. Consistent with the approach, the Local Plan recognises, for example, that the transport effects of a new nuclear power station would be 'assessed in line with policies set out in the NPS EN-1 and NPS EN-6 (paragraph 3.116).

**3.6.9.** The strategies of the Local Plan may be considered important and relevant, but where these relate to generic issues, such as the protection of the environment, the relevant policy tests are contained within the NPS. Consistent with the NPSs, Local Plan Strategic Policy SP13 recognises that there would be disadvantages arising from the development. However, it sees the role of SCDC as seeking to maximise the potential benefits. An example of this is in securing local economic and training benefits from the scale of the investment involved in the construction and operation of the nuclear power station.

**3.6.10.** The Local Plan is currently going through a review process and a first draft was published for consultation in July 2018. Following the consideration of the responses received to that consultation, the Proposed Submission draft will be published in early 2019. Examination of the Local Plan Review by the Planning Inspectorate is expected mid-2019.

## 3.7. Implications of planning policy

**3.7.1.** National policy sets out assessment principles against which any application should be developed and assessed. Those principles recognise the in-principle suitability of the Sizewell C site and confirm that the task for the application is to limit adverse effects where practical and to define any necessary mitigation. Local policies recognise the role of national policy, whilst confirming that the local authorities will seek to ensure the development of strategies that harness the benefits of the project for the local and wider area.

**3.7.2.** National and local policy recognise that development of a new nuclear power station will be acceptable, notwithstanding inevitable local impacts which cannot be fully mitigated, given the urgent and important national need for new nuclear generation and the established lack of alternative sites.

**3.7.3.** Balancing the environmental sensitivities and local effects with the need for the development of a NSIP calls for a thoughtful approach to the design and implementation of the project, informed by a full understanding of the environmental qualities of the area.

**3.7.4.** In order to limit the adverse effects of the project, EDF Energy has developed socio-economic and transport strategies (refer to **Chapter 4** and **Chapter 5** of this volume respectively) to address the principal characteristics of the project. For example:

- the sensitivity of the AONB and the Heritage Coast is being addressed by the careful siting and design of the proposals, in accordance with the design principles for the built development;
- the potential for construction workers to place pressure on the relatively small-scale local housing market is being addressed by establishing an accommodation strategy in which a large proportion of the construction workforce would be accommodated in a temporary accommodation campus;
- by locating an accommodation campus within the temporary construction area, traffic impacts would be further reduced along the local roads that lead to Sizewell C, whilst the location is close enough to shops and services in Leiston to deliver a beneficial economic relationship;
- the evolving transport strategy seeks to consider the potential for use of other modes of transport (in particular rail), where feasible, to minimise any effects on the road network;
- the evolving transport strategy also seeks to limit car traffic by adopting a park and ride strategy for construction workers, and providing a freight management facility (under the road-led strategy), thereby reducing daily traffic flows to the main development site; and
- environmental effects will be limited by careful design, and by a strategy to enhance the landscape of EDF Energy's wider Sizewell C site.

**3.7.5.** A number of effects have the potential to be directly beneficial, particularly the creation of construction and permanent jobs and the spending which Sizewell C would bring to the local economy. The NPS (EN-6) recognises that these effects are likely to be positive and of 'regional economic significance', whilst adding to community viability (paragraph C.8.119 Annex C). EDF Energy has developed strategies with the aim of delivering benefits to the local area. These strategies are explained in **Chapter 4** and **Chapter 5** of this volume.

# 4. Socio-Economics

## 4.1. Introduction

**4.1.1.** The construction of Sizewell C would make a significant contribution to the Government's energy strategy to support the security of the United Kingdom's (UK's) economic future, as well as supporting the UK's Industrial Strategy (Ref. 4.1) by producing a long-term boost for the local economy through increased employment and skills provision, operational and construction employment and opportunities for business and supply chains.

**4.1.2.** Sizewell C would operate on the Suffolk Energy Coast, which already hosts a mix of energy generation, including renewables, gas and nuclear. Sizewell B, EDF Energy's existing nuclear power station to the south of the Sizewell C site on the Suffolk coast, is already a major local employer making a significant economic contribution to the east and generating 3% of the UK's electricity. Such a huge investment would be comparable in scale to the London 2012 Olympics and Paralympic Games. With a build programme of approximately ten years and 25,000 employment opportunities on site alone, Sizewell C would provide a valuable prospect for economic growth, sustained employment and enhanced skills provision, both for the UK and the East of England.

**4.1.3.** Nuclear new build brings significant benefits to the UK economy. At Hinkley Point C these benefits include:

- UK businesses securing 64% of total construction spend, which is significantly higher than other technologies;
- the creation of 25,000 job opportunities during construction, 900 direct jobs during its 60 year operating life, plus around 1,000 additional people employed during refuelling and maintenance outages (approximately every 18 months for each reactor) and numerous roles created by the supply chain supporting the project;
- a catalyst for the development of a top-end engineering capability in a high standard manufacturing, construction, engineering and project management, helping to improve construction productivity and a wide range of future infrastructure projects across the UK;
- multi-million pound investments into infrastructure, including the local highway network and education and training facilities;
- the creation of 1,000 apprenticeships during the course of construction; and
- the award of contracts to businesses in the South West equate to a combined value of more than £1.3billion.

**4.1.4.** The East of England is well positioned to gain significant benefits and a positive legacy from nuclear development at Sizewell C. For example, we are working with local partners to develop education and training strategies to enable local people to secure employment opportunities during the construction and operation of the power station. Sizewell C has just launched a recruitment campaign to find its first apprentices in quantity surveying, project controls and civil engineering: the apprentices will study at either the University of the West of England or the University of Exeter and gain work experience at Hinkley Point C. Once they have completed their apprenticeship they will begin work on Sizewell C.

**4.1.5.** We are also working with our partners to identify how the local supply chain can secure a comparable level of involvement to that experienced at Hinkley Point C. Our partnership with the Suffolk Chamber of Commerce has seen over 1,400 East Anglian companies register their details on our online portal (www.sizewellcsupplychain.com) already. In doing so, it is estimated that at least £100million a year would go into the regional economy during the construction of Sizewell C and £40million during operation, with a total of £3.4 billion benefits over the lifetime of the project.

**4.1.6.** In addition, millions would be invested in new local infrastructure in Suffolk, including a new bypass at Farnham and Stratford St Andrew to improve safety and reduce journey times along the A12, new footpaths and cycleways, outdoor sports facilities in Leiston, and investments in the East Suffolk rail line. In addition, £2.5 million has already been invested in Aldhurst Farm, a new 67 hectare habitat creation area with public access for recreation.

**4.1.7.** Whilst we will continue to develop the initiatives to maximise the benefits of the project to the local area and region, we also continue to develop other initiatives to avoid, reduce or monitor and manage any adverse impacts (such as on local accommodation, tourism and community facilities and services). For example, we have identified measures including: a Community Fund (to mitigate any intangible effects), a Housing Fund (to mitigate any adverse effects on the local housing market) and an Economic Strategy (to avoid adverse effects on other sectors including tourism). We will work with the relevant stakeholders to further define any mitigation measures, so that they can be secured as commitments in our application for development consent.

**4.1.8.** The prediction, assessment, monitoring and mitigation (or optimisation) of socio-economic effects related to Nationally Significant Infrastructure Projects (NSIPs) is an iterative process. It relies on a process of project design influenced by feedback from consultation and ongoing engagement with stakeholders in the local area.

**4.1.9.** In this Stage 3 consultation, EDF Energy presents the project's development options, socio-economic baseline position, potential areas of likely significant effects (beneficial and adverse), and emerging mitigation and enhancement strategies. Most of the baseline information is drawn from information published by the Office for National Statistics (ONS), but it has been supplemented with the knowledge of the local authorities and other stakeholders. As the project progresses, and following feedback from this consultation, more information will be obtained in relation to a range of geographic areas prior to the submission of the application for development consent. These will include the administrative areas of the local district councils, together with Suffolk, Norfolk and Essex and sub-district levels.

### a) Setting the policy context for Sizewell C

**4.1.10.** The assessment of socio-economic effects of the project is defined by a set of national policy documents and planning and economic guidance. These set the types of effects that need to be assessed, and how the applicant should approach them. The project is also influenced by regional and local policies.

**4.1.11.** The National Infrastructure Plan (Ref. 4.2) and National Policy Statement for Nuclear Power Generation (NPS EN-6) (Ref. 4.3) make clear the importance of providing new nuclear generating capacity, creating a highly skilled construction workforce that can then help build other major infrastructure projects that the UK requires and, through the supply chain, support advanced manufacturing sectors to improve productivity.

**4.1.12.** The Overarching National Policy Statement for Energy (NPS EN-1) (Ref. 4.4) and EN-6 require that socio-economic effects of the project are assessed. These may include (but are not limited to):

- the creation of jobs and training opportunities;
- the provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;
- effects on tourism;
- the impact of workers during the construction and operational phases on population dynamics and demand for services and facilities;
- social cohesion, community impacts and equality impacts; and
- cumulative effects.

### b) Defining the socio-economic parameters and assumptions

**4.1.13.** The socio-economic assessment relies on information about the scale and location of the construction workforce needed to construct the project including:

- **The workforce profile** – how many construction workers will be needed, by skill and location throughout the construction period and at the peak of construction and the anticipated breakdown of roles / skills and working patterns. Workers may be home-based (already resident within the area) or non-home-based (NHB) (workers moving to the area from elsewhere to work on Sizewell C).
- **Workforce characteristics** – the demographic, economic and housing characteristics of the anticipated construction workforce.
- **Workforce accommodation assumptions and spatial distribution** (via a Gravity Model) – where home-based workers are likely to be drawn from, where NHB workers are predicted to stay, and in what type of accommodation (including in existing local accommodation and within temporary worker accommodation (such as the proposed campus and caravan site) provided by the project).

**4.1.14.** Combined, the socio-economic parameters and assumptions inform the assessment of effects on the economy and labour market, tourism, housing market and community facilities and services.

**4.1.15.** Some assumptions have remained constant since the Stage 2 consultation, while others have changed based on new information and through feedback from that consultation. The project assumptions are set out in full below at **section 4.2**.

### c) Assessing the effects of the project on socio-economics, and strategies for mitigating adverse effects and enhancing positive effects

**4.1.16.** The project assumptions are used alongside baseline information (collected both from statistical sources, such as the census, and consultation with local stakeholders to understand particular local sensitivities and vulnerabilities), to identify potential impacts and define strategies for enhancing the benefits of Sizewell C and addressing any significant adverse effects. These comprise the following, and additional detail is provided later in this chapter:

- **Construction Workforce accommodation strategy:** setting out the potential effects of the construction workforce on existing local accommodation, including tourist accommodation, the private rented sector (PRS) and the wider housing market, including housing need. Also the strategy covers EDF Energy's approach to managing its workforce, provision of temporary worker accommodation (campus and caravan site) and avoiding adverse effects.

- **Social/community strategy:** setting out the potential effects of the project on communities and community facilities, public services and social cohesion.
- **Economic strategy:** setting out the potential effects of the project on people and the economy, which includes jobs, education, skills, supply chain and effects on other sectors including tourism, and EDF Energy's approach to avoiding adverse effects and enhancing the benefits.

**4.1.17.** The socio-economic assessment will incorporate the findings of a separate Health Impact Assessment (HIA): a technical assessment of the environmental impacts of the project on health. This will inform a Health Action Plan (HAP), which will set out measures to enhance the potential health benefits of the project and avoid or reduce any potential adverse effects on human health.

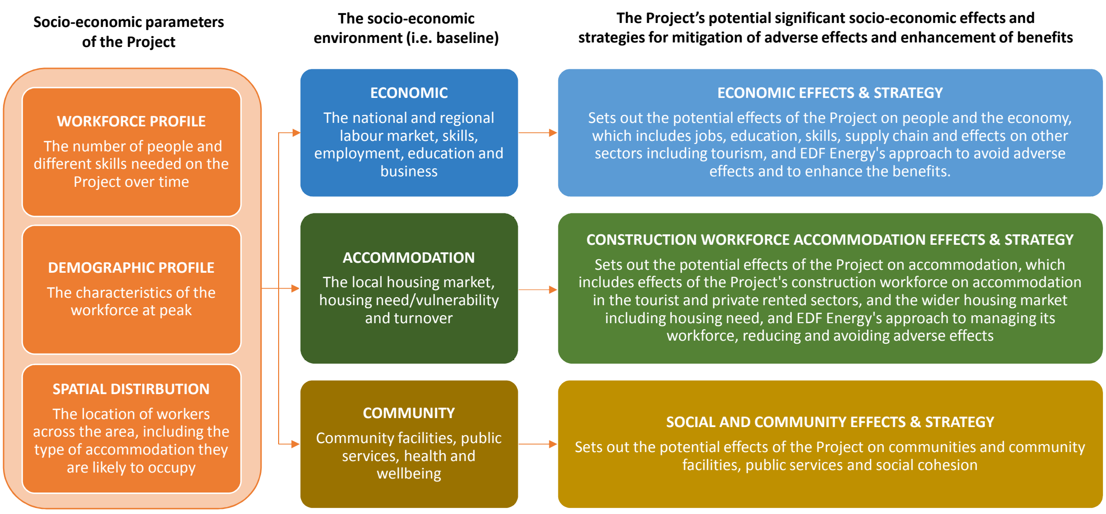
**4.1.18.** Community Impact Reports will also be provided with the application for development consent to draw together and summarise the combined environmental effects of the project on local communities.

**4.1.19.** **Figure 4.1** sets out the relationship between the project assumptions, baseline and emerging strategies.

**4.1.20.** This chapter provides an update on the progress of the socio-economic work on the project since Stage 2 consultation. It is structured as follows:

- **section 4.2** provides an overview of the Socio-economic Project Assumptions including overarching principles, workforce profile and demographic characteristics, and workforce accommodation choices;
- **section 4.3** sets out the Construction Workforce Accommodation Strategy, including provision of a housing fund, temporary worker accommodation (campus and caravans) and our intention to locate sports facilities in Leiston to enable shared community use and leave a legacy;
- **section 4.4** sets out the Social and Community Strategy, including measures to address potential impacts on health, education capacity, social care and the emergency services, as well as a community fund;
- **section 4.5** sets out the Economic strategy, including measures to enhance the significant benefits offered by Sizewell C and ensure local people and businesses are well placed to make the most of the opportunities presented by the project;
- **section 4.6** provides a table summarising potential effects, mitigation and enhancement measures set out in the sections above; and
- **section 4.7** set out EDF Energy's next steps as we prepare to make an application for development consent.

## Figure 4.1 Socio-economic assessment structure



## 4.2. Socio-economic project assumptions

### a) Overarching principles

**4.2.1.** The socio-economic strategies for Sizewell C aim to avoid, mitigate or manage significant adverse economic or social impacts that would directly arise from the construction and operation of the power station, whilst optimising the benefits of the project both locally and nationally. We consider that the East of England is well positioned to gain significant benefits and a positive legacy from nuclear development.

**4.2.2.** The socio-economic strategies have regard to the following objectives:

- to invest in a range of initiatives to optimise the potential for jobs directly and indirectly related to the construction and operation of Sizewell C to benefit local residents both through employment and upskilling;
- to commit to a range of initiatives to ensure that local businesses can benefit from the economic activity generated by the construction and operation of Sizewell C;
- to work with partners, including Tier 1 contractors and Trade Unions, to provide a high quality working and living environment for the workforce;
- to strike a balance which seeks to optimise the benefits which local facilities, amenities and services could gain from the increased economic activity generated by all phases of the project, whilst mitigating any significant adverse effects that might arise from that activity; and
- to impose and enforce a Code of Conduct on the Sizewell C workforce and seek to beneficially assimilate the activity generated by the project with the local community.

### b) Workforce profile and local recruitment

**4.2.3.** At the Stage 2 consultation, we set out our estimates for how the Sizewell C construction workforce would build up over time, what skills are required over the construction period, how the peak of construction would look and the proportion of home-based and NHB workers.

**4.2.4.** This included a peak workforce estimate of around 5,600 workers on the main development site (of which approximately 2,000 were predicted to be home-based), plus a further 500 workers working on the associated development sites, all of who were expected to be home-based. At peak, just over a quarter of the eventual 900 operational workers were forecast to be on-site.

**4.2.5.** Feedback from Stage 2 included:

- requests for assurance that workforce numbers presented are reliable;
- requests for more information about the breakdown of the workforce by role/skill and location, across the workforce profile, including more clarity on the jobs at associated development sites; and
- a preference for EDF Energy to maximise the proportion of home-based workers, in order to limit the reliance on NHB workers moving into the area. In general, there were concerns that:
  - the estimate of home-based employment at peak lacks ambition; and
  - estimates for home-based workers in higher skilled jobs are too low.

**4.2.6.** The 'central case' workforce profile assessed for the purpose of Stage 3 is unchanged from Stage 2 and is set out in the following charts: **Figure 4.2** and **Figure 4.3**. These show the workforce by occupation type over time, and the number of home-based workers and NHB workers estimated throughout the construction phase. The text below provides additional detail on how these numbers were calculated and why we consider that the predictions of home-based workers are a realistic target.

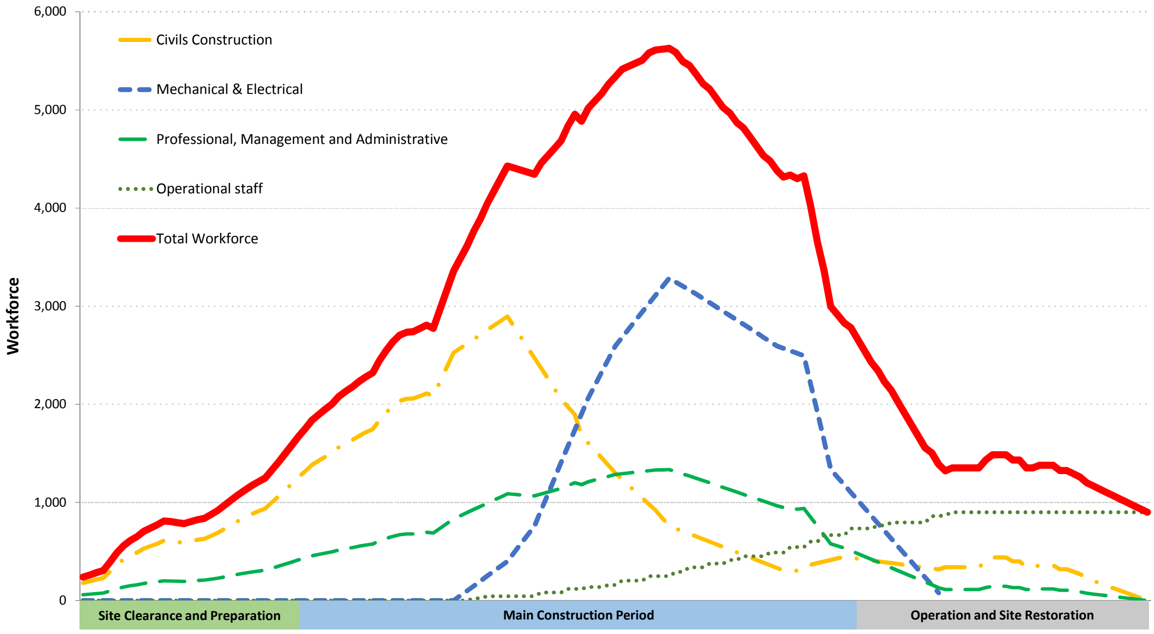
**4.2.7. Table 4.1** sets out the number of roles required, by skill-level at construction peaks.

**4.2.8.** In addition, around 500 jobs would be supported at peak, servicing associated development such as the campus and park and ride sites. All of these are likely to be home-based, due to their relatively low skill level limiting the extent to which they would need to draw on skills from outside the area.

**4.2.9.** Information from Hinkley Point C has been used to estimate the likely peak workforce required to operate Sizewell C's associated developments at the peak of construction. The associated developments are anticipated to generate approximately the following jobs:

- 220 in catering and bar work;
- 200 in cleaning/housekeeping;
- 50 jobs security;
- 20 in administration; and
- 10 in waste and maintenance.

## **Figure 4.2** Sizewell C workforce profile (by occupation/skill type)




## **Table 4.1** Labour demand by occupation and home-based/NHB split at civils peak and overall peak

Sizewell C construction (numbers rounded to nearest 5)

| Occupation | Civils Peak | | Mechanical and Electrical Peak (M&E) (also Overall Peak) | |
|---|---|---|---|---|
| | Home-based | NHB | Home-based | NHB |
| Civil Operatives | 1,330 | 1,560 | 380 | 380 |
| M&E Operatives | 140 | 260 | 990 | 2,300 |
| Operational staff | 45 | 0 | 250 | 0 |
| Staff and Management | 130 | 720 | 160 | 900 |
| Site services, security and clerical | 220 | 20 | 250 | 30 |
| All | 1865 | 2560 | 2,030 | 3,610 |

**4.2.10.** In estimating the proportion of home-based and NHB workers within the overall construction workforce profile, EDF Energy has taken into account:

- the demand for specialist skills and labour market availability – by mapping (at ward level) the number of people with skills relevant to the project, we have estimated the proportion of existing residents who might reasonably be expected to work on Sizewell C;
- characteristics of the construction workforce in the UK and for NSIPs in general including workforce mobility rates – research by CITB suggests that the East of England has the highest rate of any region in the UK of construction workers living in temporary accommodation (11%) (Ref. 4.5);
- the need to strike a balance between providing employment for local people without disproportionately affecting businesses and the rest of the construction economy in Suffolk;
- recent information from Hinkley Point C's Tier 1 contractors, experience of local recruitment levels from Sizewell B, and other projects including Flamanville 3; and
- our experience and assumptions about enhanced recruitment – the extent to which our intervention in education, skills and training can maximise local recruitment.

**4.2.11.** Analysis shows that, with relatively small levels of demand for site services and clerical jobs, low skill requirements, relatively high wages, and large availability of labour supply (both employed and unemployed), there should be few problems in meeting the high proportions of home-based recruitment which have been the norm for this category of employment on other power station construction sites.

**4.2.12.** In contrast, the much higher levels of demand for professional and managerial staff (around 850 at civils peak, and over 1,000 at total peak), the high skill requirements, the tendency for the developer and main contractors to second staff from 'head office', and the relative shortage of such skills in the area indicate that lower proportions of home-based recruitment are likely to be achieved, although possibly at the upper end of recent such project experience.

**4.2.13.** Civil, Mechanical and Electrical (M&E) operatives fall between these two. Significant elements of the civils work would be suitable for local residents (and contractors) as the degree of specialism required for these elements of nuclear construction is relatively low and residents would therefore be able to access work with little or no additional training. For M&E work, the degree of specialism is higher and the proportion of local residents with the necessary skills is consequently lower. Some trades, especially in the M&E phase are highly specialised and limited in supply across the UK. It will not be possible to recruit people locally for some roles, even with the skills and education interventions that EDF Energy will implement, so NHB recruitment will be higher in this case.

**4.2.14.** It should also be noted that the approximate 2,000 plus 500 'home-based' workers represent the peak of construction. For this short period the demand for highly specialised M&E roles is also at its peak. **Figure 4.3** identifies the estimated number of home-based and NHB staff throughout the construction phase and by type of occupation.

**Figure 4.3** Sizewell C workforce profile (by home-based/non home-based)

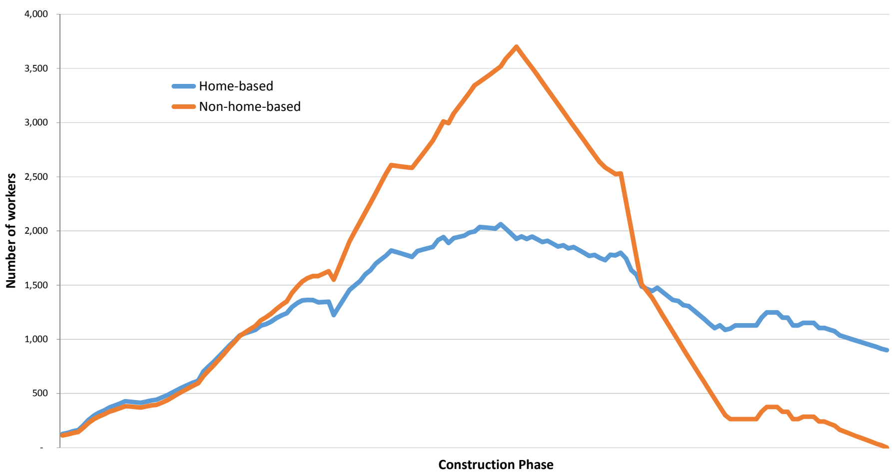


**Table 4.2** Home-based Labour Demand by sub-sector

| Occupation | Home-based jobs at peak of construction | |
|---|---|---|
| | Roles/workers | Sub-sectors |
| Civil Operatives | 380 | Timber and formwork, concrete/cement/steel fixers, drivers, lifting operatives and supervisors, labourers, steelwork erectors, access and other plant operators, welders, civil works labourers and semi-skilled occupations |
| M&E Operatives | 990 | Semi-skilled M&E operatives, welders, pipefitters, cabling operatives, fitters, electricians, laggers, support services, instrumentation |
| Operations Staff | 250 | Including nuclear technicians and safety officers, management, operations and site management |
| Staff and Management | 160 | Mainly professional, management-type jobs |
| Site Services | 250 | Administrative, private security and service sector (e.g. catering, cleaning) |
| Associated Developments | 500 | Includes drivers, security, service-sector jobs, cleaning, maintenance and administrative jobs |

**4.2.15.** This confirms that over half of the total workforce is expected to be home-based for over half of the construction phase. **Table 4.2** explains the types of jobs likely to be generated for home-based workers at the peak of construction.

**4.2.16.** While our assumptions on the number, type and duration of roles has not changed since Stage 2, we have considered the potential socio-economic implications if the NHB workforce were to be larger, for example, what would the effects be on local accommodation, community facilities, public services and the labour market.

**4.2.17.** To do this we have considered throughout this chapter what the effects might be of a peak workforce of 7,900 in order to ensure that our strategies and assessments are robust and to consider whether any additional mitigation would be necessary. Given that our central case already aims to maximise local recruitment, it is anticipated that almost all additional construction workers in this scenario would be NHB. The associated development workforce would also be increased (we have assumed to 600) to allow for the additional demands of the higher workforce (such as catering and bussing) and this increase is assumed to all be home-based.

**4.2.18.** This higher assessment is used to ensure any mitigation measures proposed are sufficiently flexible to deal with the potential effects of this scenario should it arise. This issue is addressed further below at **section 4.3.**

### c) UK construction workforce characteristics

**4.2.19.** At the Stage 2 consultation, we set out our predictions for the demographic characteristics of the workforce, including age and gender breakdown.

**4.2.20.** This profile is important to help inform the assessment of impacts on local accommodation, community facilities and public services (such as healthcare, education (for workers with children), social services and sports and leisure facilities), and to direct mitigation to where it would be most effective.

**4.2.21.** Building a profile of the construction workforce enables us to embed measures in the design of the scheme to respond to demographic and population characteristics (such as religion or language, for example, which will inform the inclusion of faith facilities and translation services within the project). It also enables us to work with the community and local authorities who provide public services to prepare for any potential service demand from specific groups, and ensure that barriers to integration of workers and the community are limited.

**4.2.22.** Since Stage 2, we have undertaken a more detailed assessment of other demographic and population characteristics of the potential construction workforce including family status, nationality and religion, in order to inform our assessment of the services the workforce will need.

**4.2.23.** The 2011 census provides a comprehensive overview of certain characteristics of the UK's 2+ million construction workers (Ref. 4.6). The UK construction workforce is overwhelmingly male (approx. 88%) and in the 20 to 49 age range. A comparison with 2001 Census data shows that the UK's construction workforce is ageing, and there has been a proportional increase in women working in the sector (up 54% since 2001, compared to 25% growth in male construction workers). Women currently make up 11% of the construction workforce but some construction bodies forecast that this could more than double by 2020 (Ref. 4.7).

**4.2.24.** EDF Energy will aim to raise diversity where possible by removing barriers to work and implementing education, employment, training and recruitment activities that aim to foster a diverse workforce for the construction and nuclear engineering sector generally.

**4.2.25.** At Stage 2, EDF Energy was specifically asked about the extent of migrant labour likely to work on the project. In the light of Brexit and potential future limitations on labour flows, especially from the European Union (EU), the Construction Industry Training Board (CITB) has produced a comprehensive study of the role of non-UK workers in construction (Ref. 4.8). Key findings include:

- one in six employers said they were very or quite dependent on international migrants;
- non-UK workers cover a range of occupations including labourers, architects, skilled trades, construction directors/managers/supervisors, machine operatives, engineers, quantity surveyors and support roles;
- the migrant workforce is younger with a significantly higher proportion aged 25 to 34; and
- by broad occupational group, non-UK workers were more likely than UK workers to be in skilled construction and building trades (49% vs. 39%) and in elementary trades and related occupations, which includes roles such as labourers, hood carriers and ground workers (10% vs. 7%).

**4.2.26.** We are acutely aware of the challenges facing the construction sector and have identified opportunities to tackle these issues through the project and national programmes (see **section 4.5** below). These challenges are predominantly:

- that the UK construction workforce is ageing, potentially reducing the skills base in the future as workers retire from the sector;
- that the workforce lacks diversity and that routes into construction for hard-to-reach groups and in particular women are lacking; and
- that availability of skills in the UK construction workforce is highly influenced by political and economic climate at any given point in time, and the extent of migrant labour is dependent on availability of skills in the UK-based sector.

**4.2.27.** We will continue to maximise the benefits for local, regional and UK-based construction workers through skills, training and recruitment initiatives and will continue to monitor trends in the construction workforce in order to respond to the specific needs of migrant workers should they arise on the project.

### d) Workforce accommodation choices

**4.2.28.** During the construction phase, NHB workers will seek temporary accommodation in the area across a range of types depending on their roles, skill level and tenure on the project.

**4.2.29.** At Stage 2, we identified that with a peak of 5,600 construction workers, around 3,600 workers would need accommodation in the local area.

**4.2.30.** In order to reduce the potential significant effect of these workers on local housing markets and communities, we intend to provide temporary worker accommodation in the form of an accommodation campus on the main development site and caravan site at land to the east of Eastlands Industrial Estate (LEEIE):

- The accommodation campus would comprise 2,400 bed spaces and this number is unchanged from Stage 2.
- The caravan site would comprise up to 400 pitches, equivalent to 600 bed spaces, based on occupancy of 1.5 per caravan.

**4.2.31.** Some workers would move to existing local accommodation with their accommodation choice determined by their skill and earning level and the length of their role.

**4.2.32.** Throughout the construction phase we expect some workers who are in short to medium term roles to seek private rented accommodation, predominantly in smaller one or two bed properties and houses in multiple occupation (HMOs).

**4.2.33.** Serviced and self-catering tourist accommodation and existing caravan sites are likely to be used by some construction workers in shorter-term roles on the project. These would offer the workers some flexibility in tenure, but there is a range of availability and affordability in this sector in Suffolk (high occupancy rates from Easter to the end of October and cost will likely restrict accessibility) that needs to be considered.

**4.2.34.** Since Stage 2, feedback from Hinkley Point C has suggested that more workers are likely to look for accommodation in the PRS than the tourist sector. Considering this feedback and the location, availability and affordability of tourist accommodation in the area around Sizewell C, we have changed our assumptions on the extent to which workers will choose rented accommodation and tourist accommodation; we now think that more workers will look to rent than take up tourist accommodation.

**4.2.35.** Some workers will buy homes in the area, particularly if they are in longer-term, management and high-skilled roles, or part of the operational (permanent) workforce which will start to build up before the peak of construction.

**4.2.36.** There is potentially a significant amount of accommodation, such as spare rooms across all tenures, and currently un-rated tourist accommodation, that could potentially be made available to workers (this is referred to as 'latent accommodation'). While it is not possible to fully identify and model the extent of this sector, experience from elsewhere suggests that some workers will use this sector for short periods of time instead of the tourist or PRS.

### e) Workforce distribution (via a "Gravity Model")

**4.2.37.** At the Stage 2 consultation, we set out an estimate of where we think the home-based workforce may be drawn from, and where and in what types of accommodation the NHB workforce might be expected to stay.

**4.2.38.** This was calculated by a Gravity Model which uses transport and socio-economic information, along with accommodation data to predict a spatial distribution of the workforce. A number of other inputs are also incorporated into the model, including the distance workers are likely to be prepared to travel based on research by CITB, experience from monitoring during the construction of Sizewell B, and from consultation with Suffolk County Council (SCC).

**4.2.39.** The key socio-economic assumptions that inform the Gravity Model include:

- the number, type and accommodation choice of workers at the peak of construction;
- the home-based workforce has been split to distinguish between the different commuting patterns of on-site civil and M&E workers, site services and support workers and future operational staff;
- home-based workers are assumed to be willing to commute up to 90 minutes (although this is not modelled as a 'cut-off'), each way, on a daily basis; and
- NHB workers are assumed to have a preference to live locally in order to reduce the length of their commute to work – this is modelled using a 'distance decay' function. All of these workers are expected to live within 60-minutes commute time of the main site, but have a preference for closer locations.

**4.2.40.** This socio-economic data is combined with transport-related analysis including average speed, route, journey time and value of time (linked to workers' preference to travel shorter distances to work). This allows the model to estimate a distribution of workers across the area, based on the amount of accommodation available, but also the inherent preference for workers to live close to their workplace.

**4.2.41.** The Gravity Model results have been used to inform the traffic modelling detailed in **Chapter 6** of this volume and the wider transport strategy in **Chapter 5** of this volume, as well as the assessment of socio-economic effects.

**4.2.42.** The Gravity Model spatial distribution is based on the best available data and methodology at the present time. It is recognised that this is a modelled prediction and cannot take full account of all of the factors which may influence accommodation and employment decisions which are still many years away, but it is considered a rational estimate and provides both a founding platform to the assessment, and the basis of ongoing engagement with the local authority.

**4.2.43.** At the peak of construction:

- NHB workers are likely to live within a smaller catchment area reflecting their preference to live close to the site and reduce travel time, and the availability of accommodation (i.e. local tourist, caravan and private rented). As such, more workers would be located relatively close to the site in areas to the east of the A12 (e.g. Leiston, Aldeburgh and Saxmundham) than in areas further from the site (e.g. Lowestoft and Ipswich).
- Home-based workers are mainly drawn from within a 90-minute travel distance of the site, including locations close to the site and also further afield such as Ipswich, Lowestoft, Felixstowe, Colchester, Great Yarmouth and parts of Norfolk.

**4.2.44.** The scale of the construction workforce, and the number of NHB workers who would be likely to seek accommodation in the local area, needs to be seen in the context of the wider residential population. The NHB workforce would be a relatively small number in the context of the existing population of Suffolk (0.8% of approximately 432,500 working age residents) and of the nearest districts of Suffolk Coastal and Waveney (around 2.7%) (Ref. 4.9).

**4.2.45.** However, it is understood that this would result in a sizeable transient population when considered in the context of neighbouring towns and villages.

## 4.3. Construction Workforce Accommodation Strategy

### a) Introduction

**4.3.1.** This section draws on the project assumptions (such as the range of accommodation likely to be used by the workforce) to set out the potential for likely significant effects on accommodation sectors, and the measures that EDF Energy is proposing to avoid or mitigate them, which are being developed in collaboration with stakeholders.

**4.3.2.** The project has the potential to cause adverse effects on the accommodation market during the construction phase and especially at the peak of construction when a NHB workforce of around 3,600 people is expected to be working at the main development site and staying in temporary accommodation within 60 minutes of the site. These workers would need to look for a range of short to medium and long-term accommodation while they are working on the project.

**4.3.3.** EDF Energy has been working to build an understanding of the characteristics of accommodation sectors in Suffolk including the scale, location and tenure. This approach uses public datasets and desk-based research, alongside collaboration with Suffolk Coastal District Council (SCDC) and Waveney District Council (WDC) Housing Officers, to set a baseline from which we can estimate the potential impact that the construction workforce might have on accommodation capacity in the area.

**4.3.4.** The aim is to strike a balance between workers using existing accommodation in the area and a purpose-built campus / caravan site in order to make sure that the local community derives economic benefits from worker spend in the area, while avoiding negative effects on accommodation capacity, affordability, and community cohesion.

### b) Stage 2 consultation

**4.3.5.** **Table 4.3** summarises the responses received to the Stage 2 consultation that have helped us develop our position on impacts on accommodation sectors and measures to avoid or mitigate them.

### c) The private rented sector

#### Potential effects on the PRS and housing need and vulnerability

**4.3.6.** NHB workers are expected to seek property in the PRS within 60-minutes of the main development site at the peak of construction. These workers will look to find accommodation for a range of short-medium timescales, with a preference to be as close to the site as possible.

**4.3.7.** Based on previous experience of Sizewell B construction, data from outages at Sizewell B (which roughly matches the skills breakdown for the peak of construction of Sizewell C) and information from contractors at Hinkley Point C, the majority of construction workers tend to share accommodation where possible (an average rate of 1.9 workers per home) (Ref. 4.10). This allows workers to maximise the value of their subsistence and accommodation allowance (£40 per night, based on the 2018 Working Rule Agreement from the Construction Industry Joint Council (Ref. 4.11).

**4.3.8.** Workers' accommodation preferences are therefore expected to overlap particularly with local residents within the lower quartile of market rents, within smaller (1-2 bed) properties or HMOs.

**4.3.9.** There are a number of pre-existing factors within Suffolk's (and the UK's) accommodation sectors that are already leading to pressures on SCDC's and WDC's housing services, and officers have reported that key sensitivities include an increase in homeless presentations since the Homelessness Reduction Act (Ref. 4.12), and a rise in active cases as a result of the duty to provide each person with a Personalised Housing Plan (PHP).

**4.3.10.** Across the UK, the most common reason for people to present as homeless (and have an application accepted) is that their Assured Shorthold Tenancy (AST) has expired and not been renewed by their landlord. This is linked to a combination of changes to the size, function and affordability within the sector, alongside changes to the distribution and level of housing benefit. Since before the last recession (2008) there has been a 13% increase in housing benefit claimants in SCDC. Over this time, the increase has been far greater in the PRS (28%) than the

**Table 4.3** Summary of Stage 2 Responses relevant to the Construction Workforce Accommodation Strategy for Sizewell C

| Accommodation campus |
|---|
| • Need to consider whether an alternative site or split sites would offer better community integration and better legacy potential.<br>• Detailed justification for size of campus needed and an option to enable increase and reduction of its size during its build, appropriate to the employee numbers on-site.<br>• Sports facilities should be in Leiston in order to provide public benefit and legacy.<br>• Need to consider environmental effects on local sensitive facilities and spaces.<br>• Facilities for occupational health and security/policing to be included in the campus. |
| **Other temporary workforce accommodation (e.g. caravans)** |
| • Temporary worker caravan sites are supported in principle, but further information is required with regard to alternative site assessment and proposed scale and site design. |
| **Private sector accommodation** |
| • Concern about property and rental prices and availability.<br>• Concern about pressure on the PRS, especially during outages. |
| **Mitigation strategies** |
| • Support for a housing fund to improve existing stock and boost supply.<br>• Consideration of whether alternative or split sites for accommodation campus, and off-site campus facilities, would create opportunity for better potential legacy benefits. |

social rented sector (7%). Overall in SCDC around 1 in 3 housing benefit claimants live in the PRS (Department for Work and Pensions and 2011 Census Data) (Ref. 4.13, Ref. 4.14).

**4.3.11.** EDF Energy is keen to ensure that demand for PRS accommodation from workers causes as few significant adverse effects on housing need and vulnerability as possible and has been working with SCDC and WDC to identify and scope potential effects and to identify measures to avoid, minimise and mitigate them.

**4.3.12.** Work with local Housing Officers is helping us to gain a better understanding of the current challenges and characteristics of the private rented market, and its function in helping to meet housing need. Discussions have focused on Leiston in particular, as the settlement closest to the site and therefore likely to attract the largest number of construction workers looking for accommodation at peak. During the Sizewell C construction period, it would be particularly important to ensure that the lower 30th percentile of the PRS remains accessible to local people as a way into the housing market.

**4.3.13.** Leiston is expected to be where vulnerability is greatest (based on housing register and socio-economic data), particularly for households in smaller units, and particularly for young people (and care-leavers) who may be out of work and without access to housing benefit and who the council will seek to place in private rented accommodation.

**4.3.14.** At Stage 2, EDF Energy set out broad estimates for the number of workers likely to seek private rented accommodation in the area (around 360), and in Leiston in particular (around 100). Due to inclusion of an additional 600 bed spaces at the LEEIE caravan site, this number has reduced slightly at this Stage 3 consultation, in spite of a shift in EDF Energy's assumptions about worker's likelihood to choose PRS accommodation over tourist sector accommodation (set out in **Figure 4.4**).

### Potential effects on tourist accommodation

**4.3.15.** It is anticipated that the effect of workers coming into the PRS on housing pressure will be mitigated through measures to improve and enhance housing supply and improve service resilience.

**4.3.16.** EDF Energy is aware that in the summer peak a significant number of tourists visit the Suffolk Coast. The use of tourist accommodation by workers may have adverse economic impacts if tourists are displaced from accommodation. For off-peak times of the year, the use of tourist accommodation by construction workers could have beneficial economic effects, maintaining local spend and employment in these areas.

**4.3.17.** Prior to the Stage 2 consultation, EDF Energy was provided with a detailed database of registered tourist accommodation by Visit East Anglia, which set out the location, sector and size of tourist accommodation across the area. At Stage 2, EDF Energy combined this with assumptions on the range of availability and affordability of accommodation for construction workers, to identify indicative effects on capacity.

**4.3.18.** Since Stage 2, EDF Energy has reviewed published information on price and availability across tourist sectors, and through discussions with local authorities, the Suffolk Coast Destination Management Organisation (DMO) and tourist accommodation operators has identified a range of more refined assumptions around the likely affordability and availability of accommodation in these sectors in order to estimate a likely rate of uptake, by location, for workers in the sector.

**4.3.19.** At the Stage 2 consultation, we estimated that around 360 workers may seek accommodation in the tourist sector at the peak of construction. As a result of modelling affordability and availability by sector, and the distribution of tourist accommodation in relation to the site, we anticipated that the greatest effects could be seen in places like Aldeburgh where there is a lot of tourist accommodation (195 workers, or 19% of available/affordable supply), or very close to the site like Leiston where there is less accommodation (and so a greater proportion would be used).

**4.3.20.** Since Stage 2 consultation, these central case figures have reduced as a result of our Stage 3 proposal to add temporary caravan accommodation in addition to the proposed accommodation campus, and by re-assessing assumptions about worker's likelihood to choose PRS accommodation over tourist sector accommodation (set out in **Figure 4.4**). This figure may reduce further if workers use latent accommodation.

### Latent accommodation

**4.3.21.** Latent accommodation includes unrated tourist accommodation, rooms for let in private homes, and accommodation new to the market each year. This type of accommodation would offer an opportunity to mitigate negative effects on tourist and PRS capacity, as well as allowing local residents to benefit economically, for example, by renting out spare rooms.

**4.3.22.** Feedback from Hinkley Point C suggests that this type of accommodation is popular with workers, with around 10% of NHB workers using spare rooms in existing homes. As such, the figures presented in this chapter for uptake of accommodation in the PRS and tourist sectors may be considered an upper estimate should these levels of latent accommodation be achieved.

**4.3.23.** Based on 2011 Census data (Ref. 4.15), in Leiston there are approximately 300 under-occupied homes (i.e. with more bedrooms than residents) with 400 spare rooms across all sectors, so this is potentially a rich source of accommodation that would avoid uptake of accommodation in other sectors while making more efficient use of existing stock.

### d) Accommodation Strategy

**4.3.24.** The accommodation strategy to be submitted with the application for development consent will set out the need for and approach to mitigation and will aim to:

- strike a balance between the economic benefits of workers using existing local accommodation and avoiding undue pressure on local communities and the tourism sector;
- ensure that there is adequate, good quality accommodation for workers within reasonable travelling distance of the site. This is particularly important in terms of attracting and retaining workers onto the project, especially in light of competition from other large infrastructure projects; and
- take a proactive approach to managing local impacts on accommodation capacity through a range of measures including provision of temporary worker accommodation (TWA) in the form of a campus and caravan site.

**4.3.25.** Measures to be included within the accommodation strategy are as follows:

### Accommodation management system

**4.3.26.** In order to help manage the distribution of workers and avoid or reduce potential adverse effects on accommodation capacity in local areas in a responsive way, EDF Energy will work with stakeholders to develop mechanisms that:

- allow local landlords, tourism businesses and residents to register accommodation available for workers; and
- enable EDF Energy and its contractors to signpost workers towards this accommodation.

### Temporary worker accommodation (TWA) – campus

**4.3.27.** At Stage 2, EDF Energy presented layout options for a 2,400 bed accommodation campus on the main development site.

**4.3.28.** The size of the campus has not changed since Stage 2. However, we have been working with SCDC on plans for high quality sports facilities with shared community access in Leiston. More information on the proposed campus layout is provided in **Chapter 7** of this volume, while further information on sports facilities is provided later in this chapter.

**4.3.29.** A single campus, within walking distance of the main development site, would play an important role in attracting a high quality workforce, while meeting worker needs and helping manage worker behaviour and impacts on the wider community. It would help to address concerns about potential adverse effects in relation to the off-site options presented at the Stage 1 consultation, and would:

- reduce the number of journeys on local roads;
- balance the economic benefits of workers integrating within housing markets and communities, without overwhelming local communities with new residents;
- reduce pressure otherwise placed on tourist and PRS accommodation; and
- allow flexible working patterns and out of hours working that would be necessary to maintain construction productivity and progress.

### TWA – caravans

**4.3.30.** At Stage 2, we consulted on an option for the provision of a bespoke caravan site for construction workers on the LEEIE. This was proposed to be available in the early years before a campus was established, as well as helping to provide resilience for the workforce at the peak of construction and reduce effects on other accommodation sectors.

**4.3.31.** Since Stage 2, a proposed layout has been shared with SCDC and refined in response to their comments. The current land area earmarked for caravans and shown in the plans in **Chapter 7** of this volume would allow a maximum of 400 pitches. The number of workers per caravan would depend upon the size of caravans brought to site but an estimate of 600 (around 1.5 workers per caravan) has been adopted for the socio-economic assessment for this Stage 3 consultation.

**4.3.32.** EDF Energy has been working with SCDC to examine the issues around the delivery, operation and management of the site. Discussions have also been held with Leiston Town Council, in response to a number of issues raised at Stage 2 in terms of safety of movement of workers between the caravan site and facilities in Leiston. Further work on pedestrian routes will be undertaken post Stage 3 consultation.

### Identification of additional capacity in the tourist sector

**4.3.33.** EDF Energy proposes to run a 'one-stop-shop' open event for providers of tourist accommodation and particularly caravan sites close to the project, along with SCDC, following this stage of consultation, in order to:

- inform them of the likely scale of demand from workers, how this changes over time, and the likely accommodation requirements and characteristics of the workforce – particularly the civils workforce who tend to seek low cost, flexible tourist accommodation;
- respond to any concerns that accommodation providers may have about NHB construction workers; and
- identify the potential for these sites to enter into agreements with EDF Energy and Tier 1 contractors to accommodate a portion of the workforce and potentially develop management strategies.

### v. A housing fund

**4.3.34.** EDF Energy is proposing to provide support for housing in the local area by the establishment of a housing fund to address potential adverse effects on local accommodation markets and sectors, and service provision across the 60-minute area resulting from the inflow of NHB workers.

## **Table 4.4** Suite of measures to implement a housing fund to mitigate/avoid potential significant adverse effects on housing in the 60-minute area

### Measures to boost accommodation supply across all tenures

**Measure: Stimulating new/improved supply in the PRS and social rented stock**

**Reason for inclusion in the housing fund:** some workers will seek smaller units in the lower percentiles of market rent within the PRS. These are the same type of properties that the local authorities will also look towards to discharge their housing duties to residents in housing need. Therefore, funding initiatives to improve stock and stimulate supply would help to mitigate the pressure on competition for the existing stock.

**Implementation and potential outcomes may include:**

i. Support rent/deposit guarantee schemes, interventions to make the market work better, and support rent deposits for people at risk of homelessness.
ii. Support existing and new activities such as the Leiston Foyer scheme – enabling care leavers and vulnerable young people to build independent living skills in a safe environment.
iii. Support selected activities funded by the Housing Revenue Account within SCDC where these is a clear mitigation of project effects.
iv. Investigate the potential to proactively bring forward HMOs to address likely demand for these from the project / address the issue of unlicensed and overcrowded HMOs.
v. Provide equity loans to residents in the social rented sector, owner occupied or PRS.

**Measure: Bringing empty homes back into beneficial use**

**Reason for inclusion in the housing fund:** opportunity to boost supply, bringing existing homes back into use for either workers or general lettings/sales. Private or public-sector operated. Initial estimates provided by SCDC are that there are 43 empty homes in Leiston and around 440 in SCDC total (long-term).

**Implementation and potential outcomes may include:**

i. Funding for investigative services to identify and research empty properties and their potential for re-occupation.
ii. Support empty homes back into use specifically as rented worker accommodation by, for example, brokering relationships between owners and contractors.
iii. Loans / grants / guaranteed lets.
iv. Make it easier for residents to report empty homes.
v. Help by funding information on options for renting, selling and refurbishment for owners.

**Measure: Funding to act as 'grant replacement' for existing / pipeline development schemes, and support Registered Housing Providers (RHPs) to bring forward properties**

**Reason for inclusion in the housing fund:** boosting supply, and particularly the proportion of pipeline supply that could be affordable per site, helps to reduce potential pressure on housing need generally (taking pressure of the PRS for workers and households in housing need).

**Implementation and potential outcomes may:**

i. Help to deliver the East Suffolk Housing Strategy (2017) pledge to work with housing associations to explore opportunities for mixed schemes of private sale and affordable housing.
ii. Support the East Suffolk Housing Strategy (p25) (2017) target to *"develop partnership arrangements with key housing association partners to increase the delivery of new housing supply."*
iii. Support the East Suffolk Housing Strategy (p3) (2017) target to *"actively support the broader supply of housing to ensure East Suffolk is the preferred location for private developers and housing associations."*

### Measures to improve the efficiency of existing housing stock

**Measure: Stimulating more efficient use of the PRS and social rented stock**

**Reason for inclusion in the housing fund:** by making better use of existing stock across all tenures, capacity may be freed to better respond to households at risk of homelessness who would otherwise be competing with construction workers for property.

**Implementation and potential outcomes may include:**

i. Tackling under-occupation - the East Suffolk Housing Strategy (2017) recognises that existing homes are often too large for the recent demand from smaller households.
ii. Enabling searches for and promotion of PRS stock for council to use to discharge housing duty, and engagement with landlords.
iii. Support the East Suffolk Housing Strategy (p6) (2017) target to *"address need for specialist housing for older people"* (and care leavers).
iv. Support the East Suffolk Housing Strategy (p3) (2017) target to *"work with the private rented sector to ensure properties are well maintained and managed."*
v. Measures to identify and promote the use of latent stock.

Measures to support service delivery

**Measure: Funding for staff/service resilience**

**Reason for inclusion in the housing fund:** ensure that the potential effects on housing need and need for council housing services (including provision of front-line services, administrative support, development of PHPs) from local residents as a result of pressure on the PRS can be mitigated, should it arise.

**Implementation and potential outcomes may include:**

i. Backfilling of roles to ensure existing Housing Officers are able to continue to provide services.

ii. Financial support for delivery of the floating support service, to ensure marginalised adults have access to specialised accommodation and services.

**Measure: Supporting schemes to enable access to the PRS, and particularly tackle issues directly affected by legislative changes**

**Reason for inclusion within housing fund:** East Suffolk estimate that approximately 30% of households on the housing register are aged 18 to 24 and this age group are no longer eligible for housing benefit if not in employment. This has led to greater demand for front line housing services, particularly from young, single people and a demand for smaller properties that may be exacerbated as a result of construction worker demand for PRS properties.

**Implementation and potential outcomes may include:**

i. Support for temporary accommodation provision.

ii. Support for investigating solutions out-of-area, where adequate conditions for implementation of PHPs are unlikely to be met.

iii. Supporting the East Suffolk Housing Strategy (p3) (2017) target to *"implement the Homelessness Reduction Act 2017 to ensure members of the community threatened with homelessness are provided with increased support."*

iv. Support the East Suffolk Housing Strategy (p7) (2017) target to *"develop a specific programme tailored to the needs of rural communities."*

**4.3.35.** EDF Energy has been discussing a range of possible initiatives with SCDC to reach consensus on the type of targeted initiatives that would be most effective in avoiding or mitigating the specific potential adverse impacts of the project. These are set out in **Figure 4.4**, based on assumptions about the size, location and accommodation choices of the workforce, set against information from the local authorities on demand for homes and vulnerability to homelessness, including housing register information by settlement; and an understanding of the existing pressures on housing services and planned measures to manage them (including a review of published material including the East Suffolk Housing Strategy (Ref. 4.16)).

**4.3.36.** It is anticipated that:

- the range and balance of initiatives will evolve over time as the project progresses and can be responsive to legislative changes and economic climate; and
- the housing fund would be drawn on both as a response to monitored effects, and as precautionary investment to avoid potential adverse effects where initiatives require a lead-in time ahead of the peak of construction effects. The fund could be used to both increase supply and to invest in a range of initiatives that provide greater housing choice, opportunities and resilience in the councils' statutory service.Where relevant, funding may also be used to kick-start stalled development, or lead to direct investment in existing developments to enable them to deliver more social housing which would ease potential displacement impacts at the bottom of the market.

**4.3.37.** In determining how to target the housing fund, a range of factors will need to be considered including the cost, the need to deliver specific outcomes in specific locations, and the balance between providing permanent homes, temporary solutions, and service support to indirectly reduce demands.

**4.3.38.** Whilst decisions about how the housing fund will be distributed and managed to support the above initiatives have yet to be agreed, it is clear that the fund will need to be partly precautionary and applied ahead of the peak effects to ensure resilience, and partly reactive to issues as they arise.

**4.3.39.** The key principle will be to ensure that the fund is directed towards the areas likely to experience significant impacts but provides the local authorities (as the local experts) with flexibility as to how it is best used.

**4.3.40.** Local authorities will continue to review the effectiveness of their response to homeless presentations and identify the measures that are most effective in preventing homelessness. Going forward, this will provide a guide to which interventions will benefit most from the housing fund to avoid or reduce significant effects.

### e) Managing impacts in the 7,900 workforce assessment case

**4.3.41.** As set out in the Socio-economic Project Assumptions section above and also in **Chapter 5** and **Chapter 6** of this volume, since Stage 2 we have also considered the potential implications if the NHB workforce were to be larger. This enables us to ensure that our strategies are comprehensive and robust, so that should the workforce increase over the 'central case', the project has the flexibility to respond to any effects and to mitigate them.

**4.3.42.** In this higher assessment case we have considered the effects of a peak workforce of 7,900. Given that our central case already aims to maximise local recruitment, it is anticipated that almost all additional construction workers in this scenario would be NHB. The associated development workforce has been increased to 600 to allow for the additional demands of the higher workforce (such as catering and bussing) and is assumed to all be home-based.

**4.3.43.** The overall number and concentration of NHB workers seeking accommodation close to the site is likely to increase if the workforce is larger than anticipated in the central case, due to the additional NHB workers seeking accommodation within 60-minutes of the site.

**4.3.44.** As the Gravity Model distributes NHB workers proportionately by the location of accommodation and distance/travel time from the site, any increase in workforce would likely be concentrated in areas close to the site, particularly in and around Leiston.

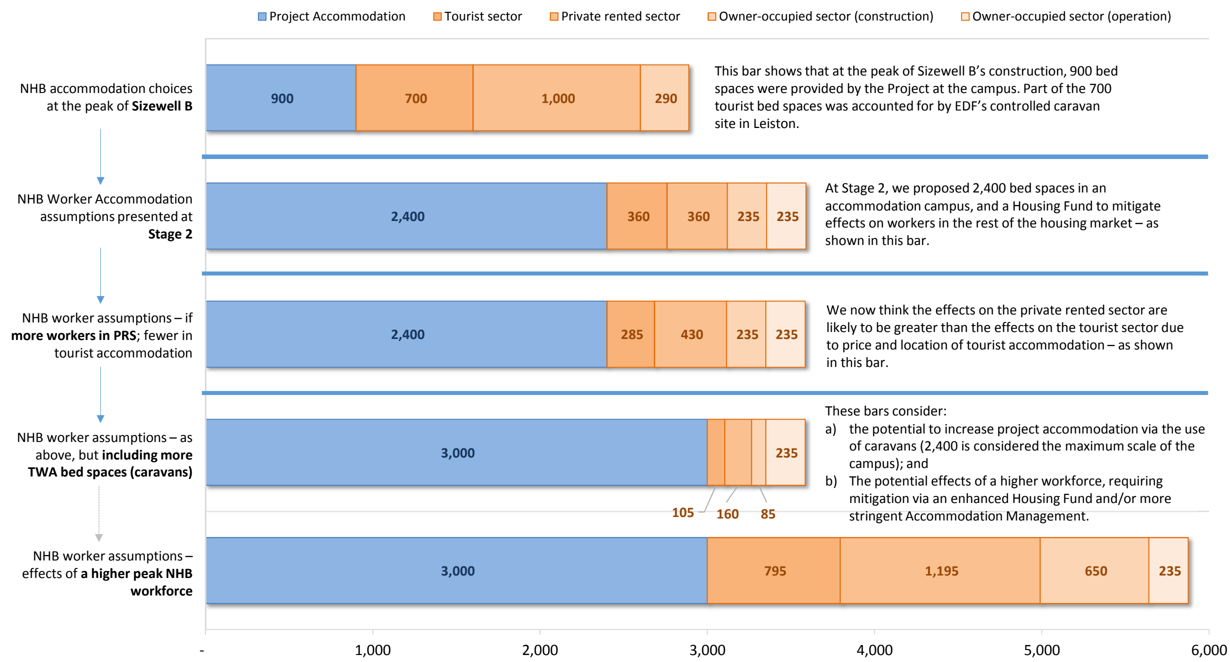
**4.3.45.** This would increase the pressure on local tourist and PRS accommodation, and may require additional mitigation, such as:

- additional temporary worker accommodation: this would not be provided through either an increase in the main development site campus size or an additional campus elsewhere but is most likely to be provided by the market responding to the additional demand and bringing forward proposals locally for a further caravan site or sites (either as new sites or extensions to existing sites), which would be considered by the council as planning applications;
- an enhanced housing fund (to support the private-rented sector); and
- extra assistance to support accommodation management, or to redress any effects on housing need exacerbated by the workforce.

**4.3.46.** As well as additional pressure on the accommodation market, an increased peak workforce could create additional pressure on community facilities and public services. This would be dealt with through scaling up of mitigation measures set out in the **section 4.4**. **Figure 4.4** sets out the range of potential accommodation scenarios with a 5,600 and 7,900 peak workforce, compared with the Sizewell B construction phase and Stage 2. It sets out by bar:

- The breakdown of accommodation used by workers at the peak of construction at Sizewell B.
- Our central case accommodation assumptions at the Stage 2 consultation with a 2,400 bed accommodation campus.
- Our central case accommodation assumptions for Stage 3 with a 2,400 bed accommodation campus, amended from Stage 2 shows that, based on experience from Hinkley Point C and through review of the stock, price and location of tourist accommodation in the area, workers are now considered more likely to choose rented accommodation over tourist accommodation.
- The effect of adding the LEEIE caravan site into the 5,600 central case at Stage 3: additional temporary worker accommodation is one of two options for managing the increase in predicted effects on the private-rented sector; the other is through the housing fund and these need to be balanced.
- Under the 7,900 higher assessment, both an enhanced housing fund and maximised use of temporary worker accommodation are likely to be necessary.

# Figure 4.4 Non home-based worker accommodation scenarios




## 4.4. Social/community strategy

### a) Introduction

**4.4.1.** EDF Energy recognises that the presence of a temporary construction workforce with a demographic profile different from the local area has the potential to alter the population of existing communities close to the project in the short-term.

**4.4.2.** In turn, this could potentially lead to effects on these communities and service providers, including from:

- construction workers (and their families in some instances) seeking access to existing public services and community facilities;
- an increase in demand for public services from members of the public or organisations as a result of the project;
- the project creating demand for facilities specifically for construction workers such as sport and recreation or occupational health; and
- indirect effects (e.g. through traffic generation) on the delivery of existing services such as police, ambulance and fire and rescue.

**4.4.3.** There may also be real and perceived effects on community safety and the potential for changes to community cohesion and integration, for example in terms of equality of access to services and facilities between Sizewell C's construction workforce and existing residents.

## b) Stage 2 consultation

**4.4.4. Table 4.5** summarises the responses received to Stage 2 consultation that have helped us develop our position on impacts on communities, community facilities and public services.

### Table 4.5 Stage 2 responses relevant to the social/community strategy for Sizewell C

**Demand for community facilities and public services**

- Concern about cumulative impact of development on demand for facilities including GPs, schools (linked to size and demographic of the workforce), sports and leisure.
- Opportunity for shared sports facilities, outside of the campus with potential community legacy benefits.
- Concern about cumulative impact of development on demand for services including public health services, adult and children's services (linked to size and demographic of the workforce).
- Further detail required on impacts on emergency services, specifically in relation to impacts on response times, safety aspects and workforce; and options for mitigating any potential significant adverse effects.

**Social cohesion/integration and 'Quality of Life'**

- Demographics of the local population different to Sizewell C workforce, leading to concern about social cohesion challenges.
- Concern about worker behaviour and in particular social cohesion issues in Leiston, linked to campus and other NHB accommodation.
- Requests for details of the proposed Community Safety Management Plan (CSMP).
- Concern about cumulative environmental effects on quality of life in communities – request for more information about Community Impact Reports.

## c) Managing potential community effects

### Access to public services and community facilities

**4.4.5.** Ahead of submission of an application for development consent, a detailed audit will be undertaken of existing and potential future school places, sport and leisure facilities, healthcare, social services and children's services.

**4.4.6.** EDF Energy is engaging with SCC and other stakeholders including District and Town Councils and emergency services with regard to specific issues raised at the Stage 2 consultation, for example on the potential effects of the construction workforce on the provision of healthcare, social care for adults and young people, the use of local facilities and services in settlements close to the site, and the potential effects on emergency response in the community.

**4.4.7.** This audit will take into account the underlying take up of services and current capacity (baseline). This would be combined with the workforce profile, demographics and spatial distribution to ascertain where potential effects may arise as a result of concentrations of NHB workers.

**4.4.8.** EDF Energy will continue to work with service providers to understand existing pressures across different services and in different spatial areas in order to ascertain where and when the construction workforce may have the potential to exacerbate existing pressure on these services.

**4.4.9.** Collaboration between EDF Energy and other service providers will aim to develop ways of both mitigating any effects on the existing capacity and maximising benefits where possible, recognising that local service providers are the experts and have well thought out strategies in place already that EDF Energy could support. Measures are likely to include:

- direct investment in physical infrastructure (embedded mitigation) to attract a high-quality workforce while simultaneously reducing the potential for undue pressure on services and facilities, for example through the provision of occupational health and recreation and sports facilities for workers; and
- financial contributions through section 106 agreements where there would otherwise be a significant adverse effect on services as a result of the project.

**4.4.10.** The level of mitigation would be proportionate to the potential significant effects generated by the NHB workforce – so if the workforce were to increase, EDF Energy would ensure that the overall (and localised) net effects on public services and community facilities would be adequately avoided or if not, monitored and mitigated.

### Schools and childcare

**4.4.11.** It is possible that some construction workers moving to the area for extended periods of time could bring their families with them, including dependent children who would require a place in local schools.

**4.4.12.** During Sizewell B's construction, this was mainly limited to those workers who moved to the area and bought property. At the peak of construction, those longer-term construction workers brought with them an average of 0.85 children each. However, evidence from Hinkley Point C suggests that this level of dependents is higher than would be expected from a modern construction workforce.

**4.4.13.** There are uncertainties around whether workers will bring children with them, and if so where they may choose to live. There is also a lack of certainty around future school capacity. At present, there is a high level of unused capacity in schools in Leiston, though this may not always be the case and will need to be regularly monitored.

**4.4.14.** As a result, EDF Energy recognises that there could potentially be effects on school capacity in localised areas, and are working with SCC to understand where issues could arise and to develop mitigation strategies to avoid adverse effects on capacity as well as to tackle potential transitional effects (i.e. turnover of pupils) and effects on cohesion and integration of those new pupils in existing schools.

**4.4.15.** Where children of construction workers have the potential to exacerbate effects on local school capacity, financial contributions could be made to address this.

### Social services (adult and children's services and safeguarding)

**4.4.16.** EDF Energy is working with SCC to understand existing pressures on the provision of services to support vulnerable adults, families and children in terms of the location of demand or services and the potential effect that a NHB construction workforce may have on service delivery and perceptions of workers within the community.

**4.4.17.** Some of the key issues raised at and since Stage 2 include:

- Potential effects on vulnerable young people and care leavers, particularly in Leiston, and particularly those who are in housing need or vulnerable to homelessness.
- Potential effects related to cultural differences between NHB construction workers and residents.
- Potential effects related to drugs, alcohol and prostitution including exploitation of young girls by a predominantly male workforce, and trafficking.
- Potential effects related to access to and delivery of sexual health services and increase in youth pregnancy.
- Potential effects on the delivery of services, particularly to vulnerable older people who wish to remain in their homes but require care.
- Potential demand for social services and mental wellbeing services from construction workers and their families.
- Safeguarding of children at specific facilities such as Summerhill School and Pro-Corda (Leiston Abbey) as a result of trespassing and proximity to the main development site.

**4.4.18.** Following initial discussions, EDF Energy will continue to work with service providers to understand the key issues and provide information on the potential scale, location and characteristics of the construction workforce.

**4.4.19.** In collaboration we aim to set up contingency measures for any potential effects should they occur, for example:

- By committing to link implementation strategies with priority social services target groups, for example so that outreach programmes target children Not in Education, Employment and Training (NEETs) and other vulnerable groups.
- By specifically targeting hard to reach and vulnerable groups that may experience difficulties accessing or retaining housing as a result of the project's effects on the lower end of the PRS.
- By supporting community liaison activities to address any issues that may arise from members of the public and especially vulnerable residents who access key public services.
- By working bilaterally with those organisations closest to the project that raise safeguarding concerns to identify practical and effective solutions.
- By providing community information and worker information to promote integration and awareness,

including of cultural differences and local sensitivities.

- By delivering an occupational healthcare package for workers that will avoid adding pressure on services currently provided by public bodies.
- By implementing a CSMP and Worker Code of Conduct, along with mandatory drug and alcohol testing of the workforce.

## Healthcare facilities

**4.4.20.** EDF Energy will work with stakeholders to address concerns about the potential effects of the project on services such as GP surgeries, as well as effects on general service provision, emergency provision and effects on public health.

**4.4.21.** In general, the majority of potential adverse effects will be avoided through EDF Energy's commitment to providing occupational health services for its workforce at the main development site – details of which are included in the following sections.

**4.4.22.** There may be some residual effects on local NHS provision, including where the occupational health provider refers workers to NHS services (where these are not funded by the service provider at their permanent address) and where services are accessed by families of NHB workers.

**4.4.23.** Where it is clear that these effects are additional to the population for which local NHS services are already funded, EDF Energy will work with service providers to mitigate the effects until funding has been able to catch up, most likely via financial contributions through the section 106 agreement.

**4.4.24.** In addition, we are working closely with the East of England Ambulance Service to identify potential effects in the community, at the site and on response times (as a result of construction traffic) and to implement design and mitigation measures to limit them.

## Emergency services and emergency preparedness

**4.4.25.** At the Stage 2 consultation, EDF Energy set out its intention to develop an emergency services working group in order to work with fire and rescue, police and ambulance services and coastguard to determine the level of additional need that may arise as a result of the project and how to mitigate any potential adverse impacts.

**4.4.26.** Since then, this group has identified a set of actions to resolve concerns raised. These include the following themes:

- Influencing the design–ensuring that the main development site and the accommodation campus, and other associated development has in-built mitigation to reduce the risk of security and safety incidents.
- Meeting project demand–planning for the number and type of incidents that may occur onsite that could require emergency services, and developing protocols for onsite response, specialist training and access to the sites (both terrestrial and marine).
- Community response–making sure that the project does not hamper 'business as usual' due to traffic or off-site demand for services for workers living in the community, for example. A key part of this will be to regularly brief multi agency partners to ensure key safety information related to the project is understood. This could be implemented using section 106 funding.

**4.4.27.** We aim to learn as much as possible from our existing operation at Hinkley Point C and the experience of Tier 1 contractors, and are reassured that emergency services in Suffolk are developing relationships with partners in Somerset to understand the scale of the project and the levels of additional resource that may be required to address the types of issues that may arise.

**4.4.28.** The role of contractors will include the development of rigorous health and safety requirements as part of their contracts to be implemented through a series of risk and management plans. Contractors will comply with industry standards and guidance e.g. stockpile management, hazardous substances etc.

**4.4.29.** We aim to set up strategic relationship agreements with all emergency service providers setting out actions that will be taken by EDF Energy and, where appropriate, partners to avoid and/or manage impacts. This is likely to include:

- approach to preparation and training of staff for the build-up of the project in order to ensure workforce resilience;
- approach to intelligence and incident planning, as well as costs associated with the increased workforce and any effects identified from the project on call-outs and response times;
- approach for monitoring and mitigation of effects based on the level of NHB workforce (excluding those paying council tax) and number of incidents;
- investigating the potential for a Community Safety Officer to raise awareness of safety issues in the local community; and
- assessment of any potential need for specialist equipment.

**4.4.30.** In terms of emergency preparedness, the Sizewell C construction site will fall under Sizewell B's emergency arrangements until such time as the site is preparing for the arrival of nuclear fuel, towards the end of the construction period. Thereafter, Sizewell C will require its own emergency arrangements. We will work within the framework of the Sizewell Emergency Planning Consultative Committee to develop plans both for the construction and operational phase.

### Sports and recreation

**4.4.31.** Sizewell C would need to provide construction workers with access to sports and recreation facilities, in order to help attract and retain a high quality workforce and avoid pressure on existing facilities used by the local community.

**4.4.32.** At Stage 2 we proposed that sports facilities would form part of the on-site accommodation campus (Options 1 and 2i) or be provided off-site (Option 2ii) at a location to be determined.

**4.4.33.** There was support at Stage 2 for off-site facilities, to be located in Leiston and left as a legacy for the community following the construction phase. This is supported by our predictions for the distribution of NHB workforce at peak, which show a significant proportion would be located in or close to Leiston either in the campus, caravan site or existing local accommodation.

**4.4.34.** Since Stage 2, we have reviewed SCDC's research into existing levels of provision and demand for sports facilities in the area (Ref. 4.17).

**4.4.35.** We have also forecast demand likely to arise from the NHB construction workforce using research undertaken by Sport England. This identifies that certain facilities tend to be used by certain demographics. In the case of the predominantly male, young to middle-aged Sizewell C workforce, forecasts suggest that the greatest demand is for football facilities and gym facilities.

**4.4.36.** Finally, we have considered other similar projects, including Hinkley Point C and Wylfa Newydd power stations as benchmarks for provision.

**4.4.37.** This information has been used alongside consultation with SCDC, Leiston Town Council and other stakeholders to determine:

- current gaps in community provision, both now and taking into account expected population growth (excluding Sizewell C);
- what facilities may be required by the construction workforce; and
- how and where (in Leiston) facilities might be accommodated and managed, including how they could most effectively incorporate community use alongside worker use and leave a positive legacy.

**4.4.38.** Based on the council's methodology, and given the weighting in terms of demographics and market segmentation, the workforce is expected to require the following sports facilities which would also fill existing gaps in provision and be of benefit to the community through shared access during the construction phase and being left as a legacy thereafter:

- a full-sized synthetic turf football pitch (currently the closest facilities are in Framlingham and Woodbridge); and
- at least two multi-use games areas (MUGAs) (currently the closest facility is in Yoxford currently).

**4.4.39.** EDF Energy is working with SCDC to identify the potential for these new sports facilities to be provided on land between Leiston Leisure Centre and Alde Valley Academy with shared access between Alde Valley Academy, construction workers and the community.

**4.4.40.** Consent would likely be sought through a Town and County Planning Act 1990 (Ref. 4.18) application with funding secured through the section 106 agreement for Sizewell C and we are working with SCDC and their partners to define management and access arrangements.

**4.4.41.** It is expected that workers would generally require the facilities during weekday evenings and part of the weekend, which would mean Alde Valley Academy could access the facilities during school hours. The facility could be available for the community at set times during the weekends and potentially during the week, although Sizewell C will be learning lessons from the Hinkley Point C campuses to understand likely worker usage patterns before finalising the proposals.

**4.4.42.** There would also be demand for gym facilities for construction workers and these would be provided on the campus, along with an exercise route around the perimeter of the campus site. The campus would also include recreational areas, including a canteen, TV rooms and bar for use by Sizewell C workers.

**4.4.43.** Providing a range of on and off-site facilities would ensure workers have a range of leisure options which in turn should limit pressure on community facilities.

**4.4.44.** Some workers may prefer to join existing sports clubs and use existing facilities, which will have the positive effect of boosting gym memberships or increasing participation in local sports clubs. There may be some existing facilities within communities that could be used by workers. In these cases, financial contributions to mitigate any additional effect on their capacity may be appropriate.

### Community cohesion/integration

**4.4.45.** At Stage 2, we outlined our approach to managing potential community cohesion/integration effects through:

- The provision of an accommodation campus and an accommodation office as part of a robust accommodation strategy.
- Developing community liaison protocols.
- Enforcing a strict worker Code of Conduct and drug and alcohol testing policies to ensure high levels of worker behaviour are maintained.
- Researching community cohesion issues within the construction sector in the East of England and nationally including issues related to the NHB workforce, use of services, housing, access to jobs, training and education, anti-social behaviour and perception issues relating to the demographic make-up of the NHB workforce.

**4.4.46.** Earlier in this chapter, we set out the potential demographic characteristics of the NHB construction workforce. We recognise that there may be challenges in integrating a workforce with specific characteristics and needs into an existing community and we will work with partners and contractors to ensure that the workforce can integrate with existing local communities, and vice-versa.

**4.4.47.** The Government's Integrated Communities Strategy Green Paper (the Green Paper) (Ref. 4.19) sets out definitions of community integration and potential reasons for division. It identifies that integration is not assimilation, and that integrated communities are: "communities where people live, work, learn and socialise together, based on shared rights, responsibilities and opportunities–underpinned by a shared set of British values–tolerance, freedom and equality of opportunity–which have helped make Britain one of the most successful multi-faith, multi-ethnic societies in the world."

**4.4.48.** The Green Paper sets out the target areas that should be investigated by local government, business, voluntary and community sectors to ensure integrated communities, many of which will form a fundamental part of EDF Energy's commitments for Sizewell C as set out in **Table 4.6**.

### Health and wellbeing

**4.4.49.** The construction and operation of Sizewell C has the potential to influence health and wellbeing (both adversely and beneficially) through a number of socio-economic, environmental and social pathways. The significance of such influences may vary both spatially and temporally, and are further modified by varying community circumstance and relative sensitivity.

**Table 4.6** Integrated Communities Green Paper 'integration initiatives' and EDF Energy's proposed actions to mitigate/avoid potential significant adverse effects at Sizewell C

| Green Paper Integration Initiatives | EDF Energy Initiative for Sizewell C |
|---|---|
| **Leadership to drive integration** | |
| • *Public authorities are required to include an equality objective outlining specific activity to promote integration.*<br>• *Priority policies and services will be reviewed to determine how they might best drive integration.* | • EDF Energy will work with public service providers and individual facilities (such as schools) to provide them with up-to-date information about the construction workforce and management plans to ensure services are aware of potential demand in advance. |
| **Support for migrants** | |
| • *Review of impact of English language requirements on visas, and future requirements.*<br>• *Review of Life in the UK test.*<br>• *Potential provision of information on life in the UK for prospective migrants.*<br>• *Provision of information for recent migrants to support integration.* | • EDF Energy recognises that some NHB construction workers will require information about the area, and help to access public services (e.g. through translation). Welcome packs and information will be provided on induction to the project, and EDF Energy will work with contractors to ensure the workforce is aware of their surroundings. |
| **Support for young people** | |
| • *Help ensure school intake is representative of the wider area and promote mixing arrangements between schools in areas of high segregation.*<br>• *Promote British values across the curriculum.*<br>• *High standard of safeguarding.*<br>• *Promote meaningful social mixing.* | • EDF Energy will identify the potential for uptake of school places by workers and inform providers and facilities of any additional requirements, and monitor demand for services including ESL and safeguarding.<br>• EDF Energy will require its workforce to adhere to a strict Code of Conduct. |
| **English language** | |
| • *Potential new strategy for English language in England:*<br>– *new community-based English language programme*<br>– *improved provision of English language learning (integration areas)*<br>– *new network of community-based conversation clubs.* | • The UK construction workforce has a high level of English language proficiency.<br>• However, as a contingency measure, EDF Energy will work with Tier 1 contractors to ensure translation services are available. |
| **Residential segregation** | |
| • *Programme of work to determine what changes to housing policy and practice would help in addressing residential segregation.* | • EDF Energy is acutely aware of potential effects of the construction workforce on vulnerability to homelessness. Proposed mitigation measures are set out in this chapter. EDF Energy's CSMP will also ensure that workers are able to access secure and adequate quality accommodation. |

| Green Paper Integration Initiatives | EDF Energy Initiative for Sizewell C |
|---|---|
| **Economic opportunity** | |
| • *Additional funding for Jobcentre Plus (JCP) to support people from most segregated communities.*<br>• *Support economically inactive people through pathways to work.*<br>• *Support people from ethnic minorities into work in places where there is a gap in employment rates.*<br>• *Increase take up of apprenticeships by people in isolated communities.* | • EDF Energy's plans to enhance local employment, skills and training benefits include:<br>– an apprenticeship strategy;<br>– development of a series of outreach initiatives to maximise opportunities for people to gain employment during the project;<br>– partnerships with local organisations to deliver an employment brokerage, to place people into sustainable employment; and<br>– measures to identify and address barriers to work for target groups including the unemployed and young people not in education, employment or training (NEETs). |
| **Challenge practices that can hinder integration and equal rights** | |
| • *Empower marginalised women*<br>• *Understand ways overseas influences can undermine attitudes to rights and freedoms in the UK*<br>• *Support faith communities and interfaith dialogue*<br>• *Support delivery of the Hate Crime Action Plan.* | • EDF Energy has a commitment to enhance the diversity of the construction workforce, for example by raising the profile of women in construction.<br>• EDF Energy will enforce a Code of Conduct that will not tolerate hate crime or discrimination and will work with Suffolk Constabulary to address any potential significant effects. |
| **Learn what works in building integrated communities, and share that learning** | |
| • *Involving local communities in decisions about social and economic regeneration should unite communities behind their common interest in making areas more prosperous, better places to live and provide more opportunities for the future.* | • EDF Energy will instigate a community fund to ensure that any intangible residual effects of the project can be managed effectively and reactively throughout the project. |
| **Shared space and facilities** | |
| • *Support for shared community activities through culture and sport, including working with Sport England to use sport to bring people together.*<br>• *Support for shared community spaces, including community hubs and libraries, and parks which help to create a sense of place and foster local residents' pride.* | • EDF Energy has listened to feedback from previous consultations and will seek to deliver:<br>– a visitor information centre that can be accessed by the community and community organisations; and<br>– shared sports facilities to enhance community provision. |

**4.4.50.** Potential health issues and opportunities will be addressed through a HIA and associated HAP, in consultation with key health stakeholders including Public Health Suffolk, SCC, SCDC, the NHS and the East of England Ambulance Service. This will enable more health conscious planning and mitigation geared to local circumstance, priorities and need.

**4.4.51.** The purpose of the HIA and HAP will be to:

- ensure that potential hazards are addressed through planning to protect health;
- maximise potential health benefits of the project through healthy design tailored to local health circumstance, priorities and needs;
- ensure that those working on the project (both home-based and NHB staff) have adequate access to appropriate healthcare, supporting EDF Energy's commitment to health and safety, and complimenting local health care capacity; and
- ensure that community access to healthcare and social services supporting physical and mental wellbeing are not adversely impacted by workers or their families.

## Table 4.7 Potential health pathways to be assessed and addressed

| Health Pathway | Health Determinant | Potential Implication | Distribution |
|---|---|---|---|
| **Construction** | | | |
| Changes to local air quality (including potential dust nuisance) | Environment | Adverse | Local |
| Changes in noise exposure | Environment | Adverse | Local |
| Changes in local transport nature and flow rates | Environment | Adverse | Local/regional |
| Direct, indirect and induced employment opportunities | Socio-economic | Beneficial | Local/regional |
| Changes to local population structure and impact on community facilities and healthcare capacity due to the introduction of a temporary construction workforce | Socio-economic/ public health | Beneficial and/or adverse | Local |
| Changes to local population structure and impact on community facilities and healthcare capacity due to the introduction of a temporary construction workforce | Socio-economic/ public health | Beneficial and/or adverse | Local |
| Increase in exposure to and use of lifestyle risk factors (e.g. drugs, alcohol, sexual health, communicable disease) due to the presence of a temporary construction workforce | Socio-economic/ public health | Adverse | Local |
| **Operation** | | | |
| Changes to local air quality (from plant operation, Combined Heat and Power (CHP) and traffic) | Environment | Not significant | Local |
| Changes in noise exposure (from plant operation, CHP and traffic) | Environment | Not significant | Local |
| Potential changes in exposure to radiation and radioactive materials | Environment | Not significant | Local |
| Changes in local transport nature and flow rates | Environment | Not significant | Local |
| Direct, indirect and induced income employment opportunities | Socio-economic | Beneficial | Local/regional |
| Changes to local population structure and impact on community facilities and healthcare capacity due to the introduction of a permanent operational workforce | Socio-economic/ public health | Not significant | Local |
| Meeting energy demand and reducing energy poverty | Socio-economic | Beneficial | National |
| Raised awareness, education and training | Socio-economic | Beneficial | Local/regional |

**4.4.52.** The HIA scope was agreed with Public Health Suffolk ahead of the Stage 2 consultation, taking into account Stage 1 feedback. This scope has since been revisited to ensure it takes account of Stage 2 responses and will be further refined to take into account Stage 3 responses and consultation with the key stakeholders set out above. The potential health pathways set out in **Table 4.7** will be assessed and addressed through the HIA and HAP.

**4.4.53.** As this workstream is dependent on assessment outputs from several of the environmental topics, which in turn require a final project design, the HIA will be completed towards the end of the pre-application period (post Stage 3). The final assessment will investigate each of the health pathways, and include bespoke public health mitigation (in terms of health protection, promotion and care), accounting for local community circumstance and need.

**4.4.54.** In terms of potential mitigation, we intend to provide an on-site occupational health service during the construction phase, in order to support the health and wellbeing of workers, help attract and retain a quality workforce and avoid capacity effects on local health services. This would include a range of services, such as:

- Health risk prevention e.g. pre-induction screening, medical assessment; drug and alcohol testing; and site safety tours aimed at identifying and addressing risks to staff health and well-being.
- Health promotion, supporting local public health objectives and priorities through targeted health campaigns and supporting healthier lifestyle choices and behaviours.
- The provision of an onsite GP surgery service for workers, improving the diagnosis and clinical intervention of conditions, complementing local public health care provision and reducing the impact on local health care capacity.
- Management of referrals for further assessment/treatment off-site.
- Collation of monthly incident/treatment reports and statistics.
- Emergency response capability provided both via occupational health and also first aiders within the Tier 1 workforce.

**4.4.55.** Potential residual impacts will be assessed as part of the health assessment, and addressed via an appropriate health care planning contribution (section 106 agreement).

### Local, in-combination effects – Community Impact Reports

**4.4.56.** The construction and operational effects of the Sizewell C project will be assessed at a local scale across a number of environmental topic areas such as noise, air quality, landscape and visual, traffic, amenity and recreation, and heritage, as well as effects on the community and economy as set out in this chapter.

**4.4.57.** Many potential effects would be avoided, mitigated or managed through design or specific measures, as set out in this chapter and in the Preliminary Environmental Information (PEI) for the different elements of the scheme (as far as developed at Stage 3). These measures should reduce residual effects as far as practicable. However, we recognise that together, even relatively insignificant residual impacts may have the potential to lead to in-combination effects on local communities.

**4.4.58.** Once the formal environmental assessments have been undertaken, following Stage 3, we will draw together the impacts of each element of the project on individual communities and proposed mitigation measures into a Community Impact Report. This will include but not be limited to Leiston, Theberton and Eastbridge.

**4.4.59.** We recognise that the effect of the combination of environmental impacts cannot always be quantified and therefore directly mitigated. As a result, EDF Energy would provide a community fund as part of the section 106 agreement, to ensure communities could access compensation for general or combined disruption as effects arise. More details in relation to the community fund are set out below.

### Community fund

**4.4.60.** EDF Energy recognises that there will be residual impacts on local communities as a result of combined environmental effects, both perceived and real. In some instances, these can't be directly mitigated through physical design measures, and require a more reactive approach.

**4.4.61.** The community fund would be provided for schemes, measures and projects which promote the economic, social or environmental well-being of communities and enhance their quality of life.

**4.4.62.** Funding should be relevant to the effects identified, either by reducing or removing impacts or by helping the community to take advantage of opportunities presented by the project. This may include:

- small grants to charities, voluntary groups and social enterprises–awarded for projects, measures or initiatives that help to compensate for effects felt in the community from the construction of Sizewell C; and
- more strategic grants–for example for investment in local facilities or services to boost the positive and address the negative impacts on the host communities.

**4.4.63.** In recognition that certain communities closer to the main development site are likely to experience effects across a wider range of social, economic and environmental areas, EDF Energy is proposing to ring-fence a part of the fund for these communities.

### Community Safety Management Plan and Worker Code of Conduct

**4.4.64.** We are developing a CSMP in collaboration with local authorities and the emergency services. This will outline the approach to community safety in the area including:

- a precautionary approach to managing impacts on community safety, cohesion and public services, with a focus on prevention where possible;
- an information pack for accommodation providers in the PRS and tourism sector, setting out expectations of the workforce and the Code of Conduct, as well as expected accommodation standards and fire safety measures;
- a mechanism for the local community to register public concerns, through (for example) a hotline and awareness campaigns; and
- provision of occupational health services to reduce pressure on existing facilities and a review of any residual public health care requirements from NHB workers and their dependents.

**4.4.65.** We would also develop a Code of Conduct in partnership with contractors to set expected standards of worker behaviour both on-site and in the community and to enable prompt and effective action to be taken to address any cases of unacceptable behaviour.

**4.4.66.** The conduct of the workforce in the community is of the highest importance and we would expect everyone who conducts business on our behalf to adopt high ethical standards. All workers would be required to sign the Code of Conduct and this would be regularly reinforced through training. Measures are likely to include the following (taken from the Hinkley Point C Code of Conduct):

- Workers will be expected to have due respect to their own safety and the safety of others by complying with all applicable laws, rules, and regulations including project processes and procedures.
- Be ambassadors for the project through behaviours and actions both on and off-site.
- Understand that anti-social behaviour, discriminatory behaviour or harassment will not be tolerated on or off-site. Workers must respect colleagues and endeavour to maintain harmonious workplace relations at all times. It is never acceptable to use abusive or derogatory language towards others or inappropriately use emails and social media.
- Come to work fit for work. Workers must ensure that they are not intoxicated by alcohol or under the influence of illegal drugs. Workers should not work under the influence of prescription drugs if they could reasonably expect that there may be effects on their work performance or on the safety of themselves or others. Random and for cause alcohol and drug tests will be regularly performed. Alcohol and illegal drugs are not to be brought onto any project site or office.
- Ensure no damage of any kind is caused to property on and off-site.
- Ensure that accommodation is maintained in a tidy state with the proper disposal of rubbish.
- Ensure that personal noise levels are appropriate to the time of day and location.
- Respect speed limits; be aware of other road users, agricultural vehicles and livestock.
- Make use of the park and ride services available and do not fly park at any time.

**4.4.67.** Failure to comply with the Code of Conduct may result in dismissal from the project, as enforced at Hinkley Point C.

## **Table 4.8** Summary of Stage 2 Responses relevant to the economic strategy for Sizewell C

### Skills and Education

- A strong commitment to local upskilling is needed.
- Comprehensive proposals for engaging with education to enhance teaching, learning and achievement in science, technology, engineering, maths, and construction (STEMC) subjects are expected. There is an expectation that EDF Energy will invest further in the STEMC education programme to promote excellence, raise career awareness, and enable relevant experiences.
- Expect EDF Energy to set stretching targets for the recruitment and training of apprentices and to develop a clear apprenticeship strategy that meets these ambitions.
- Urge ambitious approach to recruiting and training local workers for high skilled well paid jobs.
- Further information requested on plans to work with existing plans and policies to secure economic growth and resilience, skills improvements and business benefits.
- Clearly identify collaboration approaches e.g. with NALEP, SCC and other partners.
- Skills strategy required ahead of completion so that skills are in place in time for delivery.
- Targeted strategy for deprived areas and areas of social inequality.

### Business and supply chain

- Identify support for local firms to access the supply chain.
- Identify opportunities for collaboration with local authorities and sector/skills bodies on supply chain initiatives.
- Identify learnings from Hinkley Point C to apply best practice and an estimate of local and regional economic effects, and help Suffolk companies get involved at Hinkley Point C.
- Establish roles and responsibilities of Tier 1 and Tiers 2 and 3 contractors.
- Identify opportunities for inward investment.
- Commit to a local supply chain plan, with options for a local procurement presence or supply chain advisor.
- EDF Energy to engage with Growth Hub and consider embedded Sizewell C specialist.
- Explore opportunities to link in with other energy companies/work with the East of England Energy Group to link across the energy sector.
- Focus on growing local companies and encouraging Tier 1 contractors to relocate to Suffolk.
- Increasing productivity and encouraging innovation are key national and regional aims. Encourage EDF Energy to engage with NALEP and Tech East to make Sizewell C a catalyst and exemplar project.

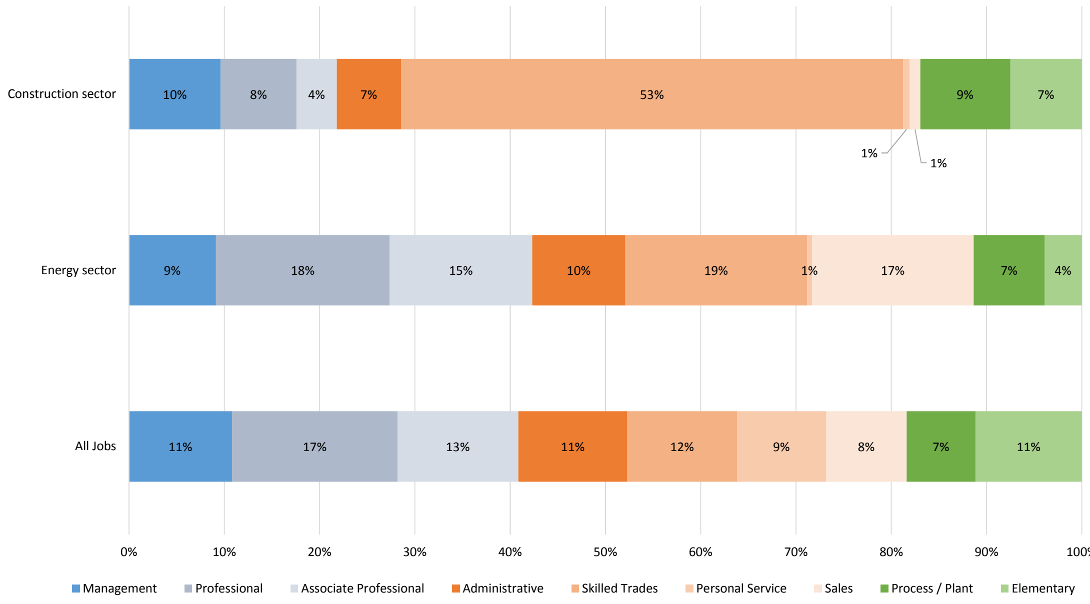
### Jobs, the economy and labour market resilience

- Up-to-date data needs to be presented with respect to potential available construction workforce to gain current understanding of labour pressures in the construction industry and wider related sectors.
- Need to avoid 'boom and bust'.
- Require analysis of workforce availability, salary levels and displacement employment issues for local businesses.
- Adverse economic impacts to be identified e.g. skills and labour market displacement. Concern about skills displacement from key construction sectors such as housebuilding, and non-construction sectors such as emergency services and hospitality.

### The tourist economy

- Concern about construction traffic, environmental effects and effects on perception of the area deterring visitors from the area long term.
- Support for a visitor centre.
- The assessment of tourism should consider sub-county effects e.g. on Heritage Coast and Area of Outstanding Natural Beauty (AONB).
- Explore options for a collaborative, impartial survey of tourism.

**Figure 4.5** Comparison of occupational skill level of energy and construction jobs vs. average for all jobs




## 4.5. Economic strategy

**4.5.1.** Sizewell C would comprise a significant investment in a highly productive, high-tech and low carbon sector that would create substantial direct economic benefits throughout its construction and operation through employment, skills development and supply chain opportunities for businesses, both locally and nationally.

**4.5.2.** However, without intervention there is also the risk of adverse economic effects, for example on tourism. There is also a significant opportunity to enhance the benefits of employment, skills and business competency in the local area.

### a) Stage 2 consultation

**4.5.3.** **Table 4.8** summarises the responses received to Stage 2 consultation that have helped us develop our position on economic impacts, and will enable us to develop an economic strategy to help enhance the benefits and avoid any adverse effects of Sizewell C:

**4.5.4.** The following sections set out our approach to addressing Stage 2 responses, identifying potential effects against a dynamic labour market baseline, and mitigating effects/maximising benefits for the economy.

### b) Employment in energy and construction

#### Scale and characteristics of energy and construction employment

**4.5.5.** Since Stage 2, we have been working to develop our understanding of the existing labour market in Suffolk and the East of England, as well as the UK construction sector as a whole. This approach uses public datasets and desk-based research, and will allow us to predict the potential effects of Sizewell C, as a result of its construction workforce and supply chain, on people and the economy.

**4.5.6.** The construction and energy sectors remain at the forefront of SCC and NALEP's priorities for sectoral economic growth. Output from these sectors in Suffolk is estimated at around £3.44billion (bn) per year – accounting for nearly a quarter of Suffolk's Gross Value Added (GVA) (ONS GVA estimate 2012) (Ref. 4.20).

**4.5.7.** These sectors have a higher proportion of high skilled jobs than average (**Figure 4.5**), with high productivity and output, and higher average salaries. In the East of England, the average (median) annual salary for construction is £31,518 and energy is £42,587 – 39% and 87% greater than average salaries in the region respectively (Ref. 4.21).

**4.5.8.** There are an estimated 312,000 jobs in Suffolk and 2.7 million in total across the East of England. Of these, approximately 16,000 (Suffolk) and 149,000 (East of England) are in the construction sectors.

**4.5.9.** Around 10% of construction jobs in Suffolk are in civil engineering sectors, with 50% in construction of buildings and 26% in installation, electrical and plumbing sectors.

**4.5.10.** There are twice as many people employed in the construction sector as there are construction jobs based in Suffolk with 31,800 people in employment in the sector (Ref. 4.22). This reflects the mobility within the construction sector generally and especially in Suffolk, with many workers commuting to other locations for work. Across the East of England that figure is 257,000, accounting for 11% of the UK's construction workforce.

**4.5.11.** The number of workers, their skills and qualifications will in part determine how many local people are likely to be able to secure roles at Sizewell C. This helps us to identify the potential for interventions in the labour market that would enable upskilling and routes to employment, leading to sustainable careers in the construction sector via Sizewell C.

**4.5.12.** By understanding the local employment sector and the education and skills base that supports it, it is possible to explore both potential capacity and availability, as well as barriers limiting the potential uptake of employment opportunities, and to then work with the SCC and other stakeholders including NALEP and educational institutions to improve access to a range of employment and career opportunities through targeted initiatives and support.

### Sizewell C's influence on employment in construction and operation

**4.5.13.** Sizewell C would create approximately 25,000 job roles during construction, followed by a permanent workforce of 900 people to operate the power station, and a regular short-term workforce in the region of 1,000 people associated with planned outages.

**4.5.14.** The project would also require a significant workforce in non-construction roles, both directly and in the supply chain. These jobs would be split across a number of sectors, including tourism and hospitality, food production and business support and administration. Many of these sectors are already strong in Suffolk. Therefore, improvements to the skills base as a result of new jobs at Sizewell C would offer a tangible long-term legacy. This is certainly the case for the tourism sector, which has been identified as lacking higher skilled roles and experiencing a high level of seasonality.

### The UK's industrial strategy

**4.5.15.** The Government's Industrial Strategy sets out 'foundations of productivity' to transform the UK economy including: a major upgrade to the UK's infrastructure; good jobs and greater earning power for all; prosperous communities; the world's most innovative economy; and the best place to start a business.

**4.5.16.** A number of key policies set out by the Industrial Strategy to achieve these foundations are aligned with our aspirations for Sizewell C, including:

- establishment of a technical education system and investment in STEM, alongside a programme for re-training for sustainable careers in construction;
- launching sector deals to increase productivity in construction and improve the productivity and growth of small and medium-sized businesses; and
- building on local strengths and economic opportunities, including working closely with the nuclear and offshore wind industries to further drive down the costs of clean power, while building UK supply chains.

### Construction skills in the UK and the East of England – existing context for construction and energy sector skills

**4.5.17.** The National Infrastructure Plan for Skills (2015) (Ref. 4.23) identifies the importance of investment in infrastructure in improving the UK's productivity and building sustainable careers with a strong foundation of skills and training, particularly in vocational roles and STEMC areas. It outlines the importance of establishing a network of Institutes of Technology to deliver this provision sponsored by employers and professional bodies, something that EDF Energy is keen to engage within Suffolk and as a key player in the wider construction and energy sector.

**4.5.18.** EDF Energy is fully aligned with and in a position to help meet the challenges set out by the plan, which include:

- bringing more workers into the infrastructure market, as new apprentices, technicians and graduates and by attracting skilled workers from other industries;
- retraining, mobilising and upskilling the existing workforce to deliver improved productivity and performance demanded by the changing profile of investment and modern methods of construction;
- improving the way the labour market operates including through better data on supply and demand; and

- changing the image of the construction sector which remains a barrier to attracting new entrants and encouraging greater diversity (a key tenet of the Construction 2025 Industrial Strategy (Ref. 4.24)).

**4.5.19.** NALEP's Sector Skills Plan for Construction (2016) (Ref. 4.25) suggests that construction skills shortages are significantly affecting the delivery of projects across the industry, and that apprenticeship rates have fallen and education providers have reduced capacity for intake in construction related courses.

### Potential in the labour market and the economic cycle

**4.5.20.** At Stage 2, concerns were raised about the project's potential effects across the economic cycle, and in respect to the availability of local workforce, including potential displacement effects on employment from other sectors.

**4.5.21.** We recognise that Sizewell C will have a long construction period and is likely to take place against a background of changing economic conditions. We are keen to ensure that the project can respond to changes in the economic climate, which may affect the availability of labour locally and nationally; directly and within the supply chain.

**4.5.22.** The adverse effects of the 'trough' in an economic cycle are most commonly high unemployment, underemployment, low wages and inequality. On the other hand, there may be a perception that at the 'peak' of a cycle, there is insufficient slack in a labour market to meet the job and skill requirements of unique projects such as Sizewell C.

**4.5.23.** As such, it is key to understand the economic characteristics of each stage of the economic cycle as experienced in Suffolk. We have reviewed economic data over and beyond the last economic cycle to identify trends.

**4.5.24.** The data collected suggests that there is always significant range, flexibility and movement within the labour supply in Suffolk, and particularly Suffolk Coastal partly due to its sectoral make-up. At present there are 33,000 people in Suffolk who are unemployed but seeking work or economically inactive but want to work, and this figure is a ten year low.

**4.5.25.** Reducing economic inactivity and increasing the employment rate is a major government objective and underpins a range of policy related reforms to the benefit system. EDF Energy is keen to maximise the benefit of the project to this sector of the labour market.

**4.5.26.** In addition:

- Suffolk has seen a steady increase in total number of jobs over the last 30 years, with an average annual growth rate of around 1.3%. The number of jobs has increased by around 70% in Suffolk Coastal and Mid-Suffolk in this time.
- The structure of the Suffolk and Suffolk Coastal economies are different from the UK as a whole, with higher concentrations of transport and storage jobs and utilities/energy jobs, and lower concentrations of office based sectors including business, finance, legal and professional services. Suffolk Coastal in particular has a low concentration of these activities, although a high concentration of information and communication jobs.
- Suffolk Coastal's employment profile, over time, has had a relatively stable increase in total jobs. There was a notable peak in construction employment in the years leading up to the peak of Sizewell B construction, which then plateaued but has remained stable since.

### The potential for workforce displacement

**4.5.27.** Concern was raised in response to Stage 2 around the impact of labour demand from the project and specifically that it would encourage people to change jobs, leaving behind vacancies that are hard to fill in general construction sectors, hospitality and public and emergency services.

**4.5.28.** Sizewell C will generate a significant number of jobs during the construction phase, within civils-type and more skilled M&E construction roles. This would generally be considered a significant benefit to the economy, though we are concerned to ensure that this causes as few significant adverse effects as possible.

**4.5.29.** We have worked to identify the scale of employment generated, the types of skillsets required, and the spatial distribution of the workforce in the context of the existing labour market in Suffolk. At the peak of construction, our central estimate is that the project will employ approximately 2,500 home based workers (of which 2,000 would be in construction, 500 in associated development), who will have been drawn from four different categories:

- local residents without a job or with spare capacity for work;
- local residents who will change job;
- local residents whose employer gets a contract on the project; and
- local residents who work elsewhere or are self-employed and/or work on very short-term contracts/tenures.

**4.5.30.** EDF Energy agree with stakeholders that the project should aim to achieve a high level of local benefits by recruiting from all of the above categories but recognise that residents who will change job are the group of concern for existing local businesses, local authorities and NALEP.

**4.5.31.** Local residents without a job or with spare capacity for work provide significant potential for recruitment based on existing and continual spare capacity in the labour market as set out above; and this could be enhanced through Sizewell C's package of skills and education measures. Sizewell C would recruit people who would then gain long-term, sustainable skills that are transferrable once the construction phase is finished.

**4.5.32.** It is expected that some local residents will also change jobs but based on the data presented above, we do not consider there is likely to be a shortage of workers due to the dynamic labour market being both flexible and responsive. In particular, the construction sector is:

- highly mobile; at least half of Suffolk residents in construction jobs don't work in construction jobs in Suffolk. There is a great opportunity to 'repatriate' this workforce; and
- proliferated by short tenure and non-standard employment including part-time and flexible work; and work without a permanent site/location.

**4.5.33.** Experience at Sizewell B, as reported by Oxford Brookes University in their report on the local socio-economic impacts of the Sizewell B power station construction (Ref. 4.26) was that:

- around 20% of locally recruited employees had previously been unemployed or economically inactive and around 30% recruited at peak had come from other local employers; and
- less than 10% of companies thought the power station made it more difficult to retain or recruit replacement staff.

**4.5.34.** If similar proportions occurred at the peak of Sizewell C, around 600 workers would be drawn from existing firms; that is approximately 4% of the construction workforce in Suffolk.

**4.5.35.** The duration of the construction phase is also significant. Whilst its impact is temporary, it is relatively long-term for a construction project, notably longer than the average job tenure in the UK. It does not seem likely that a worker who gave up a permanent job to move to a temporary construction job at Sizewell C would be disadvantaged. They would do so voluntarily and the training and work experience received would give them the opportunity to move onto other roles within the project, or onto other projects. Sizewell C would also stand to benefit from recycling workers into different roles on the project over that period due to lower costs for re-vetting and training.

**4.5.36.** Whilst there is no single data source for average job tenure, a number of UK-based studies conducted based on the Labour Force Survey and the Organisation for Economic Co-operation and Development produces an annual dataset that suggests 16.6% of workers change job every year, and 45.6% change job every 5 years (Ref. 4.27). Average tenure is particularly short in construction given the transient and mobile nature of projects and the workers they employ. A survey by Construction Skills (Ref. 4.28) identified that around 37% of workers expect to be working on a site for more than six months and 20% expect to be on a site for over a year.

**4.5.37.** Sizewell C's construction period is likely to last in the region of ten years. During this time, based on average employment tenures set out above, 65% of people could change jobs at least once, given the nature of job tenures in the UK across all sectors. Most construction projects in the UK and the East of England are relatively short-term in nature, with a constant churn of jobs and skilled workers operating in many different locations. Sizewell C would be fairly unusual, as it is a longer term project with a very wide range of skills required over different stages of the build.

**4.5.38.** Phasing of jobs provides Tier 1 contractors with the opportunity to increase local workforce proportions in higher skilled roles in the later stages of the project by recruiting local people in the earlier stages for lower skilled jobs and helping them to develop their skills and move between contractors and different types of contract throughout the construction period. This approach has been a successful feature of large scale construction projects and depends on a concerted effort at the early stages to produce high quality skills information, and tailored programmes to address local needs.

**4.5.39.** Labour market churn is generally good for people's skills development. New job creation linked to sustainable career paths such as civil construction and nuclear skills will be beneficial in general given the amount of large infrastructure construction planned for the UK.

**4.5.40.** Overall, the above review of labour market churn and flexibility results in the following conclusions:

- Labour markets are flexible and dynamic and are therefore able to cope with significant amounts of churn.
- Employment does not always draw on the existing workforce. Moves into jobs from unemployment and economic inactivity have a significant bearing on recruitment and this can be enhanced.
- As more jobs are created, there are more people to fill them (i.e. economic inactivity falls), and there is always significant movement between inactivity and jobs and between formal unemployment and jobs, indicating that many of those who are workless have the skills necessary to fill vacancies.
- Any economic downturn would increase the amount of "spare" labour (which is near record lows).
- There is always a pool of labour that can enter the employment market at all levels, and focusing on these groups helps to meet government objectives for employment.
- This is partly organic but needs some interventions. We are working with partners in Suffolk and the East of England to ensure that local people benefit from sustainable employment and skills gains.
- Displacement, while a potential concern for employers, enables growth in skills and career progression.

**4.5.41.** While, as set out above, the construction sector and the 'latent' labour supply is highly flexible and responsive, we are primarily concerned with effects on other sectors which may experience displacement effects such as public (e.g. social care) and emergency services.

**4.5.42.** EDF Energy is working with these service providers to identify the potential for these issues based on experience at Hinkley Point C, training and recruitment needs of these sectors, and potential changes in national and local funding. Where significant effects are predicted, EDF Energy would work with these services to provide resilience to avoid the effects e.g. through funding of training or recruitment.

**4.5.43.** EDF Energy is also keen to ensure that employees within local firms gain skills, and the firms themselves gain competencies to enable them to win contracts on the project and across other construction and energy projects in the East of England and nationally. This will enable local firms to build resilience, gain skills and retain staff while also benefitting the local economic supply chain footprint of the project. Measures to support this are set out below.

### c) Employment, skills and education strategy

**4.5.44.** The East of England and Suffolk, in particular, is an innovative and progressive region that is focusing its priorities on social mobility, as well as economic development opportunities offered by energy and infrastructure development. The area has significant economic strengths but also exhibits inequalities relating to social mobility, deprivation and the supply of skilled labour. Many of these inequalities are 'hidden' as set out in detailed research by University of Suffolk for the Suffolk Community Foundation (Hidden Needs) (Ref. 4.29).

**4.5.45.** It is therefore important that the Sizewell C employment, skills and education strategy focusses in on these areas and links EDF Energy's interventions to both government and regional policies.

**4.5.46.** Relatively mature strategies and plans are in place for the strategic economic development of the region, and SCC and NALEP are setting themselves ambitious targets to deliver inclusive growth for local residents and businesses. The priorities for the region into which Sizewell C can make a positive contribution include:

- Delivering the New Anglia Youth Pledge – ensuring every young person (aged 16-24) is either in education, offered an apprenticeship, work related training or work within three months of leaving education or becoming unemployed.
- Skills for Growth – working with employers and providers to equip our workforce with the skills required to deliver inclusive growth.
- Inclusive Employment and Social Mobility – more people from all backgrounds including those with complex needs achieving employment and in work progression.

**4.5.47.** The aim of SCC and NALEP is to create a skills and employment system that will meet future economic needs, raising individual achievement and growing talent in priority sectors. Their intent is to achieve these aspirations by placing a greater emphasis on harnessing sector and 'place based' opportunities, to which Sizewell C has the potential to play a significant and leading role.

**4.5.48.** The policy and strategy framework within the region provides an excellent opportunity for EDF Energy to develop specific interventions which would enhance and enrich regional initiatives and create a measurable and demonstrable benefit. Sizewell C would contribute to a greater economic environment, which includes oil, gas, offshore wind, advanced manufacturing and nuclear, including Sizewell B.

**4.5.49.** Collectively these sectors are the focus of the Suffolk Energy Coast and its Delivery Board (SECDB), which is chaired by the UK Government Department for Business, Energy and Industrial Strategy. This existing regional forum, of which we are already members, will help Sizewell C to develop interventions that integrate with the work of other key sectors and government policies, creating the potential for a long-term skills legacy for the region.

**4.5.50.** Our aim is also to ensure that Sizewell C's future interventions map into the Government's own policy framework for skills, which are contained within the Industrial Strategy, most notably:

- developing skills, boosting key skills and ensuring that people have the skills that employers need, both now and in the future;
- creating the right local institutions, creating strong structures and institutions to support people, industry and places to maximise local strengths;
- supporting businesses to start and grow to ensure that business can access support to grow and have the right conditions to invest in the longer term; and
- driving growth across the whole country, building on strengths and addressing factors that prevent areas from reaching their full potential by investment in key infrastructure projects.

**4.5.51.** Taking all of the above into account, the Sizewell C Employment, Skills and Education Strategy will play a key role in:

- mitigating skills capacity and workforce related risks associated with one of the largest construction projects in the UK and Europe;
- supporting the development and integration of similar strategies for projects across the Energy Coast and within the NALEP Sector Skills Plans (Ref. 4.30), with which Sizewell C shares geographical areas of influence, stakeholders, people and businesses; and
- providing a vehicle for the delivery of a series of investments, creating resilient and collaborative relationships with our key stakeholders.

**4.5.52.** Following this Stage 3 consultation, we will continue to develop the strategy in collaboration with key stakeholders to ensure alignment with skills strategies at the regional and national level. Creating social value is at the core of the strategy and will ensure that sustainability and legacy is considered from the start.

**4.5.53.** The strategy takes into account the opportunities presented by the geographic proximity of the Bradwell and Sizewell sites. The home-based worker commuting zones for Sizewell C and Bradwell B would overlap geographically and both interface with many of the same external stakeholders, institutions, influencers, people and businesses.

**4.5.54.** Our approach is to respond to the regional education and skills environment by building on, enhancing and enriching initiatives already in place, which aim to create the skills system that will meet future economic needs, raise individual achievement and aspiration and help people into work.

**4.5.55.** We would also aim to integrate employment, skills and education with the supply chain development activity in order to help jobseekers find roles on our project and to backfill occurrences of displacement within the supply chain. The strategy will be an integral part of the wider Energy Coast strategy and will not work in isolation.

**4.5.56.** Finally, the strategy would also be focused on reducing the overall risk and costs associated with skills challenges and uncertainty in the UK construction workforce. An upturn in the construction and engineering industries, particularly since 2015, is creating significant workforce and skills risks to all major infrastructure projects in the UK. Maximising sustainable opportunities for local people will be a key contributor to minimising workforce risks and future costs to the Sizewell C project.

**4.5.57.** The starting point in delivering employment opportunity for people in Suffolk will be scoping our potential support for the existing strategies and interventions that are designed to maximise employment and apprenticeship opportunities for people in Suffolk and New Anglia. These have been identified as a result of consultation with key sectors by NALEP and SCC.

**4.5.58.** The policy leaders and training providers in the region, through the SECDB, councils and LEP are committed to continuing support for businesses and sectors by having a clear and thorough understanding of their needs and meeting them by aligning public and private sector investment in skills and training. Sizewell C would play a key role in helping local government agencies and bodies to understanding the skills needs of the project and to facilitate and target investment in the areas required to deliver employment growth.

**4.5.59.** A 'conveyor' principal would work with Hinkley Point C being used to attract apprentices from the Sizewell and New Anglia region as part of a coordinated strategy with Suffolk colleges, regional universities and training providers, before Sizewell C is built. Workers from the New Anglia region could then be re-brokered from Hinkley Point C to Sizewell C as Hinkley Point C demobilises.

**4.5.60.** Sizewell C has just launched a recruitment campaign to find its first apprentices in quantity surveying, project controls and civil engineering: the apprentices will study at either the University of the West of England or the University of Exeter and gain work experience at Hinkley Point C. Once they have completed their apprenticeship they will begin work on Sizewell C.

### A plan for education

**4.5.61.** The Sizewell C Employment, Skills and Education Strategy proposes working collaboratively within existing structures of support for education in the region to build a strong network of schools and colleges with which EDF Energy can work.

**4.5.62.** Education interventions will be developed in collaboration with SCC and the NALEP Skills Board, with input from schools. They will be delivered in the context of the current or planned activity in the region and a collaborative approach will be crucial to their success.

**4.5.63.** Where Sizewell B is already engaged with specific schools, such as with Alde Valley Academy in Leiston, we will support and enhance this activity to create a 'joined up' approach to improving the life chances and wellbeing of local young people.

**4.5.64.** Longer-term, we intend to create an environment into which the Sizewell C supply chain, once in place, will be able to deliver their own education interventions.

**4.5.65.** Our educational programme will have a heavy emphasis on apprentice and graduate opportunities being created through the Sizewell C project and supply chain, bridging the gap between school and employment. Activity and interventions will be developed and delivered with the aim of leaving a legacy. The intent is to work across the county and wider region, encouraging collaboration and promoting clear pipelines into employment.

**4.5.66.** We intend to provide support to a programme of training primary school teachers, which will be led by local colleges and rolled out through partner colleges and their feeder schools across the region. This may be delivered through the proposed Institute of Technology Model, which the Suffolk colleges are currently working on, in collaboration with local employers, SCC and NALEP.

**4.5.67.** Resources will be prioritised on providing support to those in education within the recognised areas of social deprivation and social mobility 'cold spots', including rural Leiston, Lowestoft and Ipswich. The aim will be to help, motivate and inspire young people in these areas through partnership with the local education system and to provide opportunities that otherwise might not have been accessible.

**4.5.68.** The region is already very proactive in the development of enhanced Information, Career Advice and Guidance (ICAG) to young people in the region. Their aim is to be 'best in class', through the development of the 'I Can Be A' initiative. Sizewell C could support and utilise this by disseminating information on project opportunities and priming the pipelines for ICAG that already exist.

**4.5.69.** EDF Energy has already been influential in helping to develop a proposal for a new skills model in the East of England based on a network of schools, colleges, higher education and industry partners. This model has the potential to provide a delivery mechanism for key elements of the Sizewell C strategy and to be extended to deliver the National College for Nuclear curriculum in the future. It may also play a role in supporting a future integrated skills strategy with Bradwell B. There is likely to be an upcoming opportunity for EDF Energy to support a future funding bid into Government. If successful, this will create a significant regional resource and skills infrastructure that Sizewell C will be able to 'plug and play' into.

### d) Business and the construction supply chain

### Project value, investment and local benefits

**4.5.70.** At Stage 2, a number of responses were received asking for more information about our proposals to maximise local economic benefits for existing businesses that have the potential to win contracts and work on the project.

**4.5.71.** A significant level of long-term economic benefit is expected as a result of Sizewell C, and in the context of the fleet of planned new nuclear power stations in the UK, there is an opportunity to develop a national specialism in civil construction and nuclear supply chain expertise which might be centred around 'hotspots' of activity where projects such as this are developed.

**4.5.72.** Suffolk and the East of England should particularly benefit in this regard due to the proximity of the proposed Bradwell B power station, which is planned to follow Sizewell C.

**4.5.73.** Suffolk is home to nearly 4,000 businesses in the construction sector (UK Business Counts data) (Ref. 4.31), and the sector has grown by 10% since 2010 and represents 14% of all businesses in the county.

**4.5.74.** At Stage 2, we outlined:

- That the technology suppliers/engineers and equipment and materials contracts would be at the national and international scale and would contribute to national policy ambitions to develop the UK's low carbon manufacturing capacity.
- That through successfully embedding part of the national construction, engineering and nuclear supply chains (the business and services that receive the majority of the spending from these industries in the UK) in the regional economy, the project would contribute to enhanced economic growth, promoting long-term joint working between Hinkley Point C and Sizewell C and positioning the local labour force and businesses as pacesetters in a major growth sector.

**4.5.75.** This resulted in an estimate that the economic benefits of Sizewell C would amount to £100m per year during construction, and £40m per year during the operational phase. This estimate was based on assessment for Hinkley Point C's application for development consent prior to the start of its construction, which in turn was based on experience of Sizewell B.

**4.5.76.** Hinkley Point C has revised its forecast of local economic benefits during the construction phase to £200m per year, a reasonable proportion of which is delivered through the local supply chain. Other benefits come from workers spend locally and investments such as via the community fund.

**4.5.77.** We are working with our Hinkley Point colleagues to understand the extent to which the supply chain in Suffolk and the East of England is likely to be able to secure a similar package of contracts to those secured locally at Hinkley Point C. We are also working with the Chamber of Commerce and other local stakeholders to understand what additional specialisms local and regional businesses may offer which may be helpful to the project.

**4.5.78.** Some contracts/sub-contracts, and particularly smaller packages and non-construction packages (such as professional and design services, business administration, hospitality, catering, security and cleaning) would certainly have a much stronger local and regional element.

### Supply chain engagement strategy

**4.5.79.** A supply chain engagement strategy will form part of the economic strategy submitted with our application for development consent. This will set out the steps Sizewell C has taken to understand the local supply chain and support businesses in being ready to bid for work, and will identify the potential for local economic benefits. This strategy needs to be flexible and responsive, and will change over time to reflect the status of the economy and other variables.

**4.5.80.** It will draw on information from within EDF Energy, best practice from other projects, and be developed in collaboration with national, regional and local partners including CITB, NALEP, SCC and Suffolk Chamber of Commerce, and will set out:

- The context of the wider UK construction supply chain, and supply chain availability and competence in the East of England.
- Information gained from the supply chain at Hinkley Point C including Tier 1 and Tier 2/3 information, and the potential for consortia in construction and non-construction sectors.
- Identification and mapping of the potential of the local supply chain for Sizewell C.
- Measures taken and proposed to support the local supply chain.
- An explanation of contractual mechanisms/limitations to the use of local businesses.
- Expectations including types/value of contracts estimated to be placed locally.
- Measurement (including contribution to overall local economic benefits) and reporting and monitoring mechanisms.

**4.5.81.** EDF Energy has engaged Suffolk Chamber of Commerce to build and operate a supply chain database to enable local companies to register and learn how to be "fit for new nuclear" and over 1,400 companies have currently signed up. The Chamber has also been working closely with counterparts in Somerset to fully understand the size and scale of the opportunity and the types of contracts companies in the East of England supply chain may be able to secure at Sizewell C and Hinkley Point C.

**4.5.82.** Following Stage 3 and into the construction phase, it is anticipated that the Chamber's role would expand to:

- Map Suffolk and regional businesses core capabilities against Sizewell C project requirements.
- Match suppliers with EDF Energy and Tier 1 contractor work package requirements.
- Co-chair and enable the Site Operations and Industrial Partner steering groups that oversee the developing supply chain response.
- Communicate up-to-date project and work package news and information to suppliers registered on this supplier portal.
- Broker relevant business support to help suppliers meet quality and safety standards.

**4.5.83.** We also intend to appoint a local supply chain officer both to support the Chamber's work, meet with members of the local supply chain and provide briefings to interested companies on the various contracts that would be coming up for tender, initially in the early stages of construction.

**4.5.84.** Briefings would commence in the run up to the application for development consent and would also provide advice on matters such as bidding into the Tier 1 contractors for sub-contracts and legal/accounting advice for structuring of contracts across multiple providers, such as a collection of food producers coming together for the provision of catering services as has been the case with Somerset Larder (https://www.hinkleysupplychain.co.uk/somerset-larder).

### Skills and the supply chain

**4.5.85.** There is clearly a high level of sector based supply chain and skills based activity focussed on energy and infrastructure development that is taking place in the East of England. This is welcome and evident through NALEPs mature and advanced Sector Skills Plans, their associated forums and a very active Chamber. Forums and initiatives such as the SECDB, Building Growth and the proposed East Institute of Technology all provide sustainable opportunities for Sizewell C to partner in creating improvements to the skills base of Suffolk and the New Anglia region.

**4.5.86.** The skills strategy for the local supply chain will not be focused purely upstream to Sizewell C but the broader supply chain clusters within the region that would potentially be impacted by backfill and displacement issues as result of the Sizewell C build. This approach will help EDF Energy to focus on creating a long-term legacy for the region, in partnership with other key sectors and the LEP Sector Skills Plans. Through joining with broader, sector based strategies Sizewell C would leave the region in a stronger position to provide energy, construction, engineering and supporting skills and re-export these to other projects and regions.

**4.5.87.** One of the key lessons from Hinkley Point C has been the success of the Local Business Engagement Strategy in helping to secure over £400 million of contracts to firms in the south-west. EDF Energy will develop a programme of skills support for businesses that engage with the Sizewell C procurement process and ultimately win work on the Sizewell C project. This activity will be carried out with the full collaboration of the Suffolk Chamber of Commerce and the NALEP and is anticipated to start in conjunction with the start of this Stage 3 consultation process.

## e) The tourist economy

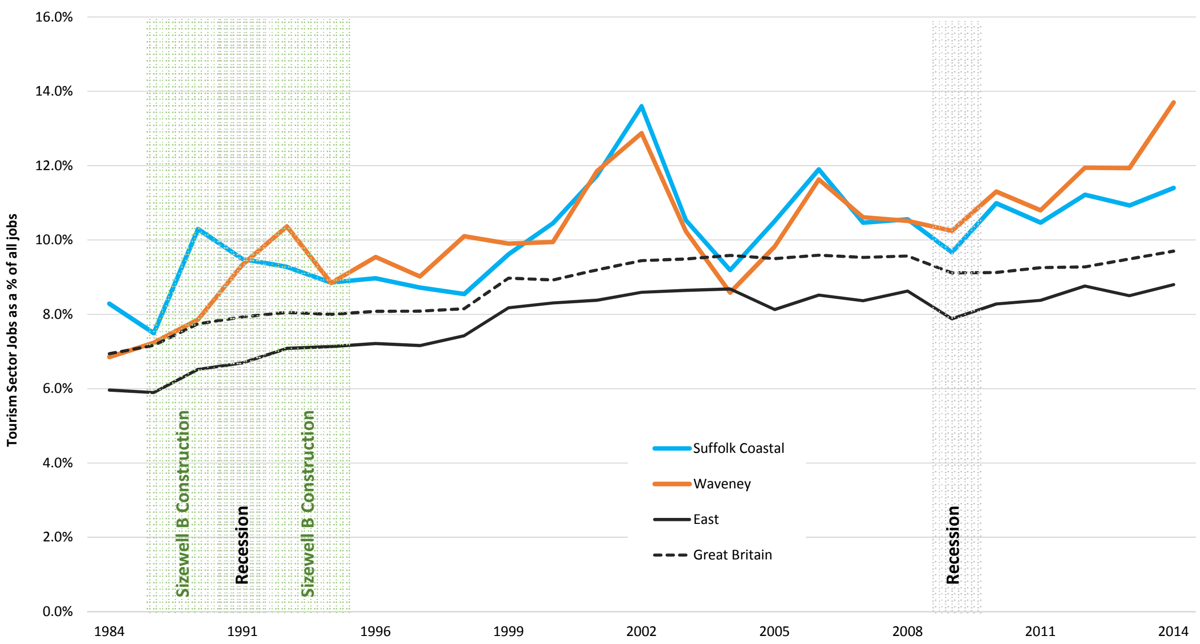
### Scale and characteristics of the tourist economy

**4.5.88.** The overarching NPS EN-1 states that the construction, operation and decommissioning of energy infrastructure may have socio-economic impacts and that: *"where the project is likely to have socio-economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts as part of the ES…which may include effects on tourism"* (paragraph 5.12.2-3) (Ref. 4.32).

**4.5.89.** We have been working with stakeholders including the local authorities, Suffolk Coast DMO, Visit Suffolk, Visit East Anglia, the AONB and NALEP to:

- define the value and volume of the tourist economy in Suffolk and the Suffolk Coast, including the employment and businesses it supports (tourism is notoriously difficult to define and is inherently flexible, being influenced by weather, economic climate, seasonality and many other variables);
- understand the potential effects on tourism related to the project; and
- start to identify potential opportunities and mitigation measures the project may bring to the area's tourist economy.

**Figure 4.6** 'Tourism Sector Jobs' jobs as a proportion of all jobs 1984-2014 in the context of periods of recession and the duration and peak of Sizewell B construction




**4.5.90.** An Economic Impact Report has been produced for the DMO for the Suffolk Coast and Heaths AONB (Destination Research (2018) Economic Impact of Tourism 2017 Results) (Ref. 4.33). Public datasets (such as the Business Register and Employee Survey) can also be used to estimate the number of jobs in 'tourism' sectors (defined based on the Standard Industrial Classification and the ONS report *"Measuring Tourism Locally Guidance Note 1: Definitions of Tourism (version 2), 2012"* (Ref. 4.34) which identifies 4-digit Standard Industrial Classification (SIC) codes for tourist sectors). On this basis, Suffolk (County) has around 30,100 tourism-sector jobs (full and part time), making up 9.6% of all jobs in Suffolk. Suffolk's tourism sector is dominated by accommodation and food and drink sectors (76% of all tourism jobs in Suffolk compared to 78% in Great Britain as a whole). Suffolk Coastal has a particularly strong food and drink sector, which supports around 60% of all tourist sector jobs in the district.

**4.5.91.** It is possible to use historic datasets from the Business Register and Employment Survey, Annual Business Inquiry, Annual Employment Survey and Census of Employment to broadly identify the number of jobs, and proportion of the whole economy in SIC sectors related to tourism. Based on this broad definition of tourism employment, **Figure 4.6** shows the absolute number of jobs in these combined sectors in Suffolk Coastal, Mid-Suffolk, Waveney, East of England and Great Britain with the Sizewell B construction period and peak, and national negative growth periods (recession) highlighted.

**4.5.92.** Sizewell B construction took place between 1987 and 1995. **Figure 4.6** highlights that there was only a marginal change in employment in the tourism economy relative to the total number of jobs in the local area during that period, and fluctuations are in line with average annual variations seen throughout the time series. In real terms the number of jobs in Suffolk Coastal increased significantly over this time, as did tourism related jobs.

**4.5.93.** The tourism market in the UK is seasonal, with peak and off-peak periods. In Suffolk, anecdotal reports from business groups and tourism bodies indicate that while there is still a summer peak, the 'off shoulder' period has shortened with high levels of occupancy from around Easter through the Summer to September. Data to support this view is primarily gained from changes in accommodation occupancy rates recorded monthly or unemployment by sought occupation throughout the year. Both suggest that in Suffolk Coastal and Waveney in particular, the sector has a great degree of flex and variability across the year and between years.

### Establishing potential effects on tourism and avoiding them

**4.5.94.** At Stage 2, stakeholders raised concerns about construction traffic and increased journey times for visitors; environmental effects and perceptions of the area (particularly the coast and AONB), deterring visitors now and in the future. Stakeholders generally supported plans for a visitor centre, and a collaborative, impartial survey of visitors and potential visitors to understand potential effects of the project. Some stakeholders also felt that the visual impact of Sizewell C might deter visitors during the operation of the power station.

**4.5.95.** We are working with tourism stakeholders to identify the extent to which Sizewell C could have an impact on the perceived attractiveness of the area for tourists, as well as the opportunities the project could bring. We are committed to working with stakeholders to ensure that the current perception of the Suffolk Coast as a tourist destination is not significantly impacted by the project.

**4.5.96.** As part of this work, EDF Energy's corporate research team has commissioned market research from its approved panel of accredited, independent suppliers, and asked them to help shape the brief and scope for a visitor survey, taking into account feedback from the local authorities, Visit Suffolk and the DMO.

**4.5.97.** This research commenced in Autumn 2018 with a qualitative survey designed to test and find out more about potential issues, for example traffic concerns, environmental disturbance and the extent to which perceptions of the project may deter visitors.

**4.5.98.** Additional survey work, including a quantitative tourism survey will be undertaken early in 2019. This will allow EDF Energy to gain a fuller understanding of the issues and to help direct monitoring and mitigation towards the effects or locations considered most sensitive.

**4.5.99.** Prior to submission of the application for development consent, we will undertake further direct engagement with local businesses with the potential to experience effects of the project, including the Royal Society for the Protection of Birds (RSPB) (Minsmere), National Trust (Dunwich Heath) and Pro Corda (Leiston Abbey), and seek to agree measures to avoid significant effects, where predicted.

**4.5.100.** Environmental impacts, including disturbance due to traffic, noise, light, visual and air quality effects have the potential to indirectly affect tourism. These are required by law to be assessed and significant effects avoided or mitigated to a level that is not considered significant. It is noted that the combination of environmental effects may affect amenity in some locations, and this will be assessed through a non-additive cumulative assessment at the local level.

**4.5.101.** It is likely that any potential significant adverse effects highlighted by the tourism assessment, and through engagement with service providers and local businesses, would be mitigated through a tourism fund. While it is premature to set the scale of this fund, experience from projects elsewhere suggests that such a fund could be successful in delivering, for example: marketing and promotion activities for the Suffolk Coast and specific attractions and events within it, which could demonstrate a strong return on investment; support for local projects including capital and revenue investment; provision for future visitor surveys; support for existing tourist information centres; responses to effects on particularly sensitive attractions/locations within the AONB; and development or support for a tourism strategy/action plan.

### Visitor centre

**4.5.102.** At Stage 2, we presented feedback gained from the Stage 1 consultation on three options for a visitor centre:

- Option 1: Lover's Lane;
- Option 2: Sizewell Beach; and
- Option 3: Goose Hill

**4.5.103.** Since then, we have given further consideration to the potential for a shared visitor centre for Sizewell B and Sizewell C.

**4.5.104.** In developing our preferred approach for a visitor centre in terms of its location, function and operation we have considered previous consultation feedback and in particular:

- any potential landscape and visual impacts on the AONB;
- any potential impacts on adjacent residential areas and community facilities, including the effect of traffic generation;
- the need to relocate the existing the Sizewell B visitor centre, training facility and car parking to free up land for the Sizewell C proposals; and
- opportunities for the centre to be used effectively across both stations, for the energy sector generally, and for promotion of local interest.

**4.5.105.** EDF Energy proposes to build a new facility that will replace the current Sizewell B visitor centre and create a joint Sizewell B and C visitor centre in Coronation Wood.

**4.5.106.** The visitor centre would be accessible by the general public with exhibition space and modern educational elements providing capacity for school groups. Its role would be to provide information including on the process for generating electricity, the benefits of low-carbon energy and Sizewell B and C's role in the future of nuclear power in the UK.

## 4.6. Summary of Effects and Mitigation

**4.6.1. Table 4.9** below summarises the potential effects of the project – both positive and negative and approach to mitigation.

**Table 4.9** Potential effects of the project and approach to mitigation

| Potential effects | Mitigation/enhancement measures embedded in project | Additional mitigation |
|---|---|---|
| Potential adverse effects on accommodation market due to NHB workers seeking accommodation close to site (maximum 60-minute commute). | • 2,400 bed accommodation campus on main development site.<br>• 400 pitch caravan site (capacity 600 beds) on LEEIE.<br>• Potential additional accommodation under 7,900 'sensitivity text'. | • Accommodation management allowing local accommodation providers and individuals to register rooms available.<br>• Housing fund. |
| Potential adverse effects on capacity of community facilities, public services, including emergency services, due to demand from the project, workers and families. | • Comprehensive occupational health service on-site, including emergency responders.<br>• Embedded fire and rescue capability and community beat team. | • Section 106 contributions to support emergency services, health, social care and education.<br>• Sports pitches in Leiston with shared community access, to be left as a legacy.<br>• Community fund. |
| Potential adverse effects on tourism due to construction disturbance/traffic/potential beneficial effects of workers using tourist accommodation off-peak. | • Range of measures to improve design, reduce noise, visual and traffic impacts as set out in other chapters.<br>• Accommodation management to allow providers to register accommodation. | • Tourism fund. |
| Potential beneficial effects on the local and regional economy due to employment and supply chain opportunities, upskilling, and worker spend. | • Skills and supply chain interventions, well integrated into regional economy to provide sustainable opportunities and avoid 'boom and bust'.<br>• Jobs brokerage and apprenticeships.<br>• Includes work already underway with schools, colleges and the Chamber of Commerce plus provision of local supply chain manager post Stage 3. | • Section 106 contributions to support initiatives proposed. |

## 4.7. Next Steps

**4.7.1.** Following this stage of consultation, we will continue to work with stakeholders to develop a common understanding of the baseline for the assessment of likely significant adverse social and economic effects, ahead of the application for development consent.

**4.7.2.** In recognition that the socio-economic assessment approach is iterative, and that mitigation and enhancement strategies are most effective when they have collaborative support of both the applicant and local stakeholders, EDF Energy will continue to work with the local authorities, emergency services, tourism and health bodies and others, while also taking into account responses to this consultation, to develop the mitigation and enhancement strategies set out in this chapter, ensuring they are implementable and responsive, and are effective in avoiding significant adverse effects where at all possible.

# 5. Transport Strategy

## 5.1. Introduction

**5.1.1.** This chapter sets out EDF Energy's transport strategy for the construction phase of the project and the basis for the associated transport proposals. The proposals have evolved following consideration of the responses from the Stage 2 consultation and also the experience gained to date at Hinkley Point C with regard to transport issues. This chapter describes proposals to manage the daily movement of the construction workforce to and from the main development site, how the freight requirements of the construction phase would be managed, and how the various measures proposed would help to limit traffic impacts on the local road network.

**5.1.2.** At the Stage 2 consultation, EDF Energy explained the forecast transport implications of the construction phase and identified several potential measures that could help to mitigate the impacts of moving the workforce and freight to and from the main development site. The transport measures proposed at Stage 2 were:

- two forms of jetty for unloading and loading bulk materials and Abnormal Indivisible Loads (AILs);
- early years use of Sizewell Halt;
- alternative rail solutions:
  - the green rail route to deliver freight directly into the main development site; or
  - a new railhead on land east of Eastlands Industrial Estate (LEEIE) from which freight would be moved by Heavy Goods Vehicle (HGV) via Lover's Lane to the main construction site;
- management of road freight traffic using an Automatic Number Plate Recognition (ANPR) camera based system without a freight management facility (FMF) (which had been proposed at Stage 1 consultation);
- two park and ride sites to intercept construction workers and transport them to site by bus – the two proposed sites were adjacent to the A12 near Darsham railway station to the north and near Wickham Market to the south;
- an A12/B1122 junction improvement scheme to increase junction capacity – two options were presented:
  - a traffic signal controlled junction at the location of the existing junction; or
  - a new roundabout located some 100m north of the existing junction;
- highway works on the A12 at Farnham – four options were presented ranging from no improvements through to a new bypass of both Farnham and Stratford St Andrew; and
- use of the B1122 as the main route to the construction site for workers, buses and goods vehicles – this was accompanied by B1122 works at the Mill Street junction and pedestrian improvements, including new crossings, in Theberton.

**5.1.3.** Details of the main transport issues raised during the Stage 2 consultation in response to these proposals and how these are being addressed are set out in this chapter. As detailed further in this chapter, the consultation responses have led us to develop two alternative strategies that are presented in this Stage 3 consultation:

- **a rail-led strategy** – up to two freight trains per day either to Sizewell Halt or a new rail siding adjacent to the existing branch line on the LEEIE in the early years of construction and the green rail route providing direct access to the main construction area for up to five freight trains per day at peak construction (necessitating refurbishment of the branch line and infrastructure works to improve the East Suffolk line). The Stage 2 proposals for highway improvements to the B1122 at Theberton are (except at Mill Street) replaced in this Stage 3 consultation with a Theberton bypass; or
- **a road-led strategy** – under this strategy there would be up to two freight trains per day to Sizewell Halt or a new rail siding adjacent to the existing branch line on the LEEIE throughout the construction period, with the remainder of freight transported by road. The Stage 2 proposals for highway improvements to the B1122 around Theberton are entirely replaced in this Stage 3 consultation with a new Sizewell link road from the A12 north of Saxmundham to the B1122 east of Theberton to relieve the B1122, Middleton Moor and Theberton of Sizewell traffic. This strategy also includes a FMF, near Ipswich, which would serve as a holding area for HGVs, regulating the timing and flow of vehicles to the Sizewell C main development site.

**5.1.4.** EDF Energy has not identified either the rail-led or road-led strategy as preferred at this stage and is seeking views on both options in this consultation. The work undertaken by Network Rail to date has focused on high level scheme feasibility, from which we anticipate that the rail-led strategy is likely to involve greater delivery risk than implementation of the road-led strategy. The rail-led strategy in particular involves significantly greater physical works to rail infrastructure and ongoing feasibility work requires additional physical surveys, site assessments and detailed design work to be undertaken. However, we do not yet know whether the necessary rail improvements required in the rail-led strategy are fully feasible or could be delivered on time. Therefore, in addition to considering the Stage 3 consultation responses, EDF Energy will need to further assess these risks and any potential implications on programme with Network Rail's assistance, as part of its decision on which strategy to pursue in the application for development consent.

**5.1.5.** Both strategies include the A12 improvement scheme, i.e. the two village bypass relieving Farnham and Stratford St Andrew of Sizewell traffic, the park and ride sites at Darsham and Wickham Market and other highway improvements. All of the transport mitigation measures are described in **Chapters 8–17** inclusive of this volume and preliminary environmental information is in **Volume 2**.

**5.1.6.** A marine-led strategy has been considered in which a significant proportion of construction materials would be delivered by sea. However, following further study, EDF Energy has concluded that this is not feasible due to the impacts on marine ecology of constructing the jetty. Measures to reduce this impact would significantly increase the overall time taken to construct the power station, would not fully address those impacts and would not meet the "urgent" need for new nuclear power identified by Government in the National Policy Statement (NPS) (Ref. 5.1, Ref. 5.2). This chapter provides further information. Although this scenario is no longer being progressed and a jetty is not proposed, a Beach Landing Facility (BLF) is proposed for both strategies. This would be required for the delivery of AILs throughout the construction phase under both strategies and during the operational phase to remove heavy and oversized loads from the road network.

**5.1.7.** The traffic modelling that has been conducted to assess the impacts of the Sizewell C construction phase is presented in Chapter 6 of this volume.

**5.1.8.** These proposals for associated development form an essential part of the transport strategy for the construction phase. While the major proposed transport related associated developments are briefly described in this chapter, **Chapters 8–17** of this volume provide further detail in relation to the off-site associated developments. This chapter is structured as follows:

- **section 5.2** provides an overview of feedback on the transport strategy from Stage 2 consultation;
- **section 5.3** considers approaches to managing and reducing traffic associated with the movement of the construction workforce;
- **section 5.4** describes the approach to managing material and freight movements by rail and road, as well as information on EDF Energy's material quantities estimates;
- **section 5.5** provides a description and justification of the differences in elements of EDF Energy's proposals under the rail-led and road-led strategies;
- **section 5.6** describes the measures which would be put in place to manage, monitor and control HGV movements;
- **section 5.7** summarises the impacts of Sizewell C construction on the existing road network and proposed mitigation;
- **section 5.8** describes the issues around the choice between rail-led and road-led strategies, including the pros and cons of each; and
- **section 5.9** sets out the next steps that will inform the development of the transport strategy and related assessments prior to submission of the application for development consent.

## 5.2. Overview of feedback from the Stage 2 consultation

**5.2.1.** At Stage 2, there was support for the high level transport strategy including the use of park and ride to transport workers and the use of rail and sea to transport freight. Many of the issues that were raised are addressed in the relevant chapters of this volume but are summarised here to provide an overview of how the Stage 2 responses have helped shape the Stage 3 proposals.

### a) Freight

**5.2.2.** There were many comments at Stage 2 about how freight should be moved to and from the construction site. The key points are described here to provide context for the Stage 3 transport proposals related to freight movements.

**5.2.3.** The modal split, i.e. the proportion of freight moved by rail, sea and road transport, was often raised. Some consultees, for example Aldeburgh Town Council, favoured the use of marine access but many others questioned the feasibility and environmental impacts associated with this mode.

**5.2.4.** The use of a wide range of modes, i.e. rail, sea and road, was supported by some consultees including Suffolk Coastal District Council (SCDC) and Suffolk County Council (SCC). Others, including Saxmundham Town Council and Therese Coffey MP, encouraged EDF Energy to prioritise rail and sea movements over road, indicating that it might reduce the need for new road building in the area.

**5.2.5.** Suffolk Chamber of Commerce supported EDF Energy's proposal to transport at least 60% (by weight) of freight by rail or sea. Others challenged the basis of the 60% figure and others felt that a higher figure, such as 80%, would be more appropriate.

**5.2.6.** In addition to raising issues about bringing in new materials for construction, some consultees such as Little Glemham Parish Council and Sizewell Parishes Liaison Group wanted to see spoil removed from the site by rail or by sea, possibly to Wallasea Island.

**5.2.7.** Some consultees recognised that both rail and sea modes could bring transport efficiencies. However, they highlighted the potential environmental impacts and were concerned that a focus on these modes could lead to "*the worst of all worlds for the environment*".

**5.2.8.** There was more consensus around the use of rail. About four times as many consultees supported the creation of a private siding into the construction site from the branch railway line (i.e. the green rail route) as supported a new rail terminal on the LEEIE in Leiston. Those supporting the green rail route included the parish councils at Leiston, Middleton-cum-Fordley, Saxmundham, Woodbridge, Aldeburgh, Sizewell and Melton. The emergency services also supported the green rail route.

**5.2.9.** Historic England expressed concern about the green rail route due to its impact on the setting of Leiston Abbey. SCDC and SCC questioned how public rights of way might be accommodated. Some local consultees were apprehensive about potential disruption to their travel patterns caused by ten train movements spread throughout the day. They were concerned about potential congestion and delays at the B1122 level crossing. Further information is provided in **Chapter 8** of this volume.

**5.2.10.** Several consultees, in particular Summerhill School, expressed a view that Buckleswood Road should not be stopped up while the green rail route was in use. They said that such a measure would put pressure on Abbey Lane to carry more traffic, restrict access for local farmers and make emergency access more difficult. The consultees recognised that the green rail route, and the associated impacts, are temporary and felt that EDF Energy should propose alternative solutions. Consequently, a level crossing at Buckleswood Road is proposed as part of this Stage 3 consultation but the stopping up proposal is retained as an alternative potential solution.

**5.2.11.** There was widespread support for the use of ANPR cameras to manage the routes used by HGVs travelling to and from the main development site. Consultees were not convinced about the use of an electronic HGV control system, fearing malfunctions and constraints from an unreliable broadband and mobile phone signal in East Suffolk. Several respondents, including SCDC and SCC, requested that EDF Energy reintroduce a FMF along the A14, as had been included in the Stage 1 consultation proposals. The road-led strategy presented in this Stage 3 consultation reintroduces a FMF adjacent to the A14.

### b) Other consultation responses

**5.2.12.** Some consultees, e.g. Snape Parish Council, sought more detail on the traffic modelling process. This has been a complex piece of work as described in **Chapter 6** of this volume. The work has utilised industry-standard procedures that are common to the construction of any traffic model. The process has been discussed extensively with SCC who have reviewed the work, raised any concerns and worked with EDF Energy to produce a traffic model that can reliably predict the Sizewell C traffic impacts. We will publish a transport assessment with our application for development consent that will comprehensively set out the modelling work undertaken.

**5.2.13.** Predicting impacts in both the early years (while mitigation is under construction) and the peak construction year, enables us to identify the timing of necessary highway improvements. Some schemes would be needed to mitigate the early years impacts, while others would not be needed until peak construction. The proposed timing of each improvement is set out in the relevant chapter within this volume.

**5.2.14.** The parish councils at Yoxford, Theberton and Middleton-cum-Fordley, together with Therberton and Eastbridge Action Group on Sizewell, were strongly opposed to using the B1122 as the main route for construction traffic. While the B1122 is certainly not close to its traffic carrying capacity, EDF Energy has recognised that the environmental and community impacts from, in particular, noise and severance from the Sizewell C traffic do require mitigation.

**5.2.15.** In the rail-led strategy, all previous mitigation measures proposed are retained except in Theberton where, in response to Stage 2 feedback, EDF Energy now proposes the small-scale improvement at the B1122/Mill Street junction and construction of a Theberton bypass instead of a series of small-scale improvements in the village. The bypass would relieve the village of all Sizewell C traffic and existing through-traffic if, as EDF Energy propose, it is open to general traffic as well as Sizewell C construction traffic. This would ensure that the traffic and environmental impacts in Theberton would be very substantially reduced. The Theberton bypass proposal is described in **Chapter 11** of this volume.

**5.2.16.** In the road-led strategy, where the traffic impacts are higher as more freight is carried by road, the Sizewell link road is proposed. This wholly new route, which is described in **Chapter 10** of this volume, starts at the A12 north of Saxmundham and ends close to the main site access on the B1122. It would relieve Theberton and Middleton Moor of through-traffic. It also relieves Yoxford of Sizewell C traffic travelling to and from the south. Traffic to and from the north would continue to use the A12/B1122 roundabout in Yoxford described at Stage 2, but this traffic would not impinge on the village itself.

**5.2.17.** There was significant support at Stage 2 for the A12 Farnham and Stratford St Andrew bypass, so this scheme is retained in this Stage 3 consultation. Further design development has enabled the environmental impact of the new route to be limited. The scheme is described in **Chapter 12** of this volume. That chapter also sets out why EDF Energy is not proposing the four village bypass in either the rail-led or road-led strategies but is working with SCC to support their aspiration for such a scheme, which is now known as the Suffolk Energy Gateway.

**5.2.18.** There were mixed views on the park and ride proposals at Stage 2. Therese Coffey MP and many others supported the Darsham and Wickham Market sites, while a sizeable minority were opposed to one or both sites.

**5.2.19.** At Wickham Market, the primary concerns of the parish councils were local traffic impacts. EDF Energy recognises these issues and in this Stage 3 consultation proposes two options to deal with the impacts on the B1078 between Border Cot Lane and the River Deben bridge, as described in **Chapter 14** of this volume. One option would provide an alternative route for Sizewell C traffic via an improved Valley Road and Easton Road north of Wickham Market. The alternative would propose to temporarily relocate the on-street parking on this length of the B1078 to a nearby off-site parking area.

**5.2.20.** Many respondents expressed concerns about the safety of the A12/B1078 junction. To minimise this risk, EDF Energy proposes a scheme of improved signage and road markings where the A12 reduces to a single carriageway north of the park and ride site. EDF Energy would also ask SCC to extend the existing B1078 30 miles per hour (mph) speed limit to include the bridge over the A12.

**5.2.21.** At Darsham, some consultees, including SCC and SCDC, recognised the potential legacy benefits of retaining some of the parking for the railway station after Sizewell C construction was complete. We will explore this further with the local authorities. Other consultees were concerned about Sizewell C traffic disrupting access to the railway station, while Westleton Parish Council and others were concerned about the proposed park and ride access. In response to these concerns, EDF Energy has moved the access to a new location north of Willow Marsh Lane. The access would now be a roundabout as requested by Darsham Parish Council and is described in **Chapter 13** of this volume.

**5.2.22.** The A12/B1122 roundabout proposed at Yoxford in Stage 2 gained much more support than the signalised junction option, and so is retained in the Stage 3 proposals. While some consultees, including Sizewell Parishes Liaison Group, were worried about congestion at the roundabout, our analysis indicates that the roundabout performs well and shows that retaining the existing A12/B1122 junction would not be feasible. The analysis shows that there are short-term queues while a vehicle waits to turn right into the A1120 but these would quickly clear and are not related to the location, design or performance of the roundabout. The proposed scheme is largely unchanged from Stage 2 consultation and is described in **Chapter 16** of this volume.

**5.2.23.** A variety of consultees including Peasenhall, Saxmundham and Hacheston Parish Councils, raised concerns about traffic impacts at a series of other junctions. EDF Energy has analysed the outputs from the traffic modelling work and reviewed the historic accident data to establish which junctions require mitigation because of Sizewell C traffic increases. The proposed improvements, all of which are additional mitigation to that proposed at Stage 2 consultation, are described in **Chapter 17** of this volume. They are:

- **A140/B1078 west of Coddenham** – this junction has an existing accident rate higher than would be expected given the current traffic volume, and so minor safety improvements are proposed;
- **B1078/B1079 east of Easton and Otley College** – this junction has an existing accident rate higher than expected, and so safety improvements west of the junction and improved visibility within existing highway land are proposed;

- **A12/B1119 Saxmundham** – this junction has an existing accident rate higher than expected, and so safety improvements are proposed;
- **A1094/B1069 south of Knodishall** – this junction has an existing accident rate higher than expected, and so speed limit reduction and improved junction visibility is proposed;
- **A12/A1094 Friday Street north of Farnham** – EDF Energy would construct the proposed roundabout in advance of the rest of the two village bypass to address an existing accident rate higher than expected and provide additional junction capacity during the early years of construction before the park and ride sites are operational;
- **A12/A144 Bramfield** – traffic currently queues when turning right from A144 to A12 south, and so junction improvements are proposed to increase capacity and accommodate additional Sizewell C traffic;
- **Wickham Market diversion route** – improvements to an alternative route from the B1078 to the southern park and ride site via Valley Road, Easton Road and the B1116; and
- **B1122/Mill Street** – proposals to lower the existing B1122 road level at the junction to increase visibility.

**5.2.24.** No other junctions have been identified where either capacity or safety impacts resulting from Sizewell C traffic volumes would necessitate highway improvements.

**5.2.25.** Speeding was raised by several consultees, most notably at Westleton and Snape, both of which are locations that would experience increases in daily traffic flow during both peak construction and early years phases of the Sizewell C construction. These villages and Blythburgh already experience traffic increases during Sizewell B outages, which are now, at the request of SCC, modelled in the Reference Case (before Sizewell C), rail-led and road-led strategies. As a result of these impacts, we propose to work closely with the Parish Councils to determine how best to tackle these impacts.

**5.2.26.** Several consultees, including the Suffolk Preservation Society, Sizewell Liaison Group and TEAGS, comment on the lack of transport infrastructure legacy in the proposals. The Overarching National Policy Statement for Energy (NPS EN-1) (Ref. 5.1) makes no mention of this as a requirement, simply noting that applicants must mitigate their traffic impacts. Notwithstanding this, several of the schemes that EDF Energy propose would be permanent, leaving behind improved transport infrastructure through the two village bypass, Theberton bypass or Sizewell link road, improvements that increase capacity on the East Suffolk line and several junction improvements as described above.

### c) Revised proposals for Stage 3

**5.2.27.** EDF Energy has considered the consultation responses from Stage 2, along with the experience gained to date at Hinkley Point C with regard to transport issues. This has fed into the development of two alternative freight management strategies that are presented in this Stage 3 consultation: a rail-led and a road-led strategy, described in the introduction to this chapter.

**5.2.28.** Both strategies include the A12 improvement scheme, i.e. the two village bypass relieving Farnham and Stratford St Andrew of Sizewell traffic, the park and ride sites at Darsham and Wickham Market and other highway improvements. All the transport mitigation measures are described in detail in the other chapters of this volume.

**5.2.29.** The transport strategy proposals that were presented at Stage 2 consultation are compared with those now proposed in this Stage 3 consultation in the rail-led and road-led strategies in **Table 5.1**:

**5.2.30.** EDF Energy anticipates that construction of the following highway works would start at the beginning of the early years:

- Yoxford roundabout;
- Two village bypass;
- Theberton bypass (if rail-led strategy adopted); and
- Sizewell link road (if road-led strategy adopted).

**5.2.31.** Later starts are anticipated for the two park and ride sites to reduce the early years construction impacts. This is possible because the early years workforce could be accommodated at the on-site car park. The other highway improvements could also be started later to reduce construction traffic impacts in the early years.

## 5.3. Transport strategy for the construction workforce

### a) Overall strategy

**5.3.1.** The peak construction workforce for Sizewell C is estimated to be 5,600 workers and a further 500 associated development operational workers. However, as explained in **Chapter 1** of this volume, we have considered what the effects of the project might be if the workforce figures were higher. To do this from a transport perspective, we have adopted a higher workforce figure in our transport modelling work. The modelling is based, therefore, on a larger workforce of 7,900 construction workers and 600 associated development operational workers.

**5.3.2.** At the Stage 2 consultation, EDF Energy proposed a number of measures to reduce the daily traffic associated with the movement of the construction workforce to and from the construction site during the peak years of construction. These included:

- an accommodation campus within the main development site, enabling these workers to walk to work thus reducing the number of workforce journeys through towns and villages;
- caravans on LEEIE – recognising there would be no campus accommodation available in the early stages of construction. This facility would continue to be offered throughout the construction phase, providing an alternative for workers not wishing to use the site accommodation campus or other existing local accommodation;
- two park and ride developments, one at Darsham for construction workers approaching Sizewell from the north on the A12 and one at Wickham Market for those approaching from the south on the A12;
- direct bus services operating from Ipswich and Lowestoft; and
- bus pick up services for workers using rail services on the East Suffolk line.

**5.3.3.** Aside from the concerns highlighted in **section 5.2** regarding the park and ride sites, the principle of these elements of EDF Energy's transport strategy received support as it was recognised that these elements have the potential to reduce the traffic impacts which would otherwise occur. These elements of the Stage 2 consultation are therefore retained in this Stage 3 consultation. As the workforce being tested is now larger in order to give a robust assessment of impacts, each park and ride site can now accommodate up to 1,250 car parking spaces. Further information about each park and ride site is described below and in more detail in **Chapter 13** of this volume and **Volume 2, Chapter 8** (Darsham) and **Chapter 14** of this volume and **Volume 2, Chapter 9** (Wickham Market).

**5.3.4.** To develop a suitable strategy for managing construction workforce movements, and to assess the likely traffic impacts of Sizewell C, EDF Energy has estimated the residential location of the construction workforce. For this purpose, a Gravity Model of the Sizewell C workforce has been developed, which is described in **Chapter 4** of this volume.

**5.3.5.** The Gravity Model has identified that under the larger workforce assessment case a significant proportion of the larger workforce would live within the area bounded by the A12, River Blyth and River Deben. However, the on-site car park for workers would not increase in size. Therefore, to limit the number of workers driving directly to the site, EDF Energy would propose to provide direct bus services from the Leiston area under this scenario. Workers living in these areas would not be permitted to park on the construction site car park. This approach is described in more detail below.

### b) Location of the construction workforce

**5.3.6.** The construction workforce for Sizewell C would comprise a mixture of:

- home-based workers who are already resident in the local area or region and who would commute to and from the site from their existing home on a daily basis; and
- non home-based (NHB) workers who do not currently live in the local area or region and would find accommodation in the area during the construction phase. Many of these workers would be resident in an accommodation campus or in caravans on LEEIE provided by EDF Energy (refer to **Chapter 4** and **Chapter 7** of this volume). Others would find their own accommodation in the local area, for example in private rented, tourist or caravan accommodation.

## **Table 5.1** Comparison of Stage 2 and Stage 3 transport proposals

| Rail works proposed at Stage 2 | Rail works proposed at Stage 3 | | Further information |
|---|---|---|---|
| | **Stage 3 – rail-led strategy** | **Stage 3 – road-led strategy** | |
| Green rail route or new rail terminal on LEEIE | Green rail route | | **Chapter 8** |
| East Suffolk line and Saxmundham – Leiston branch line improvements | East Suffolk line and Saxmundham - Leiston branch line improvements; and some closures and upgrades to level crossings | Saxmundham - Leiston branch line improvements; and some upgrades to level crossings | **Chapters 8** and **9** |
| For early years (prior to completion of green rail route): Sizewell Halt improvements | For early years (prior to completion of green rail route): Sizewell Halt improvements or the provision of a new rail siding adjacent to the existing branch line on the LEEIE | For duration of construction: Sizewell Halt improvements or the provision of a new rail siding adjacent to the existing branch line on the LEEIE | **Chapters 8** |
| **Highway proposals at Stage 2** | **Highway proposals at Stage 3** | | **Further information** |
| | **Stage 3 – rail-led strategy** | **Stage 3 – road-led strategy** | |
| Northern park and ride site (Darsham) | Northern park and ride site | Northern park and ride site | **Chapter 13** (Northern park and ride) |
| Southern park and ride site (Wickham Market) | Southern park and ride site, and<br>(i) A12/B1078 minor improvements and Easton Road diversion route, or<br>(ii) temporary relocation of on-street parking | Southern park and ride site, and<br>(i) A12/B1078 minor improvements and Easton Road diversion route, or<br>(ii) temporary relocation of on-street parking | **Chapter 14** (Southern park and ride) |
| Four options at A12 Farnham | A12 Farnham/Stratford St Andrew bypass<br>(two village bypass) | A12 Farnham/Stratford St Andrew bypass<br>(two village bypass) | **Chapter 12** |
| A12/B1122 Yoxford roundabout or traffic signals | A12/B1122 Yoxford roundabout | A12/B1122 Yoxford roundabout | **Chapter 16** |
| Small scale improvements to B1122 | Theberton bypass and Mill Street improvement | Sizewell link road | **Chapter 11** (Theberton bypass)<br>**Chapter 10** (Sizewell link road) |
| No other highway improvements identified | Seven other highway improvements | Seven other highway improvements | **Chapter 17** |
| Electronic web-based Delivery Management System (DMS) | DMS | FMF A14/A12 Ipswich and DMS | **Chapter 15** |
| HGV movements 0700 – 2300 | HGV movements 0700 – 2300 | HGV movements potentially over extended hours | **Chapter 6** |
| HGV 225 typical day average arrivals at peak construction; up to 450 on busiest days | HGV 225 typical day average arrivals at peak construction; up to 450 on busiest days | HGV 375 typical day average arrivals at peak construction; up to 750 on busiest days | **Chapter 6** |
| **Marine works proposed at Stage 2** | **Marine works proposed at Stage 3** | | **Further information** |
| | **Stage 3 – rail-led strategy** | **Stage 3 – road-led strategy** | |
| Narrow or wide jetty or BLF | BLF | BLF | **Chapter 7** |

### c) Park and ride proposals

**5.3.7.** The geographic distribution of the workforce estimated by the gravity modelling work continues to support two park and ride developments to help reduce traffic from construction workforce movements. One would intercept traffic travelling on the A12 from the south, and one would intercept traffic travelling on the A12 from the north. Both park and ride developments would intercept traffic movements from locations west of the A12.

**5.3.8.** We presented preferred site options for northern and southern park and ride developments at the Stage 2 consultation. The purpose of both park and ride sites remains to reduce construction worker traffic on the A12 between the park and ride sites at Wickham Market and Darsham and on the B1122 between Yoxford and the construction site, including at Theberton and Middleton Moor. The northern park and ride would also reduce construction worker traffic flows on the B1125 through the villages of Blythburgh and Westleton. Similarly, the southern park and ride would reduce these flows through Snape and Tunstall on the B1069, Leiston and surrounding settlements.

**5.3.9.** Following analysis of the Stage 2 consultation responses and further work on the park and ride site options, our proposed site for the southern park and ride is at Wickham Market, and the proposed site for the northern park and ride is at Darsham. These locations are retained in this Stage 3 consultation as they are considered the most suitable sites to mitigate transport impacts. The Gravity Model estimate of the residential distribution of the peak construction workforce has informed the proposed sizing of the park and ride facilities. This has evolved slightly following refinement of the modelling and the adoption of a higher estimate of 7,900 construction workers. The proposed sizing is now up to 1,250 spaces at both Wickham Market and at Darsham.

**5.3.10.** SCC has previously raised concerns over the location of the southern park and ride, due to potential traffic impacts on the B1078 through the village, suggesting alternative more southerly locations at either Woodbridge or Martlesham.

**5.3.11.** EDF Energy considers the Woodbridge and Martlesham locations too far from the main development site to provide adequate mitigation for construction workers travelling to the site. Furthermore, a review of travel times from areas west of the A12 to each park and ride site demonstrates that the potential impacts of locating the park and ride at either Woodbridge or Martlesham would not be preferable to Wickham Market.

**5.3.12.** If the park and ride was located at either Woodbridge or Martlesham, many construction workers would simply switch to using the Darsham park and ride. This is because there would be a shorter total journey time to the main development site, with a much shorter bus journey time from Darsham than from either Woodbridge or Martlesham.

**5.3.13.** There would also be an increase in traffic using the A1120 through Yoxford High Street Conservation Area towards Darsham. While traffic flows on the B1078 travelling to and from the park and ride would obviously reduce, other Sizewell C related traffic would remain and still cause an impact that would require mitigation. Therefore, moving the park and ride further south would not remove B1078 impacts and would increase impacts elsewhere, i.e. A1120 in Yoxford.

**5.3.14.** For these reasons, we remain of the view that Wickham Market site is the most suitable location for the southern park and ride facility. Further information on the park and ride proposals, is detailed in **Chapter 13** of this volume and **Volume 2, Chapter 8** (Darsham) and **Chapter 14** of this volume and **Volume 2, Chapter 9** (Wickham Market).

### Frequency and routing of park and ride buses

**5.3.15.** The frequency and timing of park and ride buses are related to the working patterns adopted during the construction phase and the number of workers to be moved during the staff changeover periods. More frequent services would operate during staff changeover and shift start/end periods and buses would depart every ten minutes to serve the expected 5,600 workforce. However, to give a robust assessment, we have modelled a bus departing each park and ride approximately every six minutes, which would provide sufficient capacity for the assessment of the 7,900 construction workforce that has been modelled. There would be a reduced skeleton service outside the modelled hours (0600-0900 and 1500-1900). The working patterns anticipated for the construction phase are unchanged since the Stage 2 consultation, as set out in **Chapter 4** of this volume.

**5.3.16.** Bus services between the northern park and ride site at Darsham and the main development site would travel on the A12 and use the new A12/B1122 roundabout that is described in **Chapter 16** of this volume. In the rail-led strategy, these buses would continue on the B1122 through Middleton Moor and then use the Theberton bypass described in **Chapter 11** of this volume. In the road-led strategy, the buses would join the Sizewell link road via a new link west of Middleton Moor, thus bypassing both Middleton Moor and Theberton. The Sizewell link road is described in **Chapter 10** of this volume.

**5.3.17.** Services from the southern park and ride site at Wickham Market would use the A12, bypassing Stratford St Andrew and Farnham on the two village bypass (described in **Chapter 12** of this volume) and Saxmundham on the existing bypass. In the rail-led strategy, the buses would continue north to the new A12/B1122 roundabout and then follow the same route as the Darsham buses described above. In the road-led strategy, buses would turn onto the Sizewell link road north of Saxmundham, avoiding Yoxford and bypassing both Middleton Moor and Theberton.

### Implementation of the park and ride strategy

**5.3.18.** Further detail on the implementation of these proposals was explained in our Stage 2 consultation. We reconfirm in this Stage 3 consultation that the park and ride strategy includes an actively managed parking permit system for the construction workforce. This would limit and control the allocation of permits for the car park on the main development site during construction. Only workers living inside the area bounded by the A12, River Blyth and River Deben (except those living in the Leiston area) would be issued a parking permit. Each worker arriving at the site by car would need a valid parking permit to enter the site, i.e. workers, not vehicles, would be allocated permits. In this way, EDF Energy seeks to eliminate the possibility of workers from outside the area bounded by A12 and the rivers Blyth and Deben driving into the zone, parking at another worker's house or elsewhere and getting a lift to the site car park.

**5.3.19.** Workers without a parking permit (including those living in the Leiston area) would need to use one of the park and ride sites, a rail pick-up or the direct bus services from Ipswich, Lowestoft or the Leiston area. Cycling or walking would also be possible for some living in Leiston. Compliance with the Construction Worker Travel Plan (CWTP) and its parking strategy would be a requirement of all construction employees and contractors working at the construction site. It would be reinforced through a consenting and management process which would be produced in discussion with the local authorities.

**5.3.20.** As part of this, EDF Energy would vigorously monitor local roads in the area to minimise the incidence of fly parking outside designated areas such as the site car park and long-stay parking for residents at the accommodation campus and caravans at LEEIE. All construction workers would be required to register their vehicle details on a database held by site management. In the event of site management identifying fly parking by a site vehicle, or a complaint from the local community, they would identify the vehicle owner and make contact immediately. Site management would check that personal circumstances, i.e. home address, had not changed such that the parking was now permissible. If it had not, then site management would serve the worker and line manager a reminder of the parking policy in the CWTP, emphasising that fly parking was not acceptable. Further escalation steps would include potential disciplinary action and eventually withdrawal of the site pass that enables the worker to continue employment at the site.

**5.3.21.** The park and ride strategy will be developed in further detail as part of the CWTP, as well as drawing on learning from the Hinkley Point C project, which also adopts the use of park and ride for most of the workforce.

### d) Direct bus services

**5.3.22.** EDF Energy reconfirms in this Stage 3 consultation that it expects to run direct bus services from central Ipswich and Lowestoft during the peak years of construction. These services would be an alternative to the use of park and ride or local rail services for workers living beyond the area bounded by the A12, River Deben and River Blyth. In addition, following further modelling work that has been undertaken since the Stage 2 consultation, EDF Energy proposes to run direct bus services from the Leiston area. As indicated above, workers living in areas close to the construction site would not be issued a parking permit.

The frequency of any direct bus services would remain flexible to adjust to patterns of demand that arise during the construction phase. At this stage, the modelling work has been based on a half-hourly service from Ipswich and Lowestoft during staff changeover periods. A minibus service to and from Ipswich would also be provided outside of staff changeover periods for approved visitors to the construction site and for visitors to, and residents of, the accommodation campus. The Leiston bus service would on average run every ten minutes during shift changeover and start/end times. However, the frequency would vary depending on the predicted demand during that period. Minibuses from Saxmundham train station would run hourly to coincide with scheduled train arrival and departure times.

**5.3.23.** Direct bus services from Ipswich and Lowestoft would use the A12 and then follow the same routes as the park and ride buses in the rail-led and road-led strategies as described above. These routes would minimise the potential for effects on local villages and give an approximate one-way journey time of 40 minutes from Ipswich and 35 minutes from Lowestoft. The local Leiston service would follow the B1069 to the main development site, serving the High Street in Leiston, with an approximate one-way journey time of 15 minutes.

**5.3.24.** EDF Energy's traffic modelling has continued to be based on 200 workers travelling to and from the construction site by direct bus from Lowestoft and Ipswich. EDF Energy considers that this is a reasonable assumption and that, in practice, it may well be possible to move more workers in this way.

### e) Total number of daily bus movements

**5.3.25.** In total, EDF Energy has estimated that up to 650 daily bus movements (325 return journeys) could occur at peak construction. These figures combine both park and ride and direct bus movements. The majority of bus movements would be from the park and ride facilities and Leiston and would occur at shift start/end and changeover periods. EDF Energy anticipates that bus movements would comprise larger buses providing park and ride services and the Leiston service, while smaller mini-bus sized vehicles would be suitable for the services from Ipswich, Lowestoft and Saxmundham station.

### f) Use of rail services by workers

**5.3.26.** Some responses to Stage 2, including from the Suffolk Preservation Society, Railfuture East Anglia and the Orwell Astronomical Society suggested that we should use dedicated rail services to bring construction workers to and from the main development site. This suggestion was often raised by respondents keen to see additional investment in local rail infrastructure, including further upgrades to the East Suffolk line to allow faster and more frequent services, and the re-instatement of rail passenger services to Leiston.

**5.3.27.** However, during the Stage 2 consultation, EDF Energy proposed that all of the available train paths would be used for moving freight rather than construction workers, for a number of reasons:

- a single large freight train can avoid in the order of 50 HGVs or 100 HGV movements on the local road network;
- only a limited proportion of the construction workforce is likely to live sufficiently close to a rail station to make daily travel by rail an attractive proposition;
- the attractiveness of using rail for workers is likely to be further limited by the constrained frequency of services on the East Suffolk line and the relatively slow journey time by rail from many locations when compared to travel by car or bus; and
- start and finish times for the workforce are unlikely to coincide with available rail services, whereas park and ride and direct bus services can be more easily timed and flexibly adapted to meet the required demand.

**5.3.28.** EDF Energy therefore continues to maintain in this Stage 3 consultation their strategy of transporting workers by car, park and ride and direct bus services, and we will not be exploring further the use of rail to transport construction workers.

**5.3.29.** Although no new rail passenger services would be provided, rail use would be encouraged and a bus service would be in place to facilitate the transfer of workers from Saxmundham railway station to the main development site. Construction workers would be able to use existing rail services to reach Darsham railway station, from which the park and ride site and frequent bus services to the construction site would be a short walk away.

### g) On-site parking during construction

**5.3.30.** The Gravity Model indicates that a significant number of construction workers would reside east of the A12. For these workers, it would not be sensible or viable to travel away from the main development site to a park and ride facility. At Stage 2, we proposed to provide a 1,000 space car park on-site to accommodate the peak car park demand from construction workers and accommodation campus staff, which would accommodate the workforce driving from within the area bounded by the A12 and rivers Deben and Blyth. EDF Energy is proposing to broadly retain the Stage 2 consultation proposal to allow workers living in this area to drive directly to the construction site.

**5.3.31.** However, further modelling work has been undertaken since Stage 2, testing the impact of a larger 7,900 construction workforce and the potential overlapping of car park demand based on the shift patterns and additional vehicles arising from the 'weekend effect' (where NHB workers arrive in single-occupancy vehicles). This indicates that the number of construction workers living within the area bounded by A12 and two rivers would necessitate a larger on-site car park than the 1,000 spaces proposed at Stage 2. EDF Energy wishes to avoid the need to provide a larger car park and to avoid increased traffic impacts from this area. Consequently, EDF Energy is committed to controlling the number of workers allocated parking permits to keep within the proposed 1,000 space car park capacity. The Leiston area, relatively close to the site, naturally lends itself to the provision of direct bus services and travel by walking or cycling. Therefore, as described above, workers living in the Leiston area would not be allocated a parking permit, but would be able to use the direct bus services provided. Alternatively, these locations are sufficiently close to the construction site to make walking or cycling a feasible travel mode.

**5.3.32.** During the early years of construction, the workforce would be smaller but the park and ride facilities and other mitigation measures would not yet be in place. During this period, workers would park at either the main on-site car park or on LEEIE, where caravans would also be located. The early years modelling work described in **Chapter 6** of this volume takes this fully into account.

### h) Walking, cycling and travel planning

**5.3.33.** Following this Stage 3 consultation, EDF Energy will consider the scope to encourage workers living in the local area to cycle directly to the main development site. We will assess the existing network of local cycle routes and identify how to enhance existing facilities, working within existing highway land, to encourage safe cycling to site during both construction and the operation of Sizewell C. This work has already been done in respect of the Bridleway 19 diversion along Lover's Lane, the B1122 and Eastbridge Road. Further information can be found in Chapter 18 of this volume.

**5.3.34.** As EDF Energy progresses its proposals, a CWTP will be developed. This would include the proposals for encouraging walking or cycling to the construction site and park and ride facilities where practicable, as well as the scope for encouraging higher levels of car-sharing to further reduce traffic impacts.

**5.3.35.** The traffic modelling in **Chapter 6** of this volume is based on no construction workers walking, cycling or motorcycling either to the main development site or to the park and ride facilities. This conservative assumption adds to the robustness of the traffic model, as in practice this would occur to some degree and walking and cycling would be encouraged via the CWTP.

### i) Summary

**5.3.36.** The combined effect of EDF Energy's transport strategy for the movement of the construction workforce would be to reduce significantly the scale of additional

**5.3.37.** car traffic that would otherwise be generated on the local road network at peak construction. The accommodation campus, and caravan site at the LEEIE, reduces the need for construction workers to travel to work each day. For workers living further afield, the park and ride facilities would significantly reduce additional traffic for the towns and villages closest to the main development site. The proposed construction working patterns (refer to **Chapter 4** of this volume) would also spread workforce journeys throughout the day, thus reducing the traffic impacts.

**5.3.38.** Additional traffic would nonetheless be generated and **Chapter 6** of this volume sets out how this has been robustly assessed when modelling the traffic impacts of Sizewell C.

## 5.4. Transport strategy for moving materials and freight

### a) Introduction

**5.4.1.** The construction of Sizewell C would require large volumes of bulk and other materials to be delivered to the main development site. This section provides the latest information on EDF Energy's overall approach to managing freight, the latest material quantities estimates, and summarises how rail and road would be used to bring the materials required for the construction of Sizewell C effectively to the site. EDF Energy would welcome feedback on this from Stage 3 consultees.

### b) Marine-led strategy no longer proposed

**5.4.2.** At the Stage 2 consultation, we said:

*"In the event that the rail and/or marine solutions, which remain EDF Energy's preferred strategy, prove to be impractical or not cost-effective EDF Energy may explore road-based scenarios for freight movement with appropriate mitigation of the resulting greater highway impacts that would arise."* (paragraph 6.4.3)

**5.4.3.** Since Stage 2 we have further considered the potential of a marine-led strategy based partly on learning from Hinkley Point C where the construction of a jetty has proved challenging, and on further environmental studies at Sizewell where the marine environment is more sensitive.

**5.4.4.** A marine-led strategy would necessitate the construction, operation and decommissioning of a jetty. The construction activities (including piling) would result in severe underwater noise which is likely to extend to a radius of several kilometres (km). This is likely to cause significant adverse effects on marine ecology, fisheries and marine mammals, including porpoise. In order to mitigate the impact, seasonal restrictions on construction and a slower construction method would be necessary, although impacts would remain significant.

**5.4.5.** The jetty options would also result in habitat loss associated with the footprint of the piles and cause temporary effects such as a reduced wave height at the shore and changes to the alignment of the shoreline.

**5.4.6.** The seasonal restrictions that would be required to construct the jetty would result in a delay to the delivery of construction materials by sea. If EDF Energy were to rely on a marine-led freight strategy it could significantly extend the construction programme and the jetty may not be available in time to deal with peak construction activity.

**5.4.7.** EDF Energy therefore considers that it would be more effective to adopt a rail or road-led strategy from the outset in order to mitigate those effects and ensure the timely construction of the project. The principal elements of the rail-led and road-led strategies are set out in the introduction to this chapter.

**5.4.8.** There is still an operational requirement for a marine delivery facility, principally for delivery of AILs, and this would be achieved by the installation and operation of a BLF. The BLF would be, first and foremost, designed to deliver AILs into Sizewell C by barge. The barge would be loaded with AILs at a transhipment port, towed to the Suffolk coast, moored in position and the barge beached. AILs would then be transported to site by trailer along an access road.

### c) Material quantities to be moved

**5.4.9.** The following sections provide more information on EDF Energy's latest estimates for material quantities and proposals for moving freight by rail and road.

### Material quantities estimated

**5.4.10.** The materials which would require transportation to and from the main development site during the construction phase can be divided into four general categories:

- the materials required to be brought to the site for the construction of the two proposed UK EPR™ units and associated permanent power station, sea defences and ancillary buildings;
- the materials required to be brought to the site for all the supporting Sizewell C specific elements of the construction programme. This includes materials for the construction of the main development site access road, the accommodation campus and other temporary and permanent structures;
- material movements associated with the bulk earthworks phase of the construction programme and, depending on borrow pit material properties, there could be a requirement at the end of construction phase for storing surplus excavated material across the site for landscaping during the land restoration phase; and
- material movements associated with the construction and removal of any associated developments, including the accommodation campus.

### Material quantities for the construction of two UK EPR™ units and ancillary buildings and structures

**5.4.11.** The material quantities required for the main construction of a two UK EPR™ development have been considered carefully as part of the development of the project. The Sizewell C design is essentially the same as Hinkley Point C and, as such, the material quantities estimates for the replicated elements of the project are informed by experience on Hinkley Point C.

**5.4.12.** In total, approximately 5.2 million tonnes of materials would be required for the main construction of the power station and supporting buildings. Of this, approximately 4 million tonnes would be required for the main civil works. This is a larger volume than estimated at the Stage 2 consultation, following further investigation and development of the material management strategy. Due to the spare capacity within the freight management model for the utilisation of trains, it has not been necessary to increase the number of HGVs in the traffic modelling assumptions for the rail-led strategy.

**5.4.13.** Most of the materials required for the main construction are bulk materials required to produce concrete (including sand, aggregates, cement and cement replacement products) as well as special fill materials and smaller quantities of steelwork, reinforcing bar ("rebar") and a wide range of other materials in much smaller quantities.

### 5.4.14. Material quantities for Sizewell C specific elements of the construction programme

**5.4.15.** The main construction items specific to Sizewell C are as follows:

- site set up and infrastructure, including the access road, temporary and permanent crossings of the Site of Special Scientific Interest (SSSI) corridor, utilities and fencing;
- the accommodation campus;
- site offices and welfare;
- the green rail route into the main development site;
- the BLF for delivery of AILs during construction and operation;
- the cut-off wall required to support the earthworks/ excavation phase; and
- sea defences for the main development site.

**5.4.16.** Many of these elements are still in the design development phase and are to be the subject of further work. Material quantities estimates for these elements of the project have been subject to validation and development since Stage 2, but still remain provisional at this stage.

**5.4.17.** However, for the purposes of ensuring a robust approach to the material quantities that may be generated by the project, and the associated transportation requirements, materials estimates have continued to be refined in the light of experience at Hinkley Point C. It is currently estimated that these elements would add approximately a further 2.9 million tonnes to the total material quantities required. These would be largely materials for concrete production and other building construction materials.

### Material quantities movements during the earthworks phase

**5.4.18.** During the early phase of construction, a large area would need to be excavated to provide the foundations for the power station and supporting buildings. At present, it is estimated that around 7.7 million tonnes of excavated material may be generated during the excavation phase of the main construction area. This figure will continue to be refined and is linked to decisions on building foundation depths and the precise location of the cut-off wall.

**5.4.19.** A proportion of the excavated material would be peat, or peat mixed with clay. This material is unsuitable for use as engineering fill material and is also unsuitable for wider landscaping within the main development site or the EDF Energy estate. As such, it is currently anticipated that this material would be re-used as backfill in a borrow pit within the main development site. EDF Energy's proposals are detailed in **Chapter 7** of this volume.

**5.4.20.** Of the approximate 7.7 million tonnes, EDF Energy now estimate that around one quarter (approximately 2 million tonnes) would be unsuitable for use and around three quarters would be likely to be suitable for use as fill material or for landscaping. The quantity of fill material which could require importation is now estimated at around 2.2 million tonnes to balance the earthworks for the overall site. This is slightly more than estimated at Stage 2 consultation, due to further development of the material management strategy.

## Table 5.2 Current estimates of material quantities

| Item | Current Estimate | Stage 2 Estimate | Reason for Change |
|---|---|---|---|
| Material quantities for construction of two UK EPR™ units and associated ancillary buildings. | Approximately 5.6 million tonnes (of which 4.4 million tonnes are associated with the main civil works construction phase and 1.2 million tonnes with the mechanical and electrical phase). | Approximately 4.5 million tonnes (of which 3 million tonnes are associated with the main civil works construction phase and 1.5 million tonnes with the mechanical and electrical phase). | Revised figures from Hinkley Point C. |
| Material quantities for Sizewell C specific elements of construction. | Approximately 2.9 million tonnes. | Approximately 2.5 million tonnes. | Design maturity has increased and resulted in a small increase of material for site specific elements. |
| Imported fill material. | Approximately 2.2 million tonnes. | Approximately 2 million tonnes. | Updated review of constructability.<br>Further testing on materials for high quality back fill been carried out identifying that more high grade material would have to be provided from offsite. |
| Excavated Material. | Approximately 7.7 million tonnes (of which approximately 5.7 million tonnes are suitable for use and 2 million tonnes unsuitable for use). | Approximately 6.5 million tonnes (of which approximately 4.5 million tonnes is suitable for use and 2 million tonnes unsuitable for use). | Review of the constructability study has shown a greater amount of material would be excavated but have the potential to be re-used around the site. |

### Total material quantities

**5.4.21.** The total material quantities associated with the main elements of Sizewell C construction are summarised in **Table 5.2**.

**5.4.22.** EDF Energy will continue to refine its estimates of the volumes and types of materials requiring transportation. Taking all of the above into account, and based upon existing information, in total EDF Energy estimates that around 10 million tonnes of material would require transportation to the main development site over the construction phase.

### Material quantities arising from off-site associated developments

**5.4.23.** In addition to the above, there would be some movements associated with the construction and (where relevant) subsequent removal activities relating to the off-site associated developments, i.e. the park and ride sites, rail and highways improvements. Material quantities for these elements of the project are currently estimated to be in the region of 300,000 to 400,000 tonnes. A more precise quantity will be included as part of the application for development consent.

### d) Use of Sizewell Halt or new rail siding in early years

**5.4.24.** As noted at the Stage 2 consultation, there is an existing rail terminal at Leiston (south of King George's Avenue) at the end of the rail line between Saxmundham and Leiston. This was used for occasional movements associated with the transport of spent fuel from Sizewell A. The rail terminal was also used during the construction of Sizewell B. As noted at the Stage 2 consultation, with refurbishment, it would be possible to use this existing rail terminal to bring freight deliveries to the site by rail during the early construction phase, but not the five trains required during the main construction phase.

**5.4.25.** As an alternative, EDF Energy is, in this Stage 3 consultation, seeking views on the construction of a new rail siding adjacent to the existing branch line on the LEEIE.

**5.4.26.** In the early years of the construction programme the existing Sizewell Halt rail terminal or the proposed new rail siding would receive up to two freight trains per day in both the rail-led and road-led strategies. Following construction of the green rail route in the rail-led strategy, deliveries of five trains a day would go directly into the main construction site. In the road-led strategy up to two freight trains per day would continue to be delivered to the existing Sizewell Halt rail terminal or the proposed new rail siding throughout the construction period. EDF Energy's proposals are outlined in detail in **Chapters 7** and **8** of this volume.

### e) Heavy Goods Vehicles in the early years

**5.4.27.** Alongside rail movements, some freight would still need to be delivered by road in the early years, even if the rail-led strategy is adopted. The transport modelling work, described in **Chapter 6** of this volume, is based on an expected HGV volume of 300 HGVs per day during this period. The modelling also includes 140 HGVs per day from LEEIE; 35 HGVs along Lover's Lane to the secondary site access and 105s HGV along Sizewell Gap to the Sizewell B access. The level of HGVs during this period is unaffected by whether a rail-led or road-led strategy is pursued, as the road and rail infrastructure required to support those strategies would not be completed and operational in these early years of the project's construction. We will continue to look at opportunities to minimise the impacts of these HGVs during the early years of construction.

### f) Heavy Goods Vehicles at the peak of the construction programme

**5.4.28.** If EDF Energy adopts the rail-led strategy (constructing the green rail route), a maximum of five trains would be capable of delivering to the main development site during the peak construction period. In contrast, under the road-led strategy, only two trains per day would make deliveries to the main development site during the peak construction period, through the continued operation of Sizewell Halt, or the proposed new rail siding adjacent to the existing branch line on the LEEIE. This means that there is a significantly greater need for use of HGVs under the road-led strategy. However, there would be a need for some freight to be transported by road even in the rail-led strategy.

**5.4.29.** In EDF Energy's traffic modelling, (refer to **Chapter 6** of this volume), the typical day is the focus of the assessment, as this is most representative of the scale of impacts that could occur. EDF Energy has also, however, modelled the busiest day.

**5.4.30.** EDF Energy anticipates that in the rail-led strategy, during the peak construction period there would be:

- an average of 225 HGV deliveries per day; and
- up to 450 HGV deliveries on the busiest day.

**5.4.31.** EDF Energy anticipates that in the road-led strategy, during peak construction there would be:

- an average of 375 HGV deliveries per day; and
- up to 750 HGV deliveries on the busiest day.

**5.4.32.** At many periods in the construction phase average HGV movements would be lower than the peak figures above. The figures are averages for a typical day, which means that on any given day the number of HGV movements could be higher or lower than set out. On infrequent occasions and on the busiest days, the number of HGV movements could be up to twice the average.

**5.4.33.** The peak construction period modelling also includes 70 HGVs per day from the LEEIE along Lover's Lane to the secondary site access in the rail-led strategy, and 140 HGVs per day in the road-led strategy on that route.

**5.4.34.** EDF Energy expects the project to be subject to planning requirements that would control the absolute number of HGV movements allowed on any given day. These requirements could limit the overall number of movements, to not exceed the average numbers during peak construction that have been used in the transport and environmental assessments.

**5.4.35.** HGV movements would be spread across the day, with a greater proportion of deliveries occurring in the morning. The traffic modelling is based on HGV deliveries between the hours of 7am and 8pm, with more arriving in the morning than the afternoon, as **Chapter 6** of this volume explains. However, as discussed below, there is potential for these hours to be extended under the road-led strategy.

**5.4.36.** HGV movements would be monitored and controlled using the methods set out later in this chapter.

### g) Impact of Light Goods Vehicle (LGVs)

**5.4.37.** In addition to HGV movements, it is anticipated that the construction phase would generate a significant number of lighter goods vehicles movements, i.e. vans and small delivery vehicles that weigh less than 3.5 tonnes. These light goods vehicle movements would be used for a wide range of purposes, including the delivery of post, packages, food, consumables, specialist tools and equipment and other small items. Vehicles in this category would also include contractor's fleet vehicles and visitors to the site.

**5.4.38.** We are proposing a consolidation facility for post, packages and other small item deliveries to the main development site. This is proposed to be located at the proposed southern park and ride facility at Wickham Market (**Chapter 14** of this volume).

**5.4.39.** EDF Energy has estimated that there would be 700 LGV movements per day on the local road network at peak construction and this has been included in the modelling. This is in the order of three times the daily average number of LGV movements recorded during the peak period of Sizewell B construction. This increase on the Sizewell B figure reflects that Sizewell C has two UK EPR™ units, and also includes an additional allowance for the busiest days. The figure is therefore a robust estimate for traffic modelling and transport assessment purposes. On many days and periods of the construction phase, LGV movements are likely to be substantially lower. Given the wide variety of project purposes to which these vehicle movements relate, these movements have been taken to occur throughout the working day and from a wide variety of locations using various routes.

## 5.5. Justification for the differences in the proposals for the rail-led and road-led strategies

**5.5.1.** There are differences between the proposals being put forward by EDF Energy in this Stage 3 consultation for the rail-led and road-led strategies. A comparison of the proposals for both strategies is set out in **Table 5.1**. The difference between the proposals under the two strategies is driven by the distinctions between:

- the volume and type of freight which could be accommodated by rail in a strategy where the green rail route is constructed, out of the total volume of freight required for construction; and
- the volume and type of freight which would need to be accommodated by road alone if the green rail route were not constructed.

**5.5.2.** While the majority of the proposals are identical in both cases, there are several key differences, relating in particular to:

- the Theberton bypass (proposed as part of the rail-led strategy) and Sizewell link road (proposed as part of the road-led strategy only);
- the FMF (proposed as part of the road-led strategy only);
- the timing of HGV movements (proposed to be more extended under the road-led strategy); and
- The extent of works to the East Suffolk line (EDF Energy does not expect that any upgrades to this line would be required under the road-led strategy).

**5.5.3.** This section explains the rationale for these distinctions.

### a) Theberton bypass and Sizewell link road

**5.5.4.** EDF Energy has assessed the road traffic noise impacts on the B1122 under both the rail-led and road-led strategies, based on the traffic figures reported in **Chapter 6** of this volume. The work forecasts daily traffic volumes of 9,150 and 10,300 vehicles at peak construction at Theberton under the rail-led and road-led strategies respectively, which includes Sizewell C and general traffic. The noise analysis showed that under both strategies, the noise impacts from these increased traffic volumes in Theberton would, at times, be significant. In order to avoid the noise and other impacts in Theberton, a bypass is proposed under the rail-led strategy. Under the road-led strategy, Theberton would be bypassed by the Sizewell link road, which follows the same alignment around the village.

**5.5.5.** In Middleton Moor, the noise impacts under the road-led strategy would also be significant at times. The Sizewell link road, which bypasses both Theberton and Middleton Moor and continues to the A12, would provide mitigation. Traffic to and from the south would access the new road from the A12 and re-join the B1122 east of Theberton. Traffic to and from the north would join the Sizewell link road west of Middleton Moor and also avoid the village.

**5.5.6.** However, under the rail-led strategy, Sizewell C and general traffic flows on the B1122 through Middleton Moor total 6,250 vehicles per day, somewhat lower than the 6,550 vehicles per day under the road-led strategy if the Sizewell link road were not in place. Importantly, there would be fewer HGV in the rail-led traffic flow (450 HGV movements per day, 7% of the total flow) than under the road-led traffic flow that includes 750 HGV movements per day, 11% of the total flow. The noise analysis shows that the resultant noise impacts are not significant at the lower total traffic and HGV volumes in the rail-led strategy. Consequently, the Sizewell link road is not included under the rail-led strategy mitigation proposals and Sizewell C traffic would continue to use the existing B1122 through Middleton Moor.

#### b) Freight management facility

**5.5.7.** In order to add an extra level of control to manage the additional HGVs required under the road-led strategy, it is proposed to utilise a FMF for the road-led strategy only. The lower number of HGVs required for the rail-led strategy could effectively be managed using the Electronic web-based DMS. This is described in **section 5.6** below.

#### c) Timing of Heavy Goods Vehicle movements

**5.5.8.** The provision of the Sizewell link road under the road-led strategy would result in a reduction in noise and vibration impacts benefitting residents alongside the A12 in Yoxford and on the B1122 in Middleton Moor and Theberton. This mitigation may allow the hours of operation of HGVs to be extended under the road-led strategy. However, further noise assessment work would need to be undertaken in advance of the application for development consent at these locations, and at key points on the A12 such as Saxmundham, Marlesford and Little Glemham, in order to determine if extended hours of operation for HGV movements would be feasible.

#### d) Improvements to the East Suffolk line

**5.5.9.** Under the rail-led strategy, the use of the East Suffolk line for up to five freight movements per day would require some upgrade works to the East Suffolk line to ensure safety and to ensure that there is sufficient capacity for freight deliveries and passenger services to operate without impeding one another. These upgrades would include:

- a passing loop at a location between Ipswich and Saxmundham;
- signalling upgrades;
- a track crossover at Saxmundham;
- up to 45 level crossings to be upgraded or closed, and rights of way to be diverted; and
- strengthening works to six bridges.

**5.5.10.** EDF Energy does not expect that any upgrades to this line would be required under a road-led strategy. However, Network Rail is carrying out further assessments and it is possible that some of the infrastructure upgrades required under the rail-led strategy may also be required under the road-led strategy. Whilst up to two trains per day would be using Sizewell Halt or the new rail siding throughout the construction period under the road-led strategy, these trains would be running overnight on the East Suffolk line and so no capacity upgrades would be required to accommodate them alongside passenger services. Additionally, level crossing upgrades or closures may not be required on the East Suffolk line, but nine level crossings on the Saxmundham – Leiston branch line would need to be upgraded. This is described further in **Chapter 8** of this volume.

## 5.6. Management, monitoring and control of Heavy Goods Vehicles

#### a) Routes, timings and caps on Heavy Goods Vehicle movements

**5.6.1.** EDF Energy expects the project to be subject to planning requirements that would control the average number of HGV movements allowed over a period of time. These requirements could limit the overall number of movements, to not exceed the average numbers during peak construction that have been used in the transport and environmental assessments.

**5.6.2.** The routes which HGVs can use, and the times at which deliveries can be made are also capable of being controlled via planning requirements and obligations. The appropriate use of such commitments is something which EDF Energy will be considering further prior to submission of the application for development consent.

#### b) Monitoring of Heavy Goods Vehicle deliveries

**5.6.3.** EDF Energy is proposing to adopt a range of measures to manage and control HGV movements to and from the main development site. This includes the implementation of an electronic web-based DMS. All contractors receiving and delivering goods and materials by HGV would be required to operate and participate in the DMS. Through this system, agreed deliveries to the site would be booked in advance and allocated to agreed delivery slots within the day. The system would provide a means of recording HGV deliveries to the site, ensuring that such deliveries are operating within any agreed controls and limits. It would also help to facilitate rapid electronic communication with suppliers in the event of any accidents, incidents or other project events that could lead to HGV deliveries being delayed or rescheduled.

**5.6.4.** EDF Energy has developed a DMS that is now operational for the Hinkley Point C project. Learning from this and other similar projects would inform the design and development of the DMS for Sizewell C. A similar system is, for example, operating for the management of container

HGV movements to and from Felixstowe Port. It has proved effective in facilitating smooth day-to-day port operations as well as reducing the requirement for external holding of HGVs on the local road network when there are weather related delays at Felixstowe.

**5.6.5.** EDF Energy proposes to manage HGV deliveries to site using ANPR and/or Radio frequency identification (RFID) technology in order to monitor and control the movement of HGVs on agreed routes.

**5.6.6.** ANPR is a camera-based technology that can be used to record the number plates of vehicles on specific routes. Via the DMS, suppliers would be required to provide the number plates of HGVs delivering goods and materials to the site. ANPR cameras would be placed on the agreed HGV routes to monitor compliance. Use of the ANPR system would be combined with wider communication with suppliers and HGV drivers. Any breaches of compliance would be investigated and addressed. EDF Energy has implemented an ANPR system for the Hinkley Point C project to secure compliance with agreed HGV routes. Learning and experience from the operation of the Hinkley Point C system would continue to be incorporated into the procedures adopted for Sizewell C.

**5.6.7.** RFID is an electrical system where objects carrying tags can be identified and monitored. Via the DMS, suppliers would be required to tag vehicles and/or items being delivered. Use of the RFID system would be combined with wider communication with suppliers and HGV drivers so that agreed HGV routes and the importance of compliance with them are understood.

**5.6.8.** Through these measures, we would be able to confirm that the number of daily deliveries to the site remains within any agreed limits and that HGVs comply with agreed routes. EDF Energy is committed to achieving a high level of compliance with agreed project controls in this area and to promptly addressing any breaches in compliance were they to occur. Further details of EDF Energy's proposed approach to the management of HGV movements to and from the site will be set out in a Construction Traffic Management Plan (CTMP). The development of the CTMP will be progressed in consultation with SCC.

### c) Incident management

**5.6.9.** EDF Energy anticipates putting in place several approaches to address an incident or accident preventing normal timely access to the main development site via the agreed HGV routes. This would include the development and implementation of communication procedures with the police, SCC and Highways England to give early identification or warning of any incidents/accidents or events which could prevent normal smooth access to the site via the approved routes. Depending on the nature and location of the incident, a range of alternative approaches may be adopted, including:

- following identification of an incident of concern, rapid communication would be made with suppliers to delay, reschedule or hold en-route planned HGV deliveries to the site;
- following identification of an incident of concern, HGV deliveries would be held at the FMF or the southern park and ride site;
- for deliveries already en-route, agreed diversionary routes would be used where the normal agreed route to site is unavailable, e.g. due to an accident;
- the southern park and ride facility at Wickham Market includes a Traffic Incident Management Area (TIMA) for holding HGVs in the event of an incident on the local highway network or the main development site (refer to **Chapter 14** of this volume). The TIMA is required for both the rail-led and road-led strategies;
- the temporary holding at, or controlled release of, HGVs from the Sizewell C site, where these HGVs have already delivered goods and are ready to make their return journey; and
- the use of part of the LEEIE, which includes space for a holding area for HGVs, in the limited circumstances where direct access to the site may be temporarily unavailable.

**5.6.10.** EDF Energy will further develop strategies for incident management in consultation with SCC, Highways England, the police and other emergency services. Key elements of the proposals and approaches would be set out in a Traffic Incident Management Plan (TIMP) for the construction phase.

## 5.7. Summary of Sizewell C traffic impacts and mitigation

**5.7.1.** The traffic modelling work shows some congestion in the Reference Case, i.e. before Sizewell C traffic is added. This is particularly noticeable on the A12 at Woodbridge during weekday peak periods and there is some evidence of traffic re-routing to avoid this area. On the A12 further north at Farnham, there is congestion on Friday evenings and Saturday mornings during the peak holiday season and during major events such as the Latitude festival in July. These issues are not related to Sizewell C and are therefore a matter for SCC as the local highway authority. SCC recognise these issues in promoting the Suffolk Energy Gateway scheme to improve the A12 north of Wickham Market. In their submission on that scheme, they have acknowledged the Woodbridge issue in the Executive Summary of their report: *"The two remaining sections of A12 single carriageway south of the scheme (close to Woodbridge) are in Suffolk County Council's view more easily solved through lower cost, largely online improvements utilising a wide range of current and future public and private funding options."* (Ref. 5.3)

**5.7.2.** The B1122 is currently operating well within its traffic carrying and environmental capacity. As a result, SCC has no proposals to improve it. Similarly, most other roads and junctions in the modelled area operate within capacity for most of the time. SCC have few improvements proposed, except for those associated with bringing major developments forward, such as Adastral Park at Martlesham.

**5.7.3.** The impacts of Sizewell C construction traffic on the local highway network, during the early years and peak phases of construction, are described in **Chapter 6** of this volume. This presents comparisons of total daily traffic flows, HGV and bus flows, between the Reference Case and the 'with Sizewell C' rail-led and road-led strategies during both phases of construction. These figures have helped EDF Energy identify where Sizewell C peak or early years construction traffic creates a need for mitigation measures to reduce impacts. Such mitigation can mean creating additional capacity to accommodate the forecast traffic increase, improving a junction or section of road to mitigate against additional accidents or providing a new route to reduce or eliminate environmental impacts. A summary of these comparative impacts is provided below.

### a) Peak construction

**5.7.4.** The new road proposals, i.e. Theberton bypass under the rail-led strategy or Sizewell link road under the road-led strategy, serve to not only remove through-traffic from the B1122, but to draw traffic away from other local routes through Leiston, Saxmundham and Tunstall. Whilst the road-led strategy would result in more traffic overall than the rail-led strategy, additional traffic would be lower in Yoxford (on both the A12 through the village and on the B1122) and Westleton.

**5.7.5.** Some routes would experience substantial increases in HGV and bus flows during Sizewell C construction, though in many cases the existing flow is very low and the total daily flow with Sizewell C traffic would not cause capacity issues. EDF Energy recognises however that the effects of increased HGV and bus movements on the environment are important factors to be considered and these are discussed in the relevant PEI chapters in **Volume 2**.

**5.7.6.** The proposed bypass of Farnham and Stratford St Andrew and at Theberton would remove all Sizewell C-related traffic from these villages, along with a significant amount of existing traffic. Under the road-led strategy, the Sizewell link road would also yield substantial reductions in traffic volumes at Yoxford and Middleton Moor compared with the rail-led strategy.

**5.7.7.** The assessment shows that there are no other locations where the addition of Sizewell C peak construction traffic necessitates mitigation, under either the rail-led or road-led strategies.

**5.7.8.** Many locations assessed would likely experience some re-routing of non-Sizewell C traffic, when the Sizewell C peak construction traffic is added. This is due to some sections of highway already experiencing congestion in the Reference Case (without Sizewell C), so that when project traffic is added some existing traffic would choose to use other routes.

**5.7.9.** In most of these locations, the re-routed traffic volume is small (less than 2% of daily flows) and would not be noticeable when spread over a whole day. This occurs under both the rail-led and road-led strategies, though more re-routing would potentially occur under the road-led strategy due the higher volume of HGVs.

**5.7.10.** Some locations would experience a higher level of re-routing, particularly the single-carriageway stretch of the A12 at Woodbridge which, when Sizewell C traffic is added, sees some of the existing traffic switch onto various alternative routes such as the A140 and B1078. The proposed two village bypass would, when completed, attract some trips back to the A12 and away from other routes such as the B1069, as well as providing the significant benefit to the villages of Farnham and Stratford St Andrew of removing through-traffic.

### b) Early years

**5.7.11.** During the early years of Sizewell C construction, re-routing would also likely occur in some locations where congestion is already present in the Reference Case, for example on the A12 at Woodbridge.

**5.7.12.** Prior to completion of the mitigation proposals the construction traffic associated with the project

**Table 5.3** Locations where traffic effects differ for the rail-led and road-led strategies

| Location | Rail-led increase | Road-led increase | Road – Rail difference veh/day | Reason |
|---|---|---|---|---|
| B1122 from Leiston to main site access. | +70% | +65% | -250 | Some traffic to/from A12 (S) uses Sizewell link road. |
| B1122 Yoxford – Middleton Moor. | +36% | +22% | -600 | Traffic to/from A12 (S) uses Sizewell link road. |
| B1122 Middleton Moor. | +36% | -90% | -1600 | Traffic to/from A12 (S) and (N) uses Sizewell link road. |
| B1119 west of Leiston. | +32% | +27% | -200 | Sizewell link road is preferable route for some trips. |
| Lover's Lane. | +12% | +22% | +150 | Extra HGV from Sizewell Halt/LEEIE. |
| A12 Yoxford. | +11% | +7% | -700 | Traffic to/from A12 (S) uses Sizewell link road. |
| A12 Marlesford. | +9% | +10% | +250 | Extra HGV in road-led strategy. |
| A12 Woodbridge. | +9% | +7% | +250 | Extra HGV in road-led strategy. |
| A14 between A12 N and A12 S. | +9% | +3% | +300 | Extra HGV in road-led strategy. |

would use existing routes through Farnham and Stratford St Andrew, Theberton and Yoxford. Although the construction workforce would be much smaller than at peak construction, meaning fewer worker trips and HGV deliveries to the main development site, there would be HGV deliveries to the associated development construction sites (park and rides, bypasses and junction improvements) and these trips would have significant impacts before the schemes are completed.

**5.7.13.** For this reason, EDF Energy propose, at the same time as starting work on the main development site, to build the major mitigation schemes, i.e. the Yoxford roundabout, two village bypass and either Theberton bypass (if the rail-led strategy is taken forward) or the Sizewell link road (if the road-led strategy is chosen).

**5.7.14.** Construction of the remaining mitigation measures would start after the schemes described above. EDF Energy anticipates that the Darsham and Wickham Market park and ride sites would be constructed first, followed by the other highway improvements.

**5.7.15.** These highway improvements would be dedicated to EDF Energy and open to all traffic early in the construction period. We would expect SCC to adopt them in due course. The schemes would become a permanent improvement to the highway network that leaves a legacy for local people and road users long after the Sizewell construction traffic has ceased.

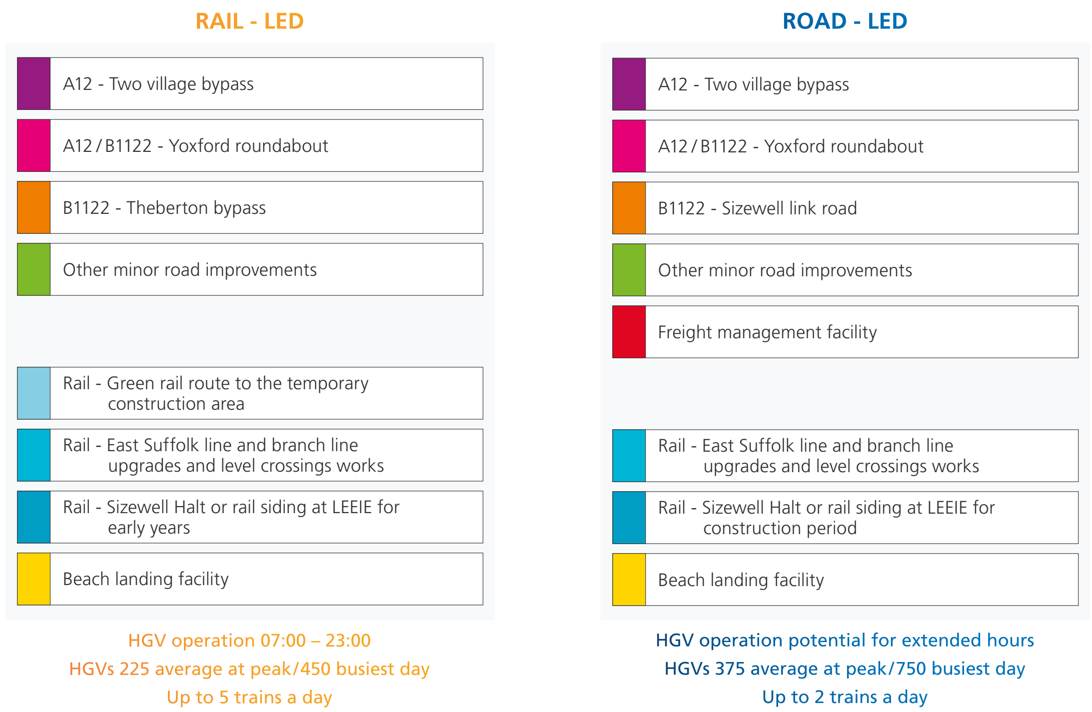
**5.7.16.** Further information is presented in **Chapter 6** of this volume and in the preliminary environmental information chapters contained in **Volume 2**.

## 5.8. A road-led or a rail-led transport strategy?

**5.8.1.** As explained above and more particularly in **Chapter 8** of this volume, the rail-led strategy requires significantly more improvements and upgrades to the existing rail network. This would include a new passing loop on the East Suffolk line, track works at Saxmundham, strengthening work to six bridges and the upgrading or closure of up to 45 level crossings. We do not yet know how long these works may take or whether they are deliverable within the timescale necessary to support the project. Government policy is explained in **Chapter 3** of this volume which sets out that the need for new electricity generating stations, including nuclear power is considered to be "urgent".
If the necessary improvements cannot be delivered in time, EDF Energy could not adopt the rail-led strategy. Equally, if the timescale for the necessary rail improvements cannot be committed to with certainty, adopting the rail-led strategy would risk the potential that necessary transport mitigation would not be in place in time to serve the project and we would be obliged to revert to delivery by road without having invested in the necessary infrastructure to support that strategy (in particular the Sizewell link road or the FMF).

**5.8.2.** The rail-led strategy offers advantages for the bulk delivery of construction materials and we are continuing to pursue it closely with Network Rail. It would come at a cost, however, and we currently estimate that the rail-led strategy could involve an extra £80m of cost compared with the cost of providing the infrastructure for the road-led strategy.

## **Figure 5.1** Stage 3 freight management strategy options




At the time of this Stage 3 consultation, however, both strategies are being pursued and we are keen to know the views of consultees and affected parties on the merits of the alternative strategies. To assist with this, **Figure 2.2** in **Chapter 2** of this volume summarised the different physical components of the two alternative strategies and that figure (**Figure 5.1**) is repeated here.

**5.8.3.** In assessing the merits of either option, it is important to have regard to the physical impacts of the works described in **Figure 5.1**, the full details of which are assessed in the preliminary environmental information contained in **Volume 2** of this consultation.

**5.8.4.** **Table 6.2** in **Chapter 6** of this volume sets out a comparative analysis of the operational effects of the two strategies on the local road network. This shows that in many locations, the traffic effects of the two strategies would either be the same or very similar. The following **Table 5.3** identifies locations where the traffic effects are different in the two strategies.

**5.8.5.** To draw out the pros and cons of the alternative strategies more clearly, we have drawn up the following **Table 5.4** to capture principal points of comparison.

**5.8.6.** The effects on HGV movements are relatively complex. Overall, there is a reduction in HGV traffic under the rail-led strategy. As explained earlier in this chapter, average HGV movements would be 225 per day under the rail-led strategy and 375 under the road-led strategy, with the differences greater again in the busiest days. On the local network, however, account should also be taken of the fact that the road-led strategy includes the Sizewell link road, whereas in the rail-led strategy, the environmental effects are such that it is only necessary to bypass Theberton. As **Table 5.4** above shows, therefore, for some communities, the road-led strategy offers particular benefits.

## **Table 5.4** Pros and cons of the rail-led and road-led strategies

| Pros | Reason |
|---|---|
| **Rail-led** | |
| Lower HGV impacts especially on the A12 as more freight would be carried by rail. | Delivery of infrastructure by Network Rail in the required timescales is challenging and could cause delay to the operational date of the power station.<br>The cost of the rail-led strategy is also estimated to be around £80m higher than the road-led strategy. |
| The necessary infrastructure improvements would increase capacity on the East Suffolk line, which would create a legacy. | The rail proposals would bring their own environmental effects, particularly the adverse effects associated with the green rail route and the adverse effects, particularly noise and amenity loss, that would be associated with the other rail improvements along the East Suffolk line which would also not be required under a road-led scenario. The amenity effect would include the closure of 12 level crossings on the East Suffolk line with consequent diversion of footpaths. |
| Improves the local highway network at Theberton with a bypass that eliminates SZC traffic impacts on the village with consequential noise and air quality benefits to the village. | The bypass would have landscape and other local effects along the route of Theberton bypass but would also arise under a Sizewell link road built along the same route. |
| Lower traffic impacts on Lover's Lane as fewer HGVs travelling to/from Sizewell Halt/LEEIE. | The construction of the green rail route and its subsequent removal would have environmental effects. These include effects on the setting of Leiston Abbey, already impacted by the temporary construction area to the east, and potentially additional effects on great crested newts and bats. |
| **Road-led** | |
| **Pros** | **Reason** |
| Construction would be under EDF Energy's control and therefore there would be greater certainty of delivery to meet the project programme. | The road and freight proposals would impact on more land owners and bring their own environmental effects, particularly the landtake effects associated with the western 4.2km of the Sizewell link road, which would not be built under a rail-led scenario; these adverse effects could include effects on great crested newts and bats. |
| Sizewell link road removes SZC and some existing traffic from Theberton and Middleton Moor with consequential noise and air quality benefits to these villages. | Higher HGV impacts on the A12, except through Yoxford. |
| Yoxford traffic impacts are also significantly lower than in rail-led strategy, including the complete removal of all Sizewell C HGV and buses because of the Sizewell link road. | Higher HGV volume in road-led is forecast to result in more rerouting of existing traffic to B1069, B1078, A1120 and A143 as alternatives to the A12. |
| Improves the local highway network at Theberton and Middleton Moor. | Higher traffic impacts on Lover's Lane from additional HGV to/from halt or LEEIE. |
| Greater evacuation capacity. | No East Suffolk line legacy benefits (e.g. passing loop) which would improve reliability and capacity of the rail network. |
| More comprehensively responds to the call for direct mitigation for the communities along the B1122. | |
| Reduces impacts on B1122, B1119 and B1121 routes as some traffic chooses to use Sizewell link road instead. | |
| Fewer times per day that level crossings are closed to traffic (4 times rather than 10 times) – most significant at B1122 Abbey Road. | |

## 5.9. Next steps to inform the Transport Assessment

**5.9.1. Chapter 6** of this volume summarises the traffic modelling work that EDF Energy has undertaken prior to this Stage 3 consultation.

**5.9.2.** EDF Energy will continue discussions with SCC to review any updates to the traffic modelling, or specific analysis arising from it.

**5.9.3.** Following analysis of the Stage 3 consultation responses as well as further technical and environmental assessments, EDF Energy will decide whether to pursue the rail-led or road-led strategies. This will determine the modelling inputs, including freight mode split for the rail-led and road-led strategies in order to inform the resultant car, LGV and HGV traffic volumes that will be presented in a transport assessment for the application for development consent.

**5.9.4.** The programme of mitigation implementation will be considered and refined to manage the impacts of construction traffic on the highway network during the early years of the project's construction.

**5.9.5.** Bus service proposals from the park and ride sites, direct services for Ipswich, Lowestoft, the Leiston area and Saxmundham railway station would also be finalised in light of feedback from Stage 3 and further engagement with key stakeholders. The local cycling proposals will be developed to feed in to the CWTP. Any additional measures needed to encourage cycling to the park and ride sites, and from the Leiston area to the construction site, will be included in the application for development consent.

**5.9.6.** The subsequent application for development consent will include the final Transport Assessment, Environmental Statement section relating to transport, the TIMP, CWTP and the CTMP.

# 6. Traffic Modelling

## 6.1. Introduction

### a) Overview of traffic modelling

**6.1.1.** This chapter sets out the latest traffic modelling conducted to assess the traffic effects of the construction phase. It includes the latest estimates of the additional traffic that the project would generate during the period of peak construction, when the maximum number of construction workers would be on-site. This is anticipated to be in the middle of the construction phase, assumed to be around 2027 for the purposes of the transport modelling, and to last one to two years. For robustness, we have assumed that the maximum number of workers would coincide with the peak number of Heavy Goods Vehicle (HGV) movements.

**6.1.2.** To assess the likely traffic effects of the project, EDF Energy has developed a VISUM[1] traffic model of the local road network (refer to **Figure 6.1**). The development of a traffic model begins with the preparation of a 'base model' which aims to replicate the existing conditions on the local road network. A process of calibration and validation is undertaken so that the model gives a good reflection of observed traffic conditions.

**6.1.3.** In the second stage of the process, general traffic growth and traffic associated with specific 'committed developments' (major developments with planning permission but not yet built) are then added to the base traffic model, along with any known transport improvements associated with these or other schemes. The purpose of this stage in the process is to estimate the future conditions on the road network without the development (in this case Sizewell C). This is known as the 'reference case' model. A reference case model has been produced for two forecast years, to enable assessment of different phases of construction:

- 2022 – early years construction phase, which would comprise smaller construction workforce but no mitigation; and
- 2027 – peak construction period, which would comprise the peak construction workforce and the completed mitigation measures described in **Volume 2.**

**6.1.4.** The third stage of the process is then to add forecast traffic generated by the project, during both early years and peak construction periods, to the relevant 'reference case' model. These 'with development' models are then used to examine the likely effects of the development on the road network.

### b) Derivation of traffic flows

**6.1.5.** The process of deriving the daily traffic flows presented in this chapter requires, firstly, calculation of traffic inputs to the VISUM model for each of the seven modelled hours, in the form of origin-destination trip matrices. Traffic growth is initially applied to the existing car, Light Goods Vehicle (LGV) and HGV trips in the validated base year models, to produce the traffic demand for the future year reference case (without Sizewell C) scenarios (2022 and 2027).

**6.1.6.** The Sizewell C traffic demand is then calculated for each of the seven modelled hours, and added to the reference case demand to generate the 'with Sizewell C' strategies (i.e. 2027 rail-led and road-led, and 2022 early years).

**6.1.7.** Once the models have been run with this traffic demand, the two-way hourly traffic flows are extracted for the locations reported in **Figure 6.6.** The hourly two-way flows are then factored to produce 24-hour equivalent daily flows in each location, using a range of methods:

- existing (non-Sizewell C) traffic is factored using Annual Average Weekday Traffic (AAWT) calculations which have been based on a selection of local Automatic Traffic Counts (ATCs); and
- Sizewell C traffic is factored to 24-hour levels based on the demand calculated for each strategy.

**6.1.8.** This methodology provides a robust process for forecasting daily traffic flows in various scenarios, to enable assessment of the effects of Sizewell C during the different phases of construction which are reported in this chapter.

### c) Chapter structure

**6.1.9.** This chapter sets out the strategies that have been modelled and presents the effects of the Sizewell C proposals on the highway network. This chapter is structured as follows:

- **section 6.2** details the traffic conditions on the future highway network without the project so that the effects of Sizewell C's construction and operational traffic can be assessed;
- **section 6.3** sets out the inputs to the peak construction traffic modelling;
- **section 6.4** describes the assessment of the effects of construction traffic during the peak construction phase;

[1] VISUM is a widely used transport modelling platform developed by PTV VISION

- **section 6.5** sets out the inputs to the early years construction traffic modelling; and
- **section 6.6** describes the assessment of the effects of construction traffic during the early years construction phase.

## 6.2. 'Without Sizewell C' traffic modelling

**6.2.1.** The modelling work reported at the Stage 2 consultation was based on a forecast peak construction year of 2024. The current assumption in this Stage 3 consultation is that peak construction would occur around the year 2027, so the reference case and with development modelling has been updated to reflect this change in forecast year.

**6.2.2.** A VISUM traffic model has been developed for the purposes of assessing Sizewell C traffic effects. VISUM is an industry standard software package used for transport modelling and is widely used in transport studies. The study area and modelled network for the VISUM model has been agreed with Suffolk County Council (SCC) and remains the same as that shown at the Stage 2 consultation: it extends to Lowestoft to the north, Ipswich to the south and the A140 to the west. The geographic extent of the model is shown in **Figure 6.1.**

### a) Base traffic model

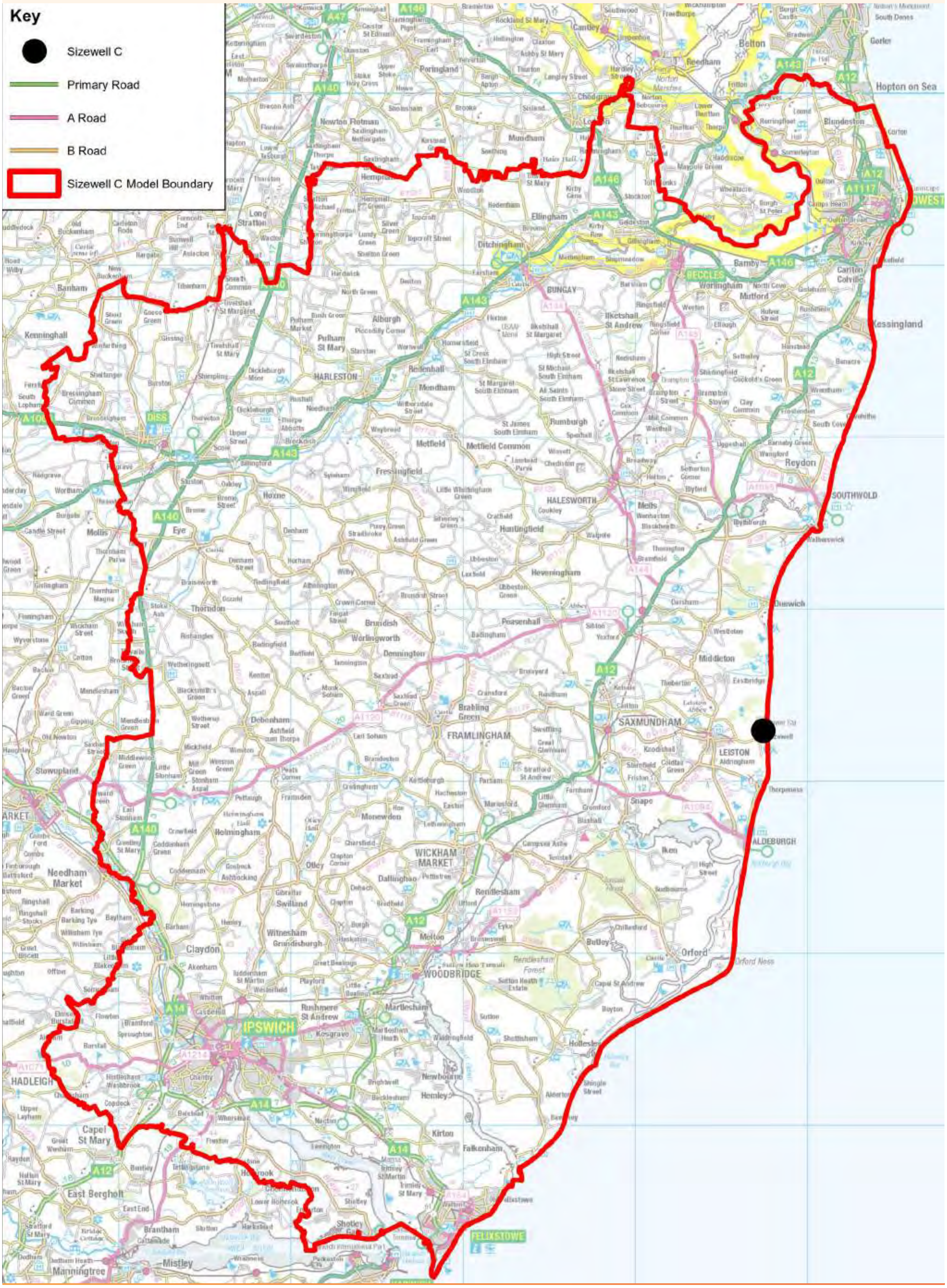
**6.2.3.** A VISUM base model was developed to represent 2015 traffic conditions and has been through a process of thorough review with SCC and their consultants. A detailed description of how the model was produced was provided at Stage 2.

### b) Reference case traffic model

**6.2.4.** EDF Energy has developed a reference case traffic model to predict future conditions on the local road network at the time of peak construction (currently assumed to be 2027), but without the addition of Sizewell C-related traffic.

**6.2.5.** This reference case model includes traffic growth arising from general economic development (in line with established Department for Transport (DfT) guidance in this area) and additional traffic associated with major developments. These major developments include new housing and commercial traffic relating to the Adastral Park development east of Ipswich and additional potential freight traffic associated with the expansion of Felixstowe Port. The specific developments that have been modelled explicitly in the 2027 reference case have been agreed with SCC.

**Figure 6.1** Geographic extent of the Sizewell C VISUM traffic model



**6.2.6.** In general, widespread increases in traffic are expected in the reference case due to traffic growth. However, the modelling conducted thus far does not suggest that future traffic growth up to the time of Sizewell C peak construction would lead to a significant change in traffic conditions across the local road network, or to material detrimental effects in the form of significant increases in journey times or deterioration in junction performance. The main exception to this relates to traffic conditions on the A12 in the area east of Ipswich and up to the Woodbridge area. In these areas, the reference case traffic model is suggesting the potential for some additional congestion and traffic delay during peak periods because of traffic growth and network modifications in this part of the A12. This is consistent with the reference case findings reported at Stage 2 representing 2024 traffic conditions.

**6.2.7.** Traffic flows on the A12 at Woodbridge are expected to increase to over 40,000 vehicles per day in the reference case (see **Table 6.2**), which leads to congestion in this area and subsequent displacement of existing traffic onto alternative routes. Whilst the construction of Sizewell C would add further traffic demand onto the A12, the conditions here would already be congested in the reference case without the introduction of highway improvements.

**6.2.8.** SCC has produced an outline business case for major improvements along sections of the A12, known as the Suffolk Energy Gateway scheme (SEGway) (Ref. 6.1). The strategic case sets out that SCC recognises congestion as an issue on single carriageway sections of the A12 close to Woodbridge and that it considers this could be resolved through largely online improvements.

**6.2.9.** In addition to the 2027 period, a 2022 reference case model has been produced to facilitate the assessment of Sizewell C traffic effects during the early years construction period. As with the 2027 forecast, specific developments that have been agreed with SCC have been modelled explicitly in the 2022 reference case, along with general traffic growth predictions in line with DfT guidance. In general, a similar forecast is shown in 2022 compared with 2027, in that future traffic growth up to the time of Sizewell C early years construction does not indicate a significant change in traffic conditions across the local road network, except for the A12 Woodbridge area which still shows a marked increase in congestion in 2022 compared with current levels, without the introduction of highway improvements.

### c) Modelled time periods

**6.2.10.** At the Stage 1 consultation, EDF Energy's initial traffic modelling had considered the weekday 15:00 to 16:00 hour period, as this time period would see high existing traffic flows coincide with relatively high flows relating to Sizewell C construction.

**6.2.11.** After the Stage 1 consultation, a more comprehensive programme of traffic modelling was progressed:

- 06:00 to 09:00 hours in the weekday morning period; and
- 15:00 to 19:00 hours in the weekday afternoon/evening period.

**6.2.12.** These seven weekday hourly periods, which have been agreed with SCC, cover all of the existing network peaks as well as periods when there are expected to be higher volumes of Sizewell C development-related traffic.

**6.2.13.** At the time of the Stage 2 consultation, only three of the seven hourly models had been produced and the modelling outputs were based on these hours:

- 08:00 to 09:00 hours;
- 15:00 to 16:00 hours; and
- 17:00 to 18:00 hours.

**6.2.14.** Since the Stage 2 consultation, the remaining four hourly periods have been completed so that the traffic effects reported in this document are based on derivation of daily flows from all seven modelled hours.

6.2.15. For robustness, all of the morning (06:00 to 09:00 hours) base traffic modelling has been developed using the average of Monday to Thursday morning traffic data. Analysis has indicated that these periods are consistently busier than Friday mornings. Conversely, analysis indicates that Friday afternoon and early evening traffic within the study area is consistently the busiest of the week, and higher than in any other neutral month weekday or weekend period. Consequently, the afternoon (15:00 to 17:00 hours) and early evening (17:00 to 19:00 hours) modelling has used Friday traffic data. **Figure 6.2** illustrates the day-to-day traffic flow variation across the modelled area.

6.2.16. Both highway network traffic flows, and those associated with Sizewell C construction, are lower at weekends than on weekdays during the "neutral months" of April – June and September – October that are used in traffic modelling. Therefore, effects and mitigation are assessed from the weekday modelling results. The variation of traffic flows during the Summer is described later in this chapter.

6.2.17. The combination of the use of these modelling time periods and data, along with traffic growth assumptions for the reference case model, means that the traffic model is reflecting the existing traffic volume on the network and the future traffic conditions which could apply by the time of Sizewell C construction.

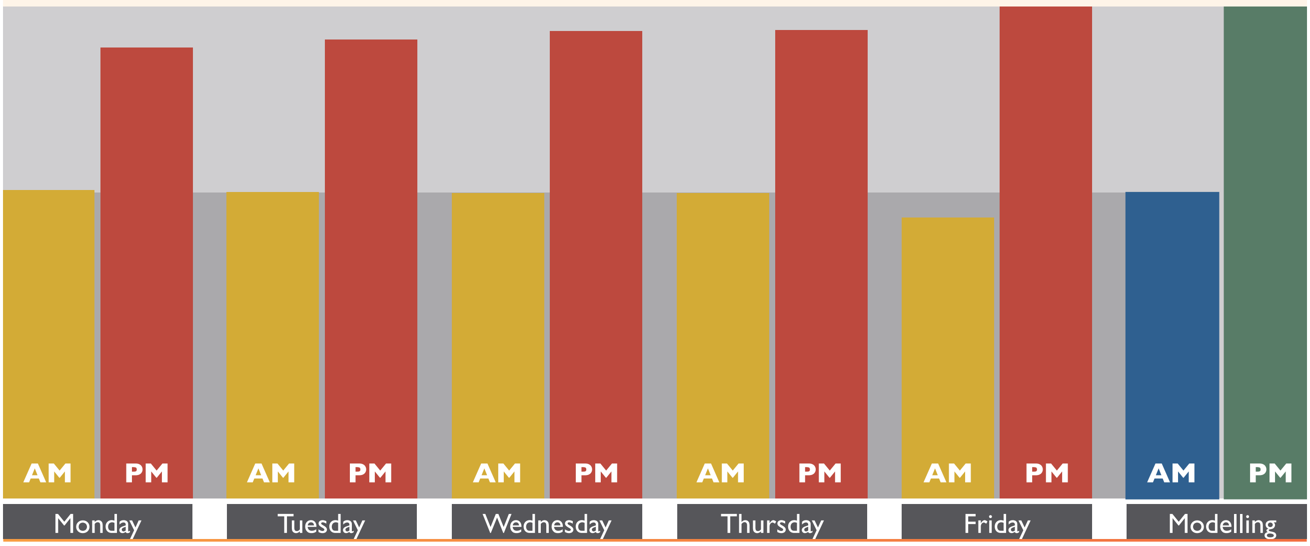
### d) Sizewell B outage

6.2.18. An 'outage' is performed periodically (typically over a six week period every 18 months) at Sizewell B, during which periods traffic flows in the area are higher than usual. So that the future year assessments are robust, trips generated by these periodic Sizewell B outages have been incorporated in all future year (reference case and with development) modelling scenarios. This is a robust assessment since there is no outage taking place for about 90% of the time and traffic flows would be lower than have been modelled during these periods.

6.2.19. In Spring 2016 a series of Manual Classified Count (MCC) and ATC traffic surveys was undertaken during 17-18 May when there was a Sizewell B outage and during 21-22 June when there was no Sizewell B outage. Car, LGV and HGV trips were derived, for each of the seven modelled hours, from this survey data and the trips were added to the reference case and with development traffic models. All traffic flows reported at this Stage 3 consultation reflect a robust future year assessment that includes Sizewell B outage.

6.2.20. The inclusion of the Sizewell B outage flows in the Stage 3 modelling means that the traffic volumes reported here are higher than reported at Stage 2. Most notably, outages increase the forecast traffic volumes at Westleton and Snape. Both experience significant increases in traffic flow during periods of Sizewell B outage (around 180 vehicles per day through Westleton and 260 vehicles through Snape, which are included in all forecast scenarios).

**Figure 6.2** Weekday traffic flow variations across study area



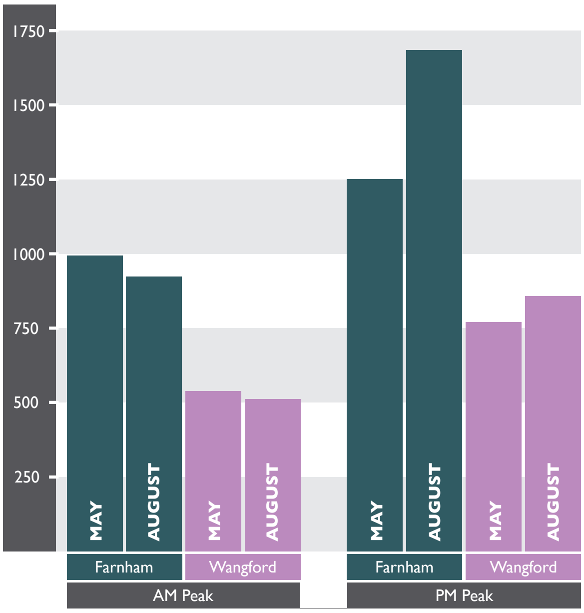
### e) Network seasonality

**6.2.21.** A number of responses to the Stage 1 and Stage 2 consultations raised the issue of the seasonality of the local road network. This was raised in the context of a concern that additional traffic during holiday periods, in particular the peak Summer period, would compound issues relating to the effects of Sizewell C construction traffic. This issue was particularly raised by those suggesting that a bypass was necessary to address the effects of existing and future traffic through the section of the A12 north of Wickham Market, running through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham.

**6.2.22.** Prior to the Stage 2 consultation, EDF Energy conducted an initial analysis of the current extent of seasonality of the road network covered by the VISUM traffic model, comparing data collected in May 2015 (which has been used in the development of the base traffic model) with August 2015 data. This analysis, which was reported during the Stage 2 consultation, indicated that:

- much of the road network covered by the VISUM model, including Ipswich, the A14 and other locations, exhibits no seasonality (i.e. daily traffic flows in August are broadly similar to those in May); and

**Figure 6.3** Morning (Monday to Thursday) and evening (Friday) weekday peak hour A12 flows during May and August at Farnham and Wangford

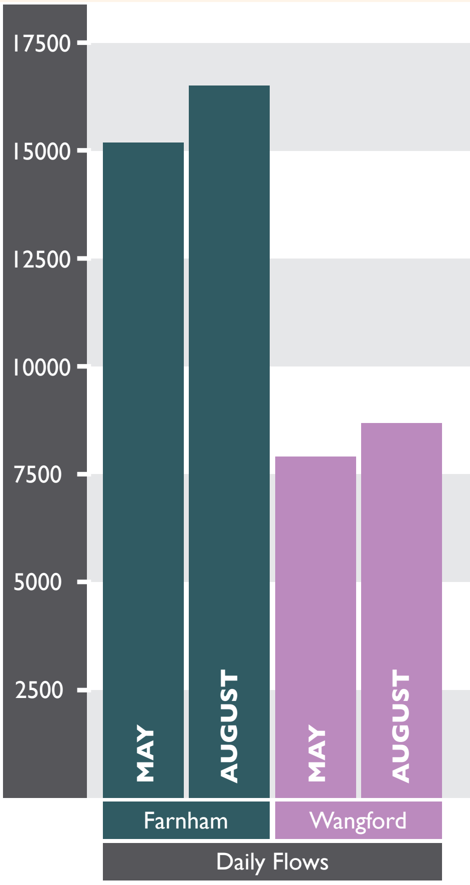



- during the morning peak, traffic flows across the VISUM modelled area, including on the A12, are lower in August than in May.

**6.2.23.** However, the analysis suggests that 07:00-19:00 weekday traffic flows on the A12 north of Woodbridge are typically around 10% higher in August than in May, and that average weekday PM peak period traffic flows on this part of the network are around 10% to 35% higher in August than in May, as **Figures 6.3** and **6.4** show. These trends are consistent with a higher volume of tourism-related traffic on the A12 in August.

**6.2.24.** The Sizewell C base and reference case traffic modelling for the PM periods (15:00 to 19:00) has been developed using Friday PM traffic flow data. Analysis has shown that this is the busiest weekday during May, as **Figure 6.2** shows. By comparison, only August Friday PM flows and Saturday late morning and early afternoon flows

**Figure 6.4** Monday to Friday 0700-1900 A12 flows during May and August at Farnham and Wangford



are higher than those used in the modelling. However, the number of construction workers on Fridays and Saturdays are lower than assumed in the modelling, due to the proposed working patterns which are unchanged from Stage 2. Typically, around 85% of the workforce would be present on any given Friday and around 50% on a Saturday, compared with the rest of the working week. In particular, as well as the much smaller construction workforce present on a Saturday, the late morning period when existing flows are higher in August is when the lowest levels of worker travel would be occurring, due to the working patterns.

**6.2.25.** The key purpose of the Sizewell C traffic modelling is to examine and assess the effects which would typically occur with the whole workforce present (Monday to Thursday) at peak construction, as opposed to any shorter term and time limited effects. This follows DfT Transport Analysis Guidance (TAG) advice (Ref. 6.2) that the assessment of highway traffic effects should be based on neutral periods, i.e. weekdays during neutral months, avoiding weekends and holiday periods. There is no recommendation to assess traffic effects during short-term or seasonal periods. Furthermore, the application for development consent relating to Hinkley Point C presented similar findings in terms of network seasonality, in that specific roads were shown to have slightly higher flows at certain times of the day during Summer months, but the development was not assessed with these increased existing flows.

**6.2.26.** EDF Energy recognises that there may be some existing seasonal effects on the A12 and at other locations that are not captured by the traffic modelling, however these short-term increases in existing traffic, on a Friday afternoon and during brief periods on a Saturday, would be offset by the lower volumes of Sizewell C workforce traffic present during these periods. Furthermore, the Sizewell C-related traffic flows reported at this Stage 3 consultation incorporate a larger construction workforce in combination with the peak number of HGV deliveries which in reality would be unlikely to coincide with the peak workforce. These robust construction traffic estimates are also applied to reference case flows that include Sizewell B outages, which only occur for about 10% of occasions.

**6.2.27.** When these factors are considered, the effects of Sizewell C construction traffic during the short-term seasonality of the A12 would not trigger a need for additional mitigation than that already proposed as part of this Stage 3 consultation.

**6.2.28.** Since the Stage 2 consultation, EDF Energy has further developed the base and reference case traffic modelling which has been used as the starting point for the assessment of the project's construction traffic effects in this Stage 3 consultation. The modelling work undertaken addresses:

- a wide geographic area, including all potentially affected parts of the road network;
- the busiest periods of the day and the busiest days of the week for Sizewell C traffic generation; and
- modelling which incorporates both general future traffic growth across the network and the specific traffic associated with major developments expected to come forward by the time of Sizewell C early years and peak construction phases.

**6.2.29.** EDF Energy has worked closely with SCC to ensure that there is a high level of agreement on the development of the transport modelling.

**6.2.30.** The following sections describe the assessments of Sizewell C traffic effects during the peak construction phase and the early years construction phase.

## 6.3. Traffic modelling of the Sizewell C peak construction phase

**6.3.1.** The current assumption in this Stage 3 consultation is that peak construction would occur around the year 2027. As stated in **Chapter 1** of this volume the peak construction workforce for Sizewell C is estimated to be 5,600 workers and a further 500 associated development operational workers. However, we have considered what the effects might be if there were to be a higher workforce. To do this from a transport perspective the modelling is based on a larger workforce of 7,900 construction workers and 600 associated development operational workers. It should be noted therefore that the actual effects of Sizewell C construction may be smaller than those reported here.

**6.3.2.** This section sets out the key input parameters which have been used to generate four assessments of Sizewell C construction traffic on weekdays at peak construction as follows:

- rail-led:
  - typical day
  - busiest day
- road-led:
  - typical day
  - busiest day

**6.3.3.** These have been referred to elsewhere in this section but, for ease of reference, are collated in **Table 6.1**. The only difference between the four assessments is the number of HGVs per day as indicated in **Table 6.1** and the level of mitigation on the B1122.

**Table 6.1** Main input parameters relating to Sizewell C peak construction traffic

| Issue | Input Parameter |
|---|---|
| Peak construction workforce assumption | 5,600 |
| Higher assessment construction workforce (basis for traffic modelling) | 7,900 |
| Associated development operational workers | 600 |
| Residential location of workforce | Based on Gravity Model |
| Working patterns of the construction workforce | Unchanged from Stage 2 |
| Size of development site accommodation campus | 2,400 on campus, plus 400 caravans on Land east of Eastlands Industrial Estate (LEEIE) (1.5 people per caravan so 600 workers) |
| Frequency of shuttle buses from LEEIE (caravan site) to main site | 12 buses from LEEIE to main site at 07:30, and returning at 17:00 |
| Frequency of park and ride buses | Three to nine buses from northern and southern park and ride sites per hour during staff changeover periods, hourly service outside staff changeover periods |
| Frequency of direct buses from Ipswich and Lowestoft | Half hourly during staff changeover periods, four to eight buses per hour from Leiston plus hourly shuttle bus from Saxmundham station |
| Total number of direct and park and ride buses | 644 movements per day |

| Issue | Input Parameter |
|---|---|
| Routing of park and ride and direct buses | **Rail-led:** A12, B1122 and Theberton bypass<br>**Road-led:** A12, B1122 (from north only) and Sizewell link road |
| No. of workers travelling by direct bus | 200 from Ipswich and Lowestoft, plus all residents in Leiston and Knodishall (a further 950 construction and associated development workers) |
| No. of workers travelling by rail | 100 |
| No. of workers walking / cycling / motorcycling to construction site or park and ride sites | No workers assumed to use these modes to give a robust assessment |
| Average level of car sharing – further explanation below | 1.1 workers per car for home based (HB) workers and 2 workers per car for non-home based (NHB) workers |
| Non-work trips – further explanation below | Included for all NHB workers (campus/caravan and off-site) |
| LGVs | 700 movements per day, of which 175 are to and from the postal consolidation facility at Wickham Market |
| Typical day – average number of HGVs per day at peak construction | **Rail-led:** 450 movements (225 deliveries)<br>**Road-led:** 750 movements (375 deliveries) |
| Busiest day – maximum number of HGVs per day | **Rail-led:** 900 movements (450 deliveries)<br>**Road-led:** 1500 movements (750 deliveries) |
| Routing of HGVs | **Rail-led:** A12, B1122 and Theberton bypass<br>**Road-led:** A12, B1122 (from north only) and Sizewell link road |
| Origin of HGVs | 85% from A12 south<br>15% from A12 north |
| HGVs from LEEIE to main construction site | **Rail-led:** 140 movements (70 deliveries)<br>**Road-led:** 280 movements (140 deliveries) |
| Freight management facility (FMF) | In **road-led** strategy only, all HGVs from the south stop at FMF adjacent to the A14 for around 1 hour, before moving on to the main construction site.<br>In **rail-led** strategy, all HGVs go straight to site. |
| 'Weekend effect' trips (a proportion of NHB workers likely to travel directly from their permanent home at the start of the week, and returning directly to their permanent home at the end of the week) – further explanation below | See point d) below. |

### a) HGV delivery profile

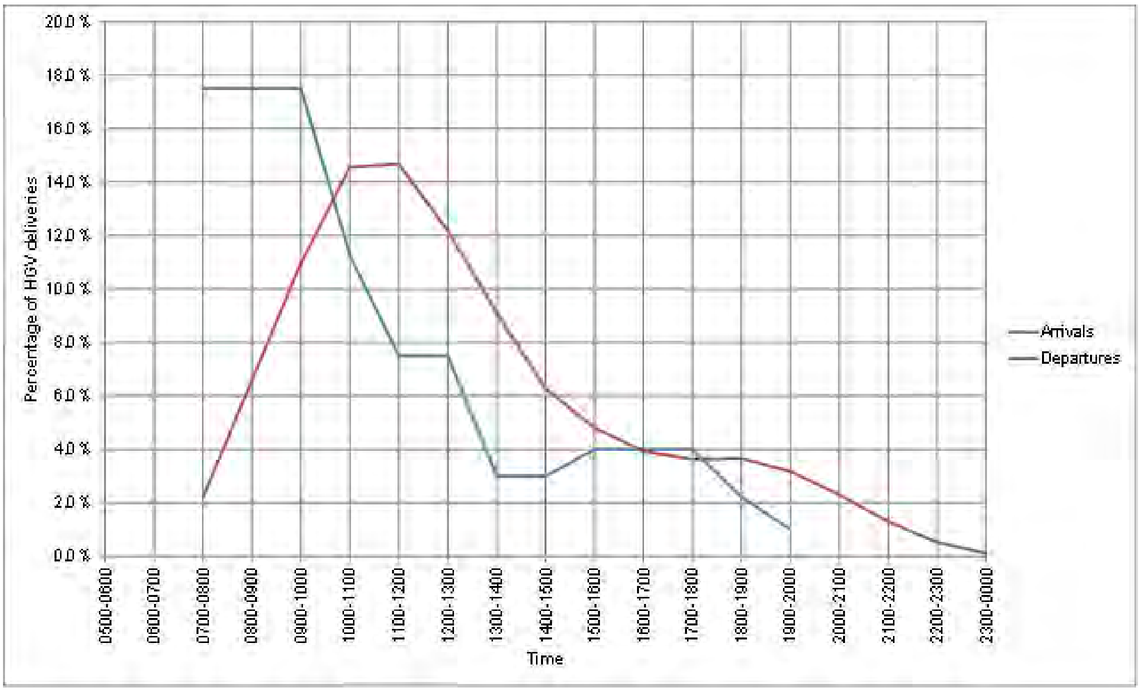
**6.3.4.** To minimise noise and environmental effects of HGV traffic during night-time hours (23:00 to 07:00) near the site, the proposals include HGV deliveries between the hours of 07:00 and 20:00, with more arriving in the morning than the afternoon. HGVs are anticipated to stop on-site for up to four hours. The daily profile of expected HGV arrivals and departures at the construction site is shown in **Figure 6.5.**

**6.3.5.** This profile is defined for the rail-led strategy. In the road-led strategy, with more daily HGV deliveries, there is potential for the hours of delivery to be extended beyond 20:00, though this would not alter the daily traffic flows reported in this chapter.

### b) Car sharing

**6.3.6.** The level of car sharing during the construction phase has been taken to be 1.1 (an average of 1.1 workers per car) for HB workers, i.e. those workers already resident in the area. This is the average taken from the DfT's National Travel Survey for journeys to work.

## **Figure 6.5** Proposed HGV delivery profile




**6.3.7.** Car sharing by NHB workers not resident in the accommodation campus has been taken to be 2 (an average of two workers per car). This reflects the much greater likelihood that these workers would be co-located in privately rented caravan or tourist accommodation and would have a greater propensity to car share.

**6.3.8.** These car sharing factors, which apply to workforce journeys to and from the park and ride and on-site car parks, are robust, particularly bearing in mind that car sharing during the construction of Sizewell B (combining both HB and NHB workers) was recorded as being above 2. The construction worker travel plan would encourage all those working on the site to share car journeys.

### c) Non-work related travel by NHB workers

**6.3.9.** In addition to daily travel to and from the main development site, some additional trips would be made on the local road network associated with non-work related leisure trips made by the construction workforce.

**6.3.10.** For HB workers already resident in the area, these trips are already counted within the existing baseline traffic flows. However, non-work related trips by NHB workers would add to traffic flows and these have been included in the traffic modelling of the effects of Sizewell C, based on national travel statistics relating to leisure related trips. This also takes into account proposed working patterns and that construction workers residing in the accommodation campus are likely to make fewer longer distance trips given the range of facilities that would be provided (refer to **Chapter 7** of this volume).

### d) Weekend travel by NHB workers

**6.3.11.** NHB workers, who would live in the local area temporarily during the construction phase, are anticipated to travel from and to their permanent homes at the beginning and end of the working week, although not every week as the construction workforce is proposed to operate in cycles. These trips have been taken to be single-occupancy, i.e. no car sharing is included in this element of the analysis. This is referred to as the 'weekend effect'.

**6.3.12.** The modelling allows for the effects of different shift cycles. Double shifts 1 and 2, and the night shift, operate on a four-week cycle. The single shift and office shift work on a six-week cycle. Within these cycles, there are longer weekends that result in the earlier departure of staff on Thursdays or Fridays, generally between 14:00 and 16:00. Furthermore, on a typical Monday a proportion of NHB workers would be expected to arrive from their permanent home rather than their temporary local home. The same would be expected in the opposite direction on a typical Friday. These journeys would also most likely be single-occupancy. All of these elements have been included in the modelling so that the resulting effects can be assessed.

**6.3.13.** A significantly lower number of staff would be on-site during weekends, which is reflected in the additional trips made by NHB workers travelling home for the weekend.

#### e) Visitors

**6.3.14.** In addition to the inputs in **Table 6.1**, the modelling and assessment includes daily visitors to the Sizewell C main development site and the proposed visitor centre.

**6.3.15.** It is assumed that there would be 200 daily visitors to the Sizewell B and C construction site and up to 800 daily visitors to the Sizewell C visitor centre, travelling in a combination of cars and larger vehicles (coaches and mini-buses). The number of visitors to the visitor centre is related to the potential capacity of the facility and the number of visitors to the centre which might occur on a particularly busy day. It is therefore a robust figure, particularly considering that on most days the number of visitors would be significantly lower. Most visitor trips are expected to take place outside of the main network peak periods.

#### f) Assessment basis

**6.3.16.** The inputs and assumptions set out in **Table 6.1** and used in the traffic modelling conducted for this Stage 3 consultation are the latest available, but may be subject to final refinements prior to submission of the application for development consent. EDF Energy considers the inputs used represent a sound basis for assessing potential Sizewell C traffic effects for the following reasons:

- Sizewell B outage flows are now included in the analysis, even though the outage only occurs for about six weeks every 18 months, i.e. less than 10% of the time;
- the analysis uses a higher workforce size, in excess of the central case expected by EDF Energy;
- the traffic modelling considers the peak period of Sizewell C construction and assumes that peaks in both workforce and freight related trips occur at the same time;
- the numbers assumed to travel by non-car modes (rail and direct buses) are modest and in practice it is considered that there could be scope for additional use of these modes;
- an assumption has been made that no construction workers would walk, cycle or motorcycle either to the main development site or to the park and ride facilities. In practice, this would occur to some degree, particularly from Leiston as workers living there would not get a site parking permit; and EDF Energy's travel plan measures would encourage walking and cycling where practical;
- the level of car sharing assumed is modest and significantly lower than that recorded during the construction of Sizewell B;
- the modelling has included all potential areas of additional traffic generated by the project during the construction phase, including the "weekend effect" and non-work trips from construction workers who are not already resident in the area; and
- the number of HGV deliveries per day is based on the assumption that only around 80% of the proposed number of trains may be achieved, in both rail-led and road-led strategies. If the full five trains per day (rail-led) or two trains per day (road-led) were achieved, the number of HGVs required per day would likely be lower.

**6.3.17.** Taking account of these considerations, EDF Energy's view is that during many periods of the construction phase, the actual level of traffic generated by the construction of Sizewell C would be lower than has been considered in the traffic modelling.

**6.3.18.** Outputs from the modelling work are presented in **section 6.4,** which sets out predicted traffic changes and effects of Sizewell C peak construction, together with mitigation proposals.

## 6.4. Peak construction traffic effects across the modelled area

**6.4.1.** The VISUM traffic model that is being used to assess Sizewell C traffic effects is a dynamic highway assignment model, which means that existing and development related traffic within the model can re-route to choose the best available routes, as a combination of distance and journey time, within the network (other than HGVs and buses which are assigned to fixed routes).

**6.4.2.** This means that flow changes within the traffic model on any given route are not a simple direct addition of Sizewell C traffic onto a fixed and unchanging future year traffic flow. Moreover, the traffic modelling conducted to date also suggests that an amount of non-Sizewell C traffic would potentially re-route, meaning that actual increases in vehicle flows could be lower than those shown in **Table 6.2**. Nonetheless, the potential scale of changes in daily traffic flows for the locations shown in **Figure 6.6** across the network is shown in **Table 6.2.**

## **Figure 6.6** Locations in **Tables 6.2** to **6.11** and **Tables 6.13** to **6.18**

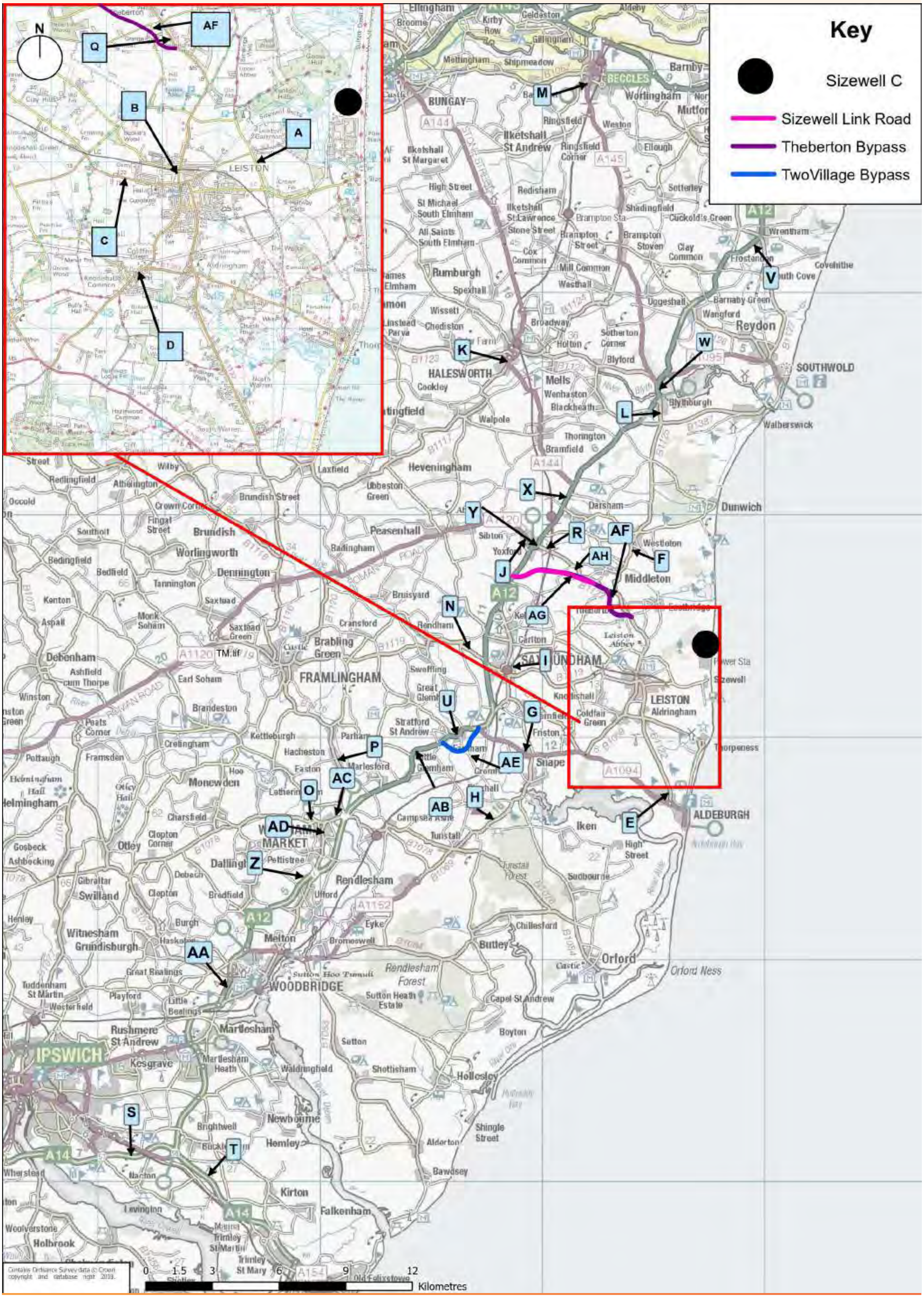


**Table 6.2** Peak period of Sizewell C construction – forecast daily 24 hour weekday traffic flows at a range of locations

| Location | Current average daily (24 hour) weekday all-vehicle traffic flows (based on 2015 data) | Estimated future weekday daily traffic flows without Sizewell C (reference case) | Rail-led | | | Road-led | | |
|---|---|---|---|---|---|---|---|---|
| | | | Estimated future daily weekday Sizewell C peak construction flows | Estimated future daily weekday traffic flows with Sizewell C peak construction traffic | Estimated percentage traffic increase from Sizewell C | Estimated future daily weekday Sizewell C peak construction flows | Estimated future daily weekday traffic flows with Sizewell C peak construction traffic | Estimated percentage traffic increase from Sizewell C |
| Lover's Lane, Leiston (location A) | 2,500 | 3,850 | 450 | 4,300 | 12% | 600 | 4,450 – 4,700 | 16%–22% |
| B1122 Abbey Road, central Leiston (location B) | 4,450 | 5,050 | 3,550 | 8,550 – 8,600 | 69%–70% | 3,300 | 8,300 – 8,350 | 64%–65% |
| B1119 Saxmundham Road, Leiston (location C) | 3,750 | 4,550 | 1,450 | 5,950 – 6,000 | 31%–32% | 1,250 | 5,450 – 5,800 | 20%–27% |
| B1069 Coldfair Green (location D) | 5,400 | 7,300 | 1,150 | 8,450 | 16% | 1,150 | 8,400 – 8,450 | 15%–16% |
| B1122 Aldeburgh (location E) | 3,300 | 4,250 | 700 | 4,900 – 4,950 | 15%–16% | 700 | 4,850 – 4,950 | 14%–16% |
| B1125 Westleton (location F) | 2,400 | 2,950 | 650 | 3,600 | 22% | 650 | 3,500 – 3,600 | 19%–22% |
| A1094 west of Snape Road (location G) | 7,550 | 9,100 | 250 | 9,350 – 9,450 | 3%–4% | 250 | 9,350 – 9,500 | 3%–4% |
| B1069 Tunstall (location H) | 3,050 | 4,400 | 650 | 4,900 – 5,050 | 11%–15% | 600 | 4,900 – 5,000 | 11%–14% |
| B1121 Saxmundham (location I) | 4,550 | 5,400 | 450 | 5,750 – 5,850 | 6%–8% | 250 | 5,200 – 5,650 | -4%–5% |
| A1120 Yoxford (location J) | 3,650 | 4,500 | 800 | 5,300 | 18% | 800 | 5,300 | 18% |
| A144 Halesworth (location K) | 6,900 | 8,250 | 600 | 8,800 – 8,850 | 7%–7% | 600 | 8,800 – 8,850 | 7%–7% |
| B1125 Blythburgh (location L) | 1,650 | 2,050 | 500 | 2,550 | 24% | 500 | 2,500 – 2,550 | 22%–24% |

| Location | Current average daily (24 hour) weekday all-vehicle traffic flows (based on 2015 data) | Estimated future weekday daily traffic flows without Sizewell C (reference case) | Rail-led | | | Road-led | | |
|---|---|---|---|---|---|---|---|---|
| | | | Estimated future daily weekday Sizewell C peak construction flows | Estimated future daily weekday traffic flows with Sizewell C peak construction traffic | Estimated percentage traffic increase from Sizewell C | Estimated future daily weekday Sizewell C peak construction flows | Estimated future daily weekday traffic flows with Sizewell C peak construction traffic | Estimated percentage traffic increase from Sizewell C |
| A145 Beccles (location M) | 15,350 | 17,100 | 400 | 17,500 | 2% | 400 | 17,500 | 2% |
| B1119 between Framlingham and A12 (location N) | 2,400 | 2,750 | 50 | 2,750 – 2,800 | 0%–2% | 100 | 2,800 – 2,850 | 2%–4% |
| B1078 Wickham Market (location O) | 3,850 | 6,200 | 1,050 | 7,250 | 17% | 1,050 | 7,250 – 7,350 | 17%–19% |
| B1116 Hacheston (location P) | 6,650 | 7,250 | 250 | 7,500 | 3% | 200 | 7,450 | 3% |
| B1122 Theberton (location Q) | 5,150 | 6,800 | 50 | 350 | -95% | 100 | 650 | -90% |
| B1122 east of Yoxford (location R) | 3,450 | 4,600 | 1,600 | 6,200 – 6,250 | 35%–36% | 1,000 | 5,300 – 5,600 | 15%–22% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 56,900 | 69,550 | 1,550 | 70,450 – 71,100 | 1%–2% | 1,850 | 70,800 – 71,400 | 2%–3% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 44,850 | 53,300 | 200 | 53,400 – 53,500 | 0%–0% | 200 | 53,500 | 0% |
| A12 Farnham (location U) | 18,900 | 21,400 | 0 | 300 | -99% | 0 | 300 | -99% |
| A12 Wrentham (location V) | 9,800 | 11,450 | 1,350 | 12,700 – 12,800 | 11%–12% | 1,350 | 12,700 – 12,800 | 11%–12% |
| A12 Blythburgh (location W) | 10,350 | 11,900 | 1,950 | 13,750 – 13,850 | 16%–16% | 2,000 | 13,750 – 13,900 | 16%–17% |

| Location | Current average daily (24 hour) weekday all-vehicle traffic flows (based on 2015 data) | Estimated future weekday daily traffic flows without Sizewell C (reference case) | Rail-led | | | Road-led | | |
|---|---|---|---|---|---|---|---|---|
| | | | Estimated future daily weekday Sizewell C peak construction flows | Estimated future daily weekday traffic flows with Sizewell C peak construction traffic | Estimated percentage traffic increase from Sizewell C | Estimated future daily weekday Sizewell C peak construction flows | Estimated future daily weekday traffic flows with Sizewell C peak construction traffic | Estimated percentage traffic increase from Sizewell C |
| A12 north of Darsham Park & Ride (location X) | 14,000 | 16,050 | 2,300 | 18,100 – 18,350 | 13%–14% | 2,350 | 18,200 – 18,400 | 13%–15% |
| A12 Yoxford (location Y) | 14,700 | 16,650 | 1,800 | 18,200 – 18,450 | 9%–11% | 1,100 | 16,900 – 17,750 | 2%–7% |
| A12 south of Wickham Market Park & Ride (location Z) | 24,550 | 27,000 | 2,850 | 29,500 – 29,850 | 9%–11% | 3,100 | 29,550 – 30,100 | 9%–11% |
| A12 Woodbridge (location AA) | 37,800 | 40,500 | 2,450 | 41,050 – 42,950 | 1%–6% | 2,700 | 40,900 – 43,200 | 1%–7% |
| A12 Marlesford (south of two village bypass) (location AB) | 18,800 | 21,450 | 1,850 | 23,150 – 23,300 | 8%–9% | 2,100 | 23,300 – 23,550 | 9%–10% |
| B1078 Wickham Market (east of B1438) (location AC) | 3,650 | 5,250 | 1,100 | 6,350 – 6,400 | 21%–22% | 1,100 | 6,350 – 6,500 | 21%–24% |
| B1438 High Street, Wickham Market (location AD) | 2,200 | 3,250 | 50 | 3,250 – 3,300 | 0%–2% | 50 | 3,250 – 3,300 | 0%–2% |
| Two village bypass (location AE) | - | - | 1,800 | 22,200 | - | 2,050 | 22,400 | - |
| Theberton bypass (location AF) | - | - | 2,300 | 8,850 | - | 2,750 | 9,650 | - |
| Sizewell link road east of A12 (location AG) | - | - | - | - | - | 1,150 | 2,300 | - |
| B1122 Middleton Moor (location AH) | 3,450 | 4,600 | 1,600 | 6,250 | 36% | 0 | 450 | -90% |

**6.4.3.** The 'without Sizewell C' traffic flows reported in this Stage 3 consultation are different to those reported at Stage 2, due to the following updates that have been made to the modelling:

- change in forecast year to 2027, i.e. an additional three years of traffic growth; and
- inclusion of Sizewell B outage traffic flows.

**6.4.4.** These elements also apply to the 'with Sizewell C' strategies, as well as the changes in project proposals that are described in **Table 6.1.**

**6.4.5.** As identified in **Table 6.2** the majority of locations would likely experience some re-routing of non-Sizewell C traffic, when the Sizewell C traffic is added. In the rail-led strategy, in most of these locations the re-routed traffic volume is small (less than 2% of daily flows) and would not be noticeable when spread over a whole day[2].

**6.4.6.** At the B1069 Tunstall (location H) the re-routing of non-Sizewell C traffic is slightly greater at 3.4% though this is still only 150 vehicles per day. This is due to some existing traffic previously travelling through Snape and Tunstall on this road to the A12 at Wickham Market now joining the A12 further north as a direct result of the two village bypass provision.

**6.4.7.** Where re-routing is reported, it is only possible to identify that the traffic increases would lie somewhere within the quoted range. In practice, only part of the traffic might re-route, or none at all. In cases where traffic is re-routing away from a particular route, if no such re-routing occurred it would increase effects to the upper end of the quoted range. In particular, the A12 at Woodbridge is shown to be already congested in the reference case, without the addition of Sizewell C traffic, which results in a more substantial level of potential re-routing away from this route with the project-related traffic included, at 1,900 vehicles per day or about 4.7% of the existing flow. The reference case conditions in this location are discussed in **section 6.2** of this chapter.

**6.4.8.** As reported in **Table 6.2**, under the road-led strategy the majority of locations are predicted to experience some potential re-routing of non-Sizewell C traffic and the volumes re-routed would be greater in more places than under the rail-led strategy. In most of these locations, the re-routing would not be noticeable as they are less than 5% of daily flows.

**6.4.9.** The following locations demonstrate a more substantial level of re-routing under the road-led strategy (greater than 5% of daily flows):

- Lover's Lane, Leiston (location A) – 6.5%;
- B1119 Saxmundham Road, Leiston (location C) – 7.7%;
- B1121 Saxmundham (location I) – 8.3%;
- B1122 east of Yoxford (location R) – 6.5%;
- A12 Yoxford (location Y) – 5.1%; and
- A12 Woodbridge (location AA) – 5.7%.

**6.4.10.** In the case of Lover's Lane, the re-routing results from trips attracted onto this route rather than diverting away from it. Some traffic previously travelling between the east of Leiston and the A12 via the town centre and the B1119, is modelled to be transferring onto the proposed Sizewell link road via Lover's Lane. The overall daily volumes however are still very low and would not create congestion issues or increase travel times in this area.

**6.4.11.** In Saxmundham, Westleton and Blythburgh, some traffic previously using these routes to access the Leiston area is transferring onto the proposed Sizewell link road accessed from the A12. Similarly, a small number of trips previously travelling between Aldeburgh and the northern A12 via Saxmundham is transferring onto the Sizewell link road. These re-routing traffic volumes are low at around 100 vehicles per day.

**6.4.12.** Congestion on the A12 at Woodbridge is causing around 150 vehicles per day to re-route through the B1078 at Wickham Market (location AC) to connect with the A12 further north of the congested area.

**6.4.13.** In the Yoxford area, around 300 vehicles per day are removed from the B1122 east of Yoxford (location R) and around 850 vehicles from the A12 through the village itself (location Y). This is mainly due to the proposed Sizewell link road removing the need for traffic accessing the B1122 from the A12 south of Yoxford, and vice versa, to travel through the A12/B1122 junction. The Sizewell link road would therefore provide a significant benefit for Yoxford.

**6.4.14.** Under both the rail-led and road-led strategies, the most notable effect is reported on the A12 at Woodbridge (location AA); where around 2,300 vehicles per day are affected. As indicated in **section 6.2** of this chapter, the Woodbridge stretch of the A12 already experiences congestion in the current situation and is likely to be

[2] Variation in daily traffic flow levels is usually in the region of ±5%

exacerbated in future years, even without the Sizewell C development, unless SCC put improvement measures in place.

**6.4.15.** Under both the rail-led and road-led strategies there are substantial reductions in traffic through the A12 at Farnham (and Stratford St. Andrew) and the B1122 at Theberton, due to the bypasses being proposed around these villages as part of the mitigation. The proposed bypasses and the improvements to the A12/B1122 junction provide a legacy benefit to the area, by taking traffic away from villages.

**6.4.16.** There are no locations where the increase in daily traffic volume generated by the project construction causes the road capacity to be exceeded. On the A12 at Woodbridge, road capacity is already exceeded in the reference case, without Sizewell C, and SCC have recognised the need for improvements here to mitigate the effects of general traffic growth on this road, and other roads that are affected by re-routing behaviour.

**6.4.17.** **Table 6.3** details the changes in weekday traffic flows during peak hours (rather than 24 hours as reported in **Table 6.2**) on the highway network arising from the peak period of Sizewell C construction as a percentage increase over the reference case.

## Table 6.3 Peak period of Sizewell C construction – peak hour percentage increases in weekday traffic flows at a range of locations

| Location | Rail-led | | Road-led | |
|---|---|---|---|---|
| | Percentage increase in traffic at peak Sizewell C construction in the weekday AM peak period (07:00-09:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday PM peak period (16:00-18:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday AM peak period (07:00-09:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday PM peak period (16:00-18:00) |
| Lover's Lane, Leiston (location A) | 10% | 12% | 18% | 24% |
| B1122 Abbey Road, central Leiston (location B) | 60% | 47% | 57% | 43% |
| B1119 Saxmundham Road, Leiston (location C) | 25% | 21% | 15% | 14% |
| B1069 Coldfair Green (location D) | 12% | 12% | 12% | 12% |
| B1122 Aldeburgh (location E) | 15% | 12% | 15% | 11% |
| B1125 Westleton (location F) | 12% | 16% | 7% | 14% |
| A1094 west of Snape Road (location G) | 5% | 4% | 6% | 4% |
| B1069 Tunstall (location H) | 8% | 3% | 10% | 3% |

[2]Variation in daily traffic flow levels is usually in the region of ±5%

| Location | Rail-led | | Road-led | |
|---|---|---|---|---|
| | Percentage increase in traffic at peak Sizewell C construction in the weekday AM peak period (07:00-09:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday PM peak period (16:00-18:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday AM peak period (07:00-09:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday PM peak period (16:00-18:00) |
| B1121 Saxmundham (location I) | 7% | 5% | -3% | -4% |
| A1120 Yoxford (location J) | 10% | 12% | 11% | 12% |
| A144 Halesworth (location K) | 5% | 3% | 5% | 4% |
| B1125 Blythburgh (location L) | 9% | 17% | 6% | 16% |
| A145 Beccles (location M) | 1% | 2% | 1% | 2% |
| B1119 between Framlingham and A12 (location N) | 1% | -1% | 1% | -1% |
| B1078 Wickham Market (location O) | 14% | 7% | 18% | 9% |
| B1116 Hacheston (location P) | 3% | 3% | 2% | 3% |
| B1122 Theberton (location Q) | -95% | -94% | -87% | -92% |
| B1122 east of Yoxford (location R) | 28% | 29% | 6% | 10% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | Less than 1% | Less than 1% | 1% | 1% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 0% | Less than 1% | Less than 1% | Less than 1% |
| A12 Farnham (location U) | -98% | -99% | -98% | -99% |
| A12 Wrentham (location V) | 8% | 3% | 8% | 3% |
| A12 Blythburgh (location W) | 10% | 8% | 10% | 8% |

| Location | Rail-led | | Road-led | |
|---|---|---|---|---|
| | Percentage increase in traffic at peak Sizewell C construction in the weekday AM peak period (07:00-09:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday PM peak period (16:00-18:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday AM peak period (07:00-09:00) | Percentage increase in traffic at peak Sizewell C construction in the weekday PM peak period (16:00-18:00) |
| A12 north of Darsham Park & Ride (location X) | 10% | 6% | 11% | 6% |
| A12 Yoxford (location Y) | 7% | 5% | -2% | -1% |
| A12 south of Wickham Market Park & Ride (location Z) | 6% | 5% | 6% | 5% |
| A12 Woodbridge (location AA) | -1% | -1% | -2% | -1% |
| A12 Marlesford (south of two village bypass) (location AB) | 6% | 6% | 6% | 6% |
| B1078 Wickham Market (east of B1438) (location AC) | 20% | 9% | 22% | 12% |
| B1438 High Street, Wickham Market (location AD) | -1% | 1% | 3% | 0% |
| Two village bypass (location AE) | - | - | - | - |
| Theberton bypass (location AF) | - | - | - | - |
| Sizewell link road east of A12 (location AG) | - | - | - | - |
| B1122 Middleton Moor (location AH) | 28% | 29% | -90% | -89% |

**6.4.18. Table 6.3** demonstrates that, for the same locations considered in **Table 6.2**, the scale of changes in traffic at network peak hours is generally similar or somewhat lower than overall daily changes in traffic flows. This is because non-Sizewell C traffic is higher at network peak hours and also reflects that, due to the working patterns and other features of the development, Sizewell C-related construction traffic is relatively well spread across the day.

**6.4.19. Table 6.4** shows the changes in HGV and bus movements across the highway network, on a typical day. The same figures are presented for a busiest day in **Table 6.5.**

**Table 6.4** Peak period of Sizewell C construction – changes in HGV and bus flows (typical day) at the locations identified in **Figure 6.6**

| Location | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | Sizewell C buses (rail-led) | Sizewell C rail-led HGV | With Sizewell C rail-led daily HGV and bus flow | % increase | Sizewell C buses (road-led) | Sizewell C road-led HGV | With Sizewell C road-led daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|---|---|---|---|
| Lover's Lane, Leiston (location A) | 80 | 90 | 20 | 140 | 250 | 178% | 20 | 280 | 400 | 344% |
| B1122 Abbey Road, central Leiston (location B) | 140 | 150 | 210 | 0 | 370 | 147% | 210 | 0 | 360 | 140% |
| B1119 Saxmundham Road, Leiston (location C) | 60 | 80 | 30 | 0 | 100 | 25% | 30 | 0 | 90 | 13% |
| B1069 Coldfair Green (location D) | 190 | 210 | 190 | 0 | 390 | 86% | 190 | 0 | 390 | 86% |
| B1122 Aldeburgh (location E) | 90 | 100 | 0 | 0 | 100 | 0% | 0 | 0 | 100 | 0% |
| B1125 Westleton (location F) | 80 | 80 | 0 | 0 | 80 | 0% | 0 | 0 | 80 | 0% |
| A1094 west of Snape Road (location G) | 180 | 200 | 0 | 0 | 210 | 5% | 0 | 0 | 210 | 5% |
| B1069 Tunstall (location H) | 150 | 160 | 0 | 0 | 160 | 0% | 0 | 0 | 160 | 0% |
| B1121 Saxmundham (location I) | 50 | 60 | 0 | 0 | 60 | 0% | 0 | 0 | 60 | 0% |
| A1120 Yoxford (location J) | 180 | 200 | 0 | 0 | 200 | 0% | 0 | 0 | 200 | 0% |
| A144 Halesworth (location K) | 240 | 270 | 0 | 0 | 270 | 0% | 0 | 0 | 270 | 0% |
| B1125 Blythburgh (location L) | 60 | 60 | 0 | 0 | 60 | 0% | 0 | 0 | 60 | 0% |
| A145 Beccles (location M) | 440 | 490 | 0 | 50 | 540 | 10% | 0 | 80 | 570 | 16% |
| B1119 between Framlingham and A12 (location N) | 30 | 30 | 0 | 0 | 30 | 0% | 0 | 0 | 30 | 0% |
| B1078 Wickham Market (location O) | 160 | 190 | 0 | 0 | 190 | 0% | 0 | 0 | 190 | 0% |
| B1116 Hacheston (location P) | 70 | 80 | 0 | 0 | 80 | 0% | 0 | 0 | 80 | 0% |
| B1122 Theberton (location Q) | 210 | 230 | 0 | 0 | 0 | -100% | 0 | 0 | 0 | -100% |

| Location | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | Sizewell C buses (rail-led) | Sizewell C rail-led HGV | With Sizewell C rail-led daily HGV and bus flow | % increase | Sizewell C buses (road-led) | Sizewell C road-led HGV | With Sizewell C road-led daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|---|---|---|---|
| B1122 east of Yoxford (location R) | 170 | 180 | 450 | 450 | 1,080 | 500% | 230 | 110 | 530 | 194% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 8,860 | 10,880 | 10 | 300 | 11,200 | 3% | 10 | 610 | 11,500 | 6% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 7,190 | 9,150 | 0 | 50 | 9,190 | 0% | 0 | 80 | 9,220 | 1% |
| A12 Farnham (location U) | 910 | 1,000 | 0 | 0 | 10 | -99% | 0 | 0 | 10 | -99% |
| A12 Wrentham (location V) | 430 | 480 | 40 | 20 | 540 | 13% | 40 | 40 | 550 | 15% |
| A12 Blythburgh (location W) | 650 | 720 | 40 | 70 | 820 | 14% | 40 | 110 | 860 | 19% |
| A12 north of Darsham Park & Ride (location X) | 820 | 920 | 40 | 70 | 1,020 | 11% | 40 | 110 | 1,060 | 15% |
| A12 Yoxford (location Y) | 840 | 930 | 220 | 380 | 1,520 | 63% | 0 | 0 | 910 | -2% |
| A12 south of Wickham Market Park & Ride (location Z) | 1,180 | 1,270 | 20 | 380 | 1,660 | 31% | 20 | 640 | 1,910 | 50% |
| A12 Woodbridge (location AA) | 1,070 | 1,210 | 20 | 380 | 1,590 | 31% | 20 | 640 | 1,840 | 52% |
| A12 Marlesford (south of two village bypass) (location AB) | 900 | 990 | 220 | 380 | 1,580 | 60% | 220 | 640 | 1,830 | 85% |
| B1078 Wickham Market (east of B1438) (location AC) | 170 | 200 | 0 | 0 | 200 | 0% | 0 | 0 | 200 | 0% |
| B1438 High Street, Wickham Market (location AD) | 10 | 10 | 0 | 0 | 10 | 0% | 0 | 0 | 10 | 0% |
| Two village bypass (location AE) | - | - | 220 | 380 | 1,550 | - | 220 | 640 | 1,810 | - |
| Theberton bypass (location AF) | - | - | 450 | 450 | 1,120 | - | 450 | 750 | 1,430 | - |
| Sizewell link road east of A12 (location AG) | - | - | - | - | - | - | 220 | 640 | 980 | - |
| B1122 Middleton Moor (location AH) | 170 | 180 | 450 | 450 | 1,050 | 483% | 0 | 0 | 30 | -83% |

**Table 6.5:** Peak period of Sizewell C construction – changes in HGV and bus flows (busiest day) at the locations identified in **Figure 6.6**

| Location | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | Sizewell C buses (rail-led) | Sizewell C rail-led HGV | With Sizewell C rail-led daily HGV and bus flow | % increase | Sizewell C buses (road-led) | Sizewell C road-led HGV | With Sizewell C road-led daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|---|---|---|---|
| Lover's Lane, Leiston (location A) | 80 | 90 | 20 | 140 | 250 | 178% | 20 | 280 | 400 | 344% |
| B1122 Abbey Road, central Leiston (location B) | 140 | 150 | 210 | 0 | 370 | 147% | 210 | 0 | 360 | 140% |
| B1119 Saxmundham Road, Leiston (location C) | 60 | 80 | 30 | 0 | 100 | 25% | 30 | 0 | 90 | 13% |
| B1069 Coldfair Green (location D) | 190 | 210 | 190 | 0 | 390 | 86% | 190 | 0 | 390 | 86% |
| B1122 Aldeburgh (location E) | 90 | 100 | 0 | 0 | 100 | 0% | 0 | 0 | 100 | 0% |
| B1125 Westleton (location F) | 80 | 80 | 0 | 0 | 80 | 0% | 0 | 0 | 80 | 0% |
| A1094 west of Snape Road (location G) | 180 | 200 | 0 | 0 | 210 | 5% | 0 | 0 | 210 | 5% |
| B1069 Tunstall (location H) | 150 | 160 | 0 | 0 | 160 | 0% | 0 | 0 | 160 | 0% |
| B1121 Saxmundham (location I) | 50 | 60 | 0 | 0 | 60 | 0% | 0 | 0 | 60 | 0% |
| A1120 Yoxford (location J) | 180 | 200 | 0 | 0 | 200 | 0% | 0 | 0 | 200 | 0% |
| A144 Halesworth (location K) | 240 | 270 | 0 | 0 | 270 | 0% | 0 | 0 | 270 | 0% |
| B1125 Blythburgh (location L) | 60 | 60 | 0 | 0 | 60 | 0% | 0 | 0 | 60 | 0% |
| A145 Beccles (location M) | 440 | 490 | 0 | 90 | 580 | 18% | 0 | 150 | 640 | 31% |
| B1119 between Framlingham and A12 (location N) | 30 | 30 | 0 | 0 | 30 | 0% | 0 | 0 | 30 | 0% |
| B1078 Wickham Market (location O) | 160 | 190 | 0 | 0 | 190 | 0% | 0 | 0 | 190 | 0% |
| B1116 Hacheston (location P) | 70 | 80 | 0 | 0 | 80 | 0% | 0 | 0 | 80 | 0% |
| B1122 Theberton (location Q) | 210 | 230 | 0 | 0 | 0 | -100% | 0 | 0 | 0 | -100% |
| B1122 east of Yoxford (location R) | 170 | 180 | 450 | 900 | 1,530 | 750% | 230 | 230 | 640 | 256% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 8,860 | 10,880 | 10 | 610 | 11,500 | 6% | 10 | 1,220 | 12,110 | 11% |

| Location | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | Sizewell C buses (rail-led) | Sizewell C rail-led HGV | With Sizewell C rail-led daily HGV and bus flow | % increase | Sizewell C buses (road-led) | Sizewell C road-led HGV | With Sizewell C road-led daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|---|---|---|---|
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 7,190 | 9,150 | 0 | 90 | 9,240 | 1% | 0 | 150 | 9,300 | 2% |
| A12 Farnham (location U) | 910 | 1,000 | 0 | 0 | 10 | -99% | 0 | 0 | 10 | -99% |
| A12 Wrentham (location V) | 430 | 480 | 40 | 50 | 560 | 17% | 40 | 80 | 590 | 23% |
| A12 Blythburgh (location W) | 650 | 720 | 40 | 140 | 880 | 22% | 40 | 230 | 970 | 35% |
| A12 north of Darsham Park & Ride (location X) | 820 | 920 | 40 | 140 | 1,080 | 17% | 40 | 230 | 1,170 | 27% |
| A12 Yoxford (location Y) | 840 | 930 | 220 | 770 | 1,900 | 104% | 0 | 0 | 910 | -2% |
| A12 south of Wickham Market Park & Ride (location Z) | 1,180 | 1,270 | 20 | 770 | 2,030 | 60% | 20 | 1,280 | 2,540 | 100% |
| A12 Woodbridge (location AA) | 1,070 | 1,210 | 20 | 770 | 1,950 | 61% | 20 | 1,280 | 2,450 | 102% |
| A12 Marlesford (south of two village bypass) (location AB) | 900 | 990 | 220 | 770 | 1,950 | 97% | 220 | 1,280 | 2,460 | 148% |
| B1078 Wickham Market (east of B1438) (location AC) | 170 | 200 | 0 | 0 | 200 | 0% | 0 | 0 | 200 | 0% |
| B1438 High Street, Wickham Market (location AD) | 10 | 10 | 0 | 0 | 10 | 0% | 0 | 0 | 10 | 0% |
| Two village bypass (location AE) | - | - | 220 | 770 | 1,930 | - | 220 | 1,280 | 2,440 | - |
| Theberton bypass (location AF) | - | - | 450 | 900 | 1,570 | - | 450 | 1,500 | 2,180 | - |
| Sizewell link road east of A12 (location AG) | - | - | - | - | - | - | 220 | 1,280 | 1,620 | - |
| B1122 Middleton Moor (location AH) | 170 | 180 | 450 | 900 | 1,500 | 733% | 0 | 0 | 30 | -83% |

**6.4.20.** As explained previously in this chapter, HGVs serving the Sizewell C construction site would be restricted to using the A12 and the B1122/Theberton bypass under the rail-led strategy, or the Sizewell link road under the road-led strategy. Near the site, the only other road carrying Sizewell HGVs is Lover's Lane, as this route provides access from the LEEIE to the secondary site entrance.

**6.4.21.** Under both rail-led and road-led strategies, the two largest proportionate increases in HGV and bus flow occur on Lover's Lane (location A), which carries the LEEIE HGVs along with buses from the caravan site, and the B1122 east of Yoxford (location R), which carries the bulk of the Sizewell HGV and bus movements. Under rail-led, all HGVs would use this section of the B1122, before reaching the Theberton bypass. Under road-led however, HGVs and buses from the south would use the Sizewell link road instead and therefore the effect on this part of the B1122 would be lower. Under the road-led strategy there is also a substantial reduction in HGV and bus flows through the village of Middleton Moor as a result of the Sizewell link road.

**6.4.22.** In some locations, such as B1122 Abbey Road in central Leiston (location B) and B1069 Coldfair Green (location D), the relative increase in bus flows is substantial but this is from a low base level, and would not cause the road capacity to be exceeded. The B1122/Mill Street improvement would be in place by the very early stages of construction.

**6.4.23.** Most locations which show a high relative increase in HGV/bus volumes are those situated on the A12, for example at Yoxford (location Y, only under the rail-led strategy), south of Wickham Market (location Z), Woodbridge (location AA) and Marlesford (location AB). Under the road-led strategy, these increases are significantly higher than rail-led, except for Yoxford due to the proposed Sizewell link road which removes many of these trips. As indicated in **Table 6.2**, the total daily traffic volumes are unlikely to exceed the road capacity in any of these locations, except potentially at Woodbridge which is already congested in the reference case, as described in **section 6.2** of this chapter.

**6.4.24.** EDF Energy provides a commentary below on the predicted traffic effects at the B1122, A12 and elsewhere. The daily, peak hour and HGV/bus traffic flow changes from **Tables 6.2** to **6.5** are presented together for clarity in the following **Tables 6.6** to **6.11.** For each location, the effects on noise, air quality and other environmental aspects are also considered and these are set out in the preliminary environmental information (PEI) chapters in **Volume 2.**

### a) Traffic increases on the B1122

**6.4.25.** At the Stage 2 consultation, EDF Energy proposed that the B1122 would be the designated HGV route for traffic between the A12 and the Sizewell C construction site. The B1122 was the approved HGV route during the construction of Sizewell B. It avoids vehicles having to travel through Leiston, Saxmundham and most other local towns and villages. The B1122 would also be the route taken by the park and ride buses, and some cars and direct buses.

**6.4.26.** The Stage 2 consultation reported that there could be substantial increases in traffic flows along the B1122 during the Sizewell C peak construction phase. Following feedback received from this stage, EDF Energy has investigated potential mitigation measures and as part of the revised proposals, two alternative bypass proposals are included, which are set out in **Chapter 10** and **Chapter 11** of this volume but can be summarised as follows:

- Rail-led: Theberton bypass
  - bypassing Theberton and connecting with the B1122 to the east and west of Theberton.
- Road-led: Sizewell link road
  - bypassing Theberton and Middleton Moor, and connecting with the A12 to the south of Yoxford.

**6.4.27.** Because of the mitigation proposed on the B1122, the effects of project-related traffic are largely removed at Theberton, along with a significant proportion of existing through-traffic. Under the road-led strategy traffic flows are also significantly reduced at Middleton Moor. The scale of additional traffic on the B1122, and the alternative routes offered by the proposed mitigation, at peak construction is detailed in **Tables 6.6** and **6.7.**

**Table 6.6:** Peak period of Sizewell C construction – Changes in daily, peak hour and HGV and bus flows (rail-led strategy) at the B1122 locations identified in **Figure 6.6**

| Location | Current weekday traffic flows | Pre-Sizewell C week-day traffic flows | Sizewell C weekday peak construction traf-fic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1122 Abbey Road, central Leiston (location B) | 4,450 | 5,050 | 3,550 | 8,550 – 8,600 | 69% - 70% | 60% | 47% | 140 | 150 | 370 | 147% | 370 | 147% |
| B1122 Aldeburgh (location E) | 3,300 | 4,250 | 700 | 4,900 – 4,950 | 15% - 16% | 15% | 12% | 90 | 100 | 100 | 0% | 100 | 0% |
| B1122 Theberton (location Q) | 5,150 | 6,800 | 50 | 350 | -95% | -95% | -94% | 210 | 230 | 0 | -100% | 0 | -100% |
| B1122 east of Yoxford (location R) | 3,450 | 4,600 | 1,600 | 6,200 – 6,250 | 35% - 36% | 28% | 29% | 170 | 180 | 1,080 | 500% | 1,530 | 750% |
| Theberton bypass (location AF) | - | - | 2,300 | 8,850 | - | - | - | - | - | 1,120 | - | 1,570 | - |
| B1122 Mid-dleton Moor (location AH) | 3,450 | 4,600 | 1,600 | 6,250 | 36% | 28% | 29% | 170 | 180 | 1,050 | 483% | 1,500 | 733% |

**Table 6.7:** Peak period of Sizewell C construction – Changes in daily, peak hour and HGV and bus flows (road-led strategy) at the B1122 locations identified in **Figure 6.6**

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C weekday peak construction traffic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1122 Abbey Road, central Leiston (location B) | 4,450 | 5,050 | 3,300 | 8,300 – 8,350 | 64%–65% | 57% | 43% | 140 | 150 | 360 | 140% | 360 | 140% |
| B1122 Aldeburgh (location E) | 3,300 | 4,250 | 700 | 4,850 – 4,950 | 14%–16% | 15% | 11% | 90 | 100 | 100 | 0% | 100 | 0% |
| B1122 Theberton (location Q) | 5,150 | 6,800 | 100 | 650 | -90% | -87% | -92% | 210 | 230 | 0 | -100% | 0 | -100% |
| B1122 east of Yoxford (location R) | 3,450 | 4,600 | 1,000 | 5,300 – 5,600 | 15%–22% | 6% | 10% | 170 | 180 | 530 | 194% | 640 | 256% |
| Theberton bypass (location AF) | - | - | 2,750 | 9,650 | - | - | - | - | - | 1,430 | - | 2,180 | - |
| Sizewell link road east of A12 (location AG) | - | - | 1,150 | 2,300 | - | - | - | - | - | 980 | - | 1,620 | - |
| B1122 Middleton Moor (location AH) | 3,450 | 4,600 | 0 | 450 | -90% | -90% | -89% | 170 | 180 | 30 | -83% | 30 | -83% |

**6.4.28.** Current weekday all-vehicle daily traffic flows on the section of the B1122 between the junction with the A12 east of Yoxford and the Sizewell C construction site are between around 3,450 and 5,150 vehicle movements per day. Flows at the higher end of this range are more characteristic of the section south-east of the B1122/B1125 junction and through Theberton. Future flows by the time of Sizewell C peak construction (but without Sizewell C-related traffic) are predicted to rise to between around 4,600 and 6,800 vehicle movements per day. EDF Energy's analysis shows that Sizewell C traffic at peak construction could add approximately a further 1,600 vehicles at the western end of B1122, east of Yoxford, with the Theberton bypass under the rail-led strategy, but this would reduce to around 1,000 vehicles with the full Sizewell link road under the road-led strategy. Daily traffic flows on the B1122 at Theberton would reduce by 90-95% under both strategies, and under the road-led strategy traffic flows at Middleton Moor would also reduce by 90%.

**6.4.29.** The modelling work shows that all existing through traffic and Sizewell C HGVs, park and ride and direct buses to and from the south serving the construction site use the A12 and Sizewell link road or Theberton bypass. Traffic from the north would use the A12/B1122 roundabout and the B1122 until reaching the Sizewell link road to the west of Middleton Moor under the road-led strategies. Under the rail-led strategy, this traffic would continue on the B1122 until reaching the Theberton bypass.

**6.4.30.** At B1122 Abbey Road in Leiston, flows increase significantly from a low existing level but the road capacity would not be exceeded.

**6.4.31.** Traffic increases at the B1122 in Aldeburgh are small and are unlikely to cause any congestion, delays or significant environmental effects.

**6.4.32.** EDF Energy's proposals for the B1122 are set out in **Chapter 10** of this volume for the road-led strategy and **Chapter 11** of this volume for the rail-led strategy.

### b) Traffic increases on the A12

**6.4.33.** **Tables 6.8** and **6.9** summarise the daily, peak hour and HGV and bus flow changes on the A12, and the alternative routes offered by the proposed mitigation, at various locations.

**Table 6.8** Peak period of Sizewell C construction – changes in daily, peak hour and HGV and bus flows (rail-led strategy) at the A12 locations identified in **Figure 6.6**

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C weekday peak construction traffic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A12 Farnham (location U) | 18,900 | 21,400 | 0 | 300 | -99% | -98% | -99% | 910 | 1,000 | 10 | -99% | 10 | -99% |
| A12 Wrentham (location V) | 9,800 | 11,450 | 1,350 | 12,700 – 12,800 | 11%–12% | 8% | 3% | 430 | 480 | 540 | 13% | 560 | 17% |
| A12 Blythburgh (location W) | 10,350 | 11,900 | 1,950 | 13,750 – 13,850 | 16%–16% | 10% | 8% | 650 | 720 | 820 | 14% | 880 | 22% |
| A12 north of Darsham Park & Ride (location X) | 14,000 | 16,050 | 2,300 | 18,100 – 18,350 | 13%–14% | 10% | 6% | 820 | 920 | 1,020 | 11% | 1,080 | 17% |
| A12 Yoxford (location Y) | 14,700 | 16,650 | 1,800 | 18,200 – 18,450 | 9%–11% | 7% | 5% | 840 | 930 | 1,520 | 63% | 1,900 | 104% |

| Location | Current weekday traffic flows | Pre-Sizewell C week-day traffic flows | Sizewell C weekday peak construction traf-fic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A12 south of Wickham Market Park & Ride (location Z) | 24,550 | 27,000 | 2,850 | 29,500 – 29,850 | 9%–11% | 6% | 5% | 1,180 | 1,270 | 1,660 | 31% | 2,030 | 60% |
| A12 Wood-bridge (location AA) | 37,800 | 40,500 | 2,450 | 41,050 – 42,950 | 1%–6% | -1% | -1% | 1,070 | 1,210 | 1,590 | 31% | 1,950 | 61% |
| A12 Marlesford (south of two village bypass) (location AB) | 18,800 | 21,450 | 1,850 | 23,150 – 23,300 | 8%–9% | 6% | 6% | 900 | 990 | 1,580 | 60% | 1,950 | 97% |
| Two village bypass (location AE) | - | - | 1,800 | 22,200 | - | - | - | - | - | 1,550 | - | 1,930 | - |

**Table 6.9** Peak period of Sizewell C construction – changes in daily, peak hour and HGV and bus flows (road-led strategy) at the A12 locations identified in **Figure 6.6**

| Location | Current weekday traffic flows | Pre-Sizewell C week-day traffic flows | Sizewell C weekday peak construction traf-fic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A12 Farnham (location U) | 18,900 | 21,400 | 0 | 300 | -99% | -98% | -99% | 910 | 1,000 | 10 | -99% | 10 | -99% |
| A12 Wrentham (location V) | 9,800 | 11,450 | 1,350 | 12,700 – 12,800 | 11%– 12% | 8% | 3% | 430 | 480 | 550 | 15% | 590 | 23% |
| A12 Blythburgh (location W) | 10,350 | 11,900 | 2,000 | 13,750 – 13,900 | 16%– 17% | 10% | 8% | 650 | 720 | 860 | 19% | 970 | 35% |
| A12 north of Darsham Park & Ride (location X) | 14,000 | 16,050 | 2,350 | 18,200 – 18,400 | 13%– 15% | 11% | 6% | 820 | 920 | 1,060 | 15% | 1,170 | 27% |
| A12 Yoxford (location Y) | 14,700 | 16,650 | 1,100 | 16,900 – 17,750 | 2%– 7% | -2% | -1% | 840 | 930 | 910 | -2% | 910 | -2% |
| A12 south of Wickham Market Park & Ride (location Z) | 24,550 | 27,000 | 3,100 | 29,550 – 30,100 | 9%– 11% | 6% | 5% | 1,180 | 1,270 | 1,910 | 50% | 2,540 | 100% |
| A12 Woodbridge (location AA) | 37,800 | 40,500 | 2,700 | 40,900 – 43,200 | 1%– 7% | -2% | -1% | 1,070 | 1,210 | 1,840 | 52% | 2,450 | 102% |
| A12 Marles-ford (south of two village bypass) (location AB) | 18,800 | 21,450 | 2,100 | 23,300 – 23,550 | 9%– 10% | 6% | 6% | 900 | 990 | 1,830 | 85% | 2,460 | 148% |
| Two village bypass (location AE) | - | - | 2,050 | 22,400 | - | - | - | - | - | 1,810 | - | 2,440 | - |

**6.4.34.** A number of points can be noted from the figures in **Tables 6.8** and **6.9:**

- the figures illustrate that existing and predicted future traffic flows on more southerly sections of the A12 are significantly higher than flows on the A12 at more northerly locations between Yoxford and Lowestoft;
- for all locations on the A12, the predicted increase in traffic arising from wider economic growth and development unrelated to Sizewell C is broadly similar to the effect related to Sizewell C under both the rail-led and road-led strategies;
- at the Stage 1 consultation a predicted range in daily traffic volumes of 5% to 15% was quoted for the section of the A12 through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham. Following detailed modelling analysis that has been undertaken and the proposal of a two village bypass around Farnham and Stratford St Andrew, the effects in these locations are nullified at the northern two villages and are around 8% to 10% at Little Glemham and Marlesford;
- percentage increases arising from Sizewell C traffic are generally slightly lower during peak network periods than the overall total increase in daily traffic flows. This reflects higher existing flows during network peak periods as well as the effect of EDF Energy's proposed working patterns, which mean many workforce movements would occur outside the main network peaks;
- the daily traffic flows at Sizewell C peak construction would be well within the traffic-carrying capacity of the A12 at Wrentham (location V), Blythburgh (location W), Darsham (location X), Yoxford (location Y) and Wickham Market (location Z). Other environmental effects are discussed in **Volume 2**, where PEI for each mitigation scheme is presented;
- the traffic flows in all future year strategies include trips generated by outage at Sizewell B, which happens for around six weeks every 18 months. Typically, daily traffic flows would be lower than reported in these tables, particularly on the B1122, B1125 and A12; and
- at Woodbridge (location AA), the Sizewell C effect would be proportionally least, as the existing flows are higher. There is some evidence that non-Sizewell C traffic would choose other routes to avoid delay in this area, irrespective of whether Sizewell C goes ahead or not.

**6.4.35.** EDF Energy's proposals for the A12 based on these increases are set out in **Chapter 12, Chapter 16** and **Chapter 17** of this volume.

**Table 6.10** Peak period of Sizewell C construction – changes in daily, peak hour and HGV and bus flows (rail-led strategy) at the remaining locations

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C weekday peak construction traffic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lover's Lane, Leiston (location A) | 2,500 | 3,850 | 450 | 4,300 | 12% | 10% | 12% | 80 | 90 | 250 | 178% | 250 | 178% |
| B1119 Saxmundham Road, Leiston (location C) | 3,750 | 4,550 | 1,450 | 5,950 – 6,000 | 31%–32% | 25% | 21% | 60 | 80 | 100 | 25% | 100 | 25% |
| B1069 Coldfair Green (location D) | 5,400 | 7,300 | 1,150 | 8,450 | 16% | 12% | 12% | 190 | 210 | 390 | 86% | 390 | 86% |

| Location | Current weekday traffic flows | Pre-Sizewell C week-day traffic flows | Sizewell C weekday peak construction traf-fic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1125 Westle-ton (location F) | 2,400 | 2,950 | 650 | 3,600 | 22% | 12% | 16% | 80 | 80 | 80 | 0% | 80 | 0% |
| A1094 west of Snape Road (location G) | 7,550 | 9,100 | 250 | 9,350 – 9,450 | 3%–4% | 5% | 4% | 180 | 200 | 210 | 5% | 210 | 5% |
| B1069 Tunstall (location H) | 3,050 | 4,400 | 650 | 4,900 – 5,050 | 11%– 15% | 8% | 3% | 150 | 160 | 160 | 0% | 160 | 0% |
| B1121 Saxmundham (location I) | 4,550 | 5,400 | 450 | 5,750 – 5,850 | 6%–8% | 7% | 5% | 50 | 60 | 60 | 0% | 60 | 0% |
| A1120 Yoxford (location J) | 3,650 | 4,500 | 800 | 5,300 | 18% | 10% | 12% | 180 | 200 | 200 | 0% | 200 | 0% |
| A144 Halesworth (location K) | 6,900 | 8,250 | 600 | 8,800 – 8,850 | 7%–7% | 5% | 3% | 240 | 270 | 270 | 0% | 270 | 0% |
| B1125 Blythburgh (location L) | 1,650 | 2,050 | 500 | 2,550 | 24% | 9% | 17% | 60 | 60 | 60 | 0% | 60 | 0% |
| A145 Beccles (location M) | 15,350 | 17,100 | 400 | 17,500 | 2% | 1% | 2% | 440 | 490 | 540 | 10% | 580 | 18% |
| B1119 between Framlingham and A12 (location N) | 2,400 | 2,750 | 50 | 2,750 – 2,800 | 0%–2% | 1% | -1% | 30 | 30 | 30 | 0% | 30 | 0% |
| B1078 Wickham Market (location O) | 3,850 | 6,200 | 1,050 | 7,250 | 17% | 14% | 7% | 160 | 190 | 190 | 0% | 190 | 0% |

| Location | Current weekday traffic flows | Pre-Sizewell C week-day traffic flows | Sizewell C weekday peak construction traf-fic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1116 Hacheston (location P) | 6,650 | 7,250 | 250 | 7,500 | 3% | 3% | 3% | 70 | 80 | 80 | 0% | 80 | 0% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 56,900 | 69,550 | 1,550 | 70,450 – 71,100 | 1%–2% | Less than 1% | Less than 1% | 8,860 | 10,880 | 11,200 | 3% | 11,500 | 6% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 44,850 | 53,300 | 200 | 53,400 – 53,500 | 0%–0% | 0% | Less than 1% | 7,190 | 9,150 | 9,190 | 0% | 9,240 | 1% |

**Table 6.11** Peak period of Sizewell C construction – changes in daily, peak hour and HGV and bus flows (road-led strategy) at the remaining locations

| Location | Current weekday traffic flows | Pre-Sizewell C week-day traffic flows | Sizewell C weekday peak construction traf-fic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lover's Lane, Leiston (location A) | 2,500 | 3,850 | 600 | 4,450 – 4,700 | 16%–22% | 18% | 24% | 80 | 90 | 400 | 344% | 400 | 344% |
| B1119 Saxmundham Road, Leiston (location C) | 3,750 | 4,550 | 1,250 | 5,450 – 5,800 | 20%–27% | 15% | 14% | 60 | 80 | 90 | 13% | 90 | 13% |
| B1069 Cold-fair Green (location D) | 5,400 | 7,300 | 1,150 | 8,400 – 8,450 | 15%–16% | 12% | 12% | 190 | 210 | 390 | 86% | 390 | 86% |
| B1125 Westleton (location F) | 2,400 | 2,950 | 650 | 3,500 – 3,600 | 19%–22% | 7% | 14% | 80 | 80 | 80 | 0% | 80 | 0% |
| A1094 west of Snape Road (location G) | 7,550 | 9,100 | 250 | 9,350 – 9,500 | 3%–4% | 6% | 4% | 180 | 200 | 210 | 5% | 210 | 5% |
| B1069 Tunstall (location H) | 3,050 | 4,400 | 600 | 4,900 – 5,000 | 11%–14% | 10% | 3% | 150 | 160 | 160 | 0% | 160 | 0% |
| B1121 Saxmundham (location I) | 4,550 | 5,400 | 250 | 5,200 – 5,650 | -4%–5% | -3% | -4% | 50 | 60 | 60 | 0% | 60 | 0% |
| A1120 Yoxford (location J) | 3,650 | 4,500 | 800 | 5,300 | 18% | 11% | 12% | 180 | 200 | 200 | 0% | 200 | 0% |
| A144 Halesworth (location K) | 6,900 | 8,250 | 600 | 8,800 – 8,850 | 7%–7% | 5% | 4% | 240 | 270 | 270 | 0% | 270 | 0% |
| B1125 Blythburgh (location L) | 1,650 | 2,050 | 500 | 2,500 – 2,550 | 22%–24% | 6% | 16% | 60 | 60 | 60 | 0% | 60 | 0% |
| A145 Beccles (location M) | 15,350 | 17,100 | 400 | 17,500 | 2% | 1% | 2% | 440 | 490 | 570 | 16% | 640 | 31% |
| B1119 between Framlingham and A12 (location N) | 2,400 | 2,750 | 100 | 2,800 – 2,850 | 2%–4% | 1% | -1% | 30 | 30 | 30 | 0% | 30 | 0% |

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C weekday peak construction traffic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase | With Sizewell C daily HGV and bus flow (busiest day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1078 Wickham Market (location O) | 3,850 | 6,200 | 1,050 | 7,250 – 7,350 | 17%–19% | 18% | 9% | 160 | 190 | 190 | 0% | 190 | 0% |
| B1116 Hacheston (location P) | 6,650 | 7,250 | 200 | 7,450 | 3% | 2% | 3% | 70 | 80 | 80 | 0% | 80 | 0% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 56,900 | 69,550 | 1,850 | 70,800 – 71,400 | 2%–3% | 1% | 1% | 8,860 | 10,880 | 11,500 | 6% | 12,110 | 11% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 44,850 | 53,300 | 200 | 53,500 | 0% | Less than 1% | Less than 1% | 7,190 | 9,150 | 9,220 | 1% | 9,300 | 2% |

### c) Traffic increases elsewhere

**6.4.36.** **Tables 6.10** and **6.11** indicate that, aside from the A12 and B1122, the largest proportional increases in traffic arising from the construction phase are predicted to occur near Leiston and Saxmundham, and in Westleton, mainly due to low existing flows and the introduction of bus services.

**6.4.37.** In some locations the relative increase in either bus flows or overall traffic volume is substantial but this is from a low base level, and would not cause the road capacity to be exceeded:

- Lover's Lane, Leiston (location A);
- B1069 Coldfair Green (location D);
- B1125 Westleton (location F);
- B1069 Tunstall (location H);
- A1120 Yoxford (location J);
- B1125 Blythburgh (location L); and
- B1078 Wickham Market (location O).

**6.4.38.** EDF Energy will continue to engage with parish councils with regards to potential additional mitigation in these areas following on from this Stage 3 consultation.

**6.4.39.** On the A14, west of the Seven Hills roundabout (location S), a large volume of Sizewell C-related trips is expected including a significant proportion of HGVs. However the Sizewell C traffic is a very small percentage of the existing traffic levels and is not expected to exceed the capacity of the junction. EDF Energy will discuss the investigation of effects on the A12/A14 junctions 55 and 58 with Highways England, prior to the application for development consent.

### d) Summary

**6.4.40.** NPS-EN1 (Ref. 6.3) recognises that Nationally Significant Infrastructure Projects (NSIPs) can create substantial effects on local transport infrastructure. These effects have been significantly reduced by the embedded mitigation included within the proposals set out in this Stage 3 consultation, namely:

- the construction of an accommodation campus for construction workers, so reducing journeys to work on the local road network;
- direct bus services from Ipswich and Lowestoft, as well as the Leiston area;
- the development of park and ride facilities to reduce car journeys by those living at home or in non-campus accommodation;
- the use of rail to deliver freight and the beach landing facility (BLF) for Abnormal Indivisible Loads (AILs);
- the provision of a two village bypass on the A12 to remove through-traffic from the villages of Farnham and Stratford St Andrew;
- the provision of a Sizewell link road (road-led strategy) or Theberton bypass (rail-led strategy) to reduce the amount of traffic on much of the B1122; and
- various junction improvement schemes to improve safety and/or increase capacity.

**6.4.41.** **Tables 6.2** to **6.5** present the residual traffic effects after these measures have been included. EDF Energy recognises that they represent, in many cases, significant increases in traffic flows over conditions that would be experienced in 2027 if Sizewell C were not under construction. However, in the great majority of cases, these increases are from low existing traffic volumes and the resulting traffic volumes would not exceed the traffic-carrying capacity of the road network. Consequently, they are unlikely to cause additional congestion or delays. It should also be noted that all forecast year traffic flows (both with and without Sizewell C) include Sizewell B outage traffic, which occurs periodically (typically over a six week period every 18 months) therefore typical daily flows would be lower than those reported in this section.

**6.4.42.** EDF Energy recognises that the environmental effects of the traffic increases generated by the construction of Sizewell C also need to be considered and these are set out in the PEI chapters in **Volume 2.**

**6.4.43.** **Tables 6.4** and **6.5** also illustrate that, at locations geographically more distant from the construction site, the increases arising from the project diminish and become an increasingly small increment on predicted future traffic flows. On nearly all these roads, save for the A145 at Beccles (location M) and on the A12, there is no increase in HGV and bus movements. The increase on the A14 at Ipswich is small when compared to the existing traffic flows.

**6.4.44.** In some locations, such as Farnham, Stratford St Andrew, Theberton, Middleton Moor and Yoxford, specific proposals to mitigate these effects are identified in this Stage 3 consultation. Here and elsewhere on the local highway network EDF Energy has undertaken further investigations of the likely effects of increased traffic flows, which are discussed in the relevant **Volume 2** chapters.

## 6.5. Traffic modelling of the Sizewell C early years construction phase

**6.5.1.** The modelling work reported in previous sections focusses on the peak construction period. Since Stage 2 further analysis has been undertaken to also assess traffic effects during the 'early years' construction phase, currently assumed to be 2022, during which the construction workforce would be lower than the peak but the proposed mitigation would not yet be in place, therefore potential effects on the local highway network would be different than those experienced during peak construction. This phase of construction has been assessed on the basis that it would reflect the peak volumes of construction traffic for each of the 'associated development' mitigation sites which could last for around one year. The project-related traffic volumes would be lower than reported here for much of the mitigation construction period.

**6.5.2.** This section sets out the key input parameters which have been used to assess the effects of Sizewell C construction traffic on a typical weekday during the 2022 early years construction phase.

**6.5.3.** These have been referred to elsewhere in this section but, for ease of reference, are collated in **Table 6.12.**

**Table 6.12** Main input parameters relating to Sizewell C early years traffic

| Issue | Input Parameter |
|---|---|
| Early years construction workforce | 1,100 |
| Associated development construction workforce | 670, as follows:<br>• Darsham park and ride – 100<br>• Wickham Market park and ride – 100<br>• A12/Yoxford junction – 30<br>• Two village bypass – 100<br>• Sizewell link road – 300<br>• Freight management facility – 40 |
| Residential location of workforce | Based on Gravity Model |
| Working patterns of the main site construction workforce | • Single shift (800 workers)<br>• Night shift (300 workers |
| Working patterns of the associated development construction workforce | All single shift |
| Size of development site accommodation campus | No campus, but 400 caravans on LEEIE (1.5 people per caravan so 600 workers) |
| Frequency of shuttle buses from LEEIE (caravan site and park and ride) to main site | Buses running every 10 minutes during staff changeover periods, every 20 minutes outside staff changeover periods (to both secondary site entrance and Sizewell B access) |
| Frequency of shuttle buses from Darsham park and ride car park to A12/Yoxford junction | Two buses from Darsham park and ride to Yoxford junction at 07:30, and returning at 17:00 |
| Frequency of park and ride buses | None – sites under construction |
| Frequency of direct buses from Ipswich and Lowestoft | None |
| No. of workers travelling by direct bus | None |
| No. of workers travelling by rail | None |

| Issue | Input Parameter |
|---|---|
| No. of workers walking / cycling / motorcycling to construction site or park and ride sites | No workers assumed to use these modes to give a robust assessment |
| Average level of car sharing | 1.1 workers per car for HB workers and 2 workers per car for NHB workers |
| Non-work trips | Included for all NHB workers (caravan and off-site) |
| LGVs | 250 movements per day |
| Average number of HGVs per day during early years construction | **Main site:** 600 movements (300 deliveries)<br>• Sizewell B access – 75%<br>• Secondary site entrance – 25%<br>**Associated development sites (deliveries):**<br>• Darsham park and ride – 21<br>• Wickham Market park and ride – 21<br>• A12/Yoxford junction – 10<br>• Two village bypass – 60<br>• Sizewell link road – 175<br>• Freight management facility – 30 |
| Routing of HGVs | A12 and B1122 |
| Origin of HGVs | 85% from A12 south<br>15% from A12 north |
| HGVs from LEEIE to main construction site | 280 movements (140 deliveries):<br>• Sizewell B access – 75%<br>• Secondary site entrance – 25% |
| Freight management facility (FMF) | None |
| 'Weekend effect' trips (a proportion of NHB workers likely to travel directly from their permanent home at the start of the week, and returning directly to their permanent home at the end of the week) | See point d) below. |

### a) HGV delivery profile

**6.5.4.** The same profile of deliveries is assumed to operate during early years as peak construction, as presented in **Figure 6.5,** which is intended to minimise noise and environmental effects of HGV traffic during night-time hours (23:00 to 07:00) near the construction sites.

### b) Car sharing

**6.5.5.** Car sharing is taken to be the same as at peak construction:

- HB: 1.1 workers per car; and
- NHB: 2 workers per car.

### c) Non-work related travel by NHB workers

**6.5.6.** As in the peak construction period, during early years additional trips would be made on the local road network associated with non-work related leisure trips made by the construction workforce. Such trips have been included in the traffic modelling of the effects of Sizewell C, based on national travel statistics relating to leisure related trips. This also takes into account proposed working patterns and the fact that the campus would not be in place at this stage, so a larger proportion of the NHB workers would be making longer distance trips, compared with the peak construction period, given that there are no facilities on-site.

#### d) Weekend travel by NHB workers

**6.5.7.** The 'weekend effect' described in **section 6.3** for peak construction, whereby NHB workers are expected to travel from and to their permanent homes at the beginning and end of the working week, though not every week, has also been applied for the early years modelling. These trips have been taken to be single-occupancy, i.e. no car sharing is included in this element of the analysis.

**6.5.8.** As with the peak construction assessment, the modelling allows for the effects of different shift cycles, with single shift and night shift operating on six-week and four-week cycles respectively. As described in **section 6.3**, within these cycles workers depart earlier on a Thursday or Friday during certain weeks and would travel from their permanent home on a Monday on certain weeks. These elements have been included in the modelling so that the resulting effects can be assessed.

**6.5.9.** A significantly lower number of staff would be on-site during weekends, which is reflected in the additional trips made by NHB workers travelling home for the weekend.

#### e) Visitors

**6.5.10.** In addition to the inputs in **Table 6.12**, the modelling and assessment includes daily visitors to the Sizewell C main development site. It is assumed that there would be 40 daily visitors to the Sizewell C construction site, travelling by car.

**6.5.11.** The visitor centre would not yet be complete so any such trips would be to the Sizewell B visitor centre, which are assumed to be already present in the reference case traffic.

#### f) Assessment basis

**6.5.12.** The inputs and assumptions set out in **Table 6.12** and used in the early years traffic modelling conducted for this Stage 3 consultation are the latest, but may be subject to final refinements prior to submission of the application for development consent. As described for the peak construction assessment in **section 6.3**, EDF Energy considers the inputs used in the early years assessment represent a sound basis for assessing potential Sizewell C traffic effects during this period.

**6.5.13.** High level outputs from the modelling work are presented in **section 6.6** for the early years phase of Sizewell C construction. **Volume 2** sets out predicted traffic changes and effects of Sizewell C peak construction, together with mitigation proposals, at those locations where mitigation is proposed.

## 6.6. Early years construction traffic effects across the modelled area

**6.6.1.** As with the peak construction strategies, the early years VISUM traffic modelling suggests that an amount of non-Sizewell C traffic would potentially re-route, meaning that actual increases in vehicle flows could be lower than those shown in **Table 6.13**. Nonetheless, the potential scale of changes in daily traffic flows for the locations shown in **Figure 6.6** across the network is shown in **Table 6.13.**

**Table 6.13** Early years construction period – forecast daily 24 hour weekday traffic flows at a range of locations

| Location | Current average daily (24 hour) weekday all-vehicle traffic flows (based on 2015 data) | Estimated future weekday daily traffic flows without Sizewell C (reference case) | Estimated future daily weekday Sizewell C early years construction flows | Estimated future daily weekday traffic flows with Sizewell C early years traffic | Estimated percentage traffic increase from Sizewell C |
|---|---|---|---|---|---|
| Lover's Lane, Leiston (location A) | 2,500 | 3,650 | 900 | 4,550 | 25% |
| B1122 Abbey Road, central Leiston (location B) | 4,450 | 4,750 | 550 | 5,300 | 12% |
| B1119 Saxmundham Road, Leiston (location C) | 3,750 | 4,350 | 500 | 4,800 – 4,850 | 10%–11% |
| B1069 Coldfair Green (location D) | 5,400 | 7,000 | 250 | 7,250 | 4% |
| B1122 Aldeburgh (location E) | 3,300 | 4,100 | 50 | 4,100 – 4,150 | 0%–1% |
| B1125 Westleton (location F) | 2,400 | 2,850 | 350 | 3,150 – 3,200 | 11%–12% |
| A1094 west of Snape Road (location G) | 7,550 | 8,650 | 250 | 8,850 – 8,900 | 2%–3% |
| B1069 Tunstall (location H) | 3,050 | 3,950 | 150 | 4,100 – 4,350 | 4%–10% |
| B1121 Saxmundham (location I) | 4,550 | 5,200 | 150 | 5,300 – 5,350 | 2%–3% |
| A1120 Yoxford (location J) | 3,650 | 4,200 | 300 | 4,500 – 4,550 | 7%–8% |
| A144 Halesworth (location K) | 6,900 | 7,800 | 100 | 7,900 | 1% |
| B1125 Blythburgh (location L) | 1,650 | 2,000 | 300 | 2,300 | 15% |
| A145 Beccles (location M) | 15,350 | 16,400 | 200 | 16,550 – 16,600 | 1%–1% |
| B1119 between Framlingham and A12 (location N) | 2,400 | 2,650 | 50 | 2,700 | 2% |
| B1078 Wickham Market (location O) | 3,850 | 5,250 | 200 | 5,450 | 4% |
| B1116 Hacheston (location P) | 6,650 | 7,100 | 50 | 7,050 – 7,150 | -1%–1% |
| B1122 Theberton (location Q) | 5,150 | 6,550 | 1,150 | 7,700 | 18% |
| B1122 east of Yoxford (location R) | 3,450 | 4,400 | 850 | 5,250 – 5,300 | 19%–20% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 56,900 | 64,650 | 950 | 64,800 – 65,600 | 0%–1% |

| Location | Current average daily (24 hour) weekday all-vehicle traffic flows (based on 2015 data) | Estimated future weekday daily traffic flows without Sizewell C (reference case) | Estimated future daily weekday Sizewell C early years construction flows | Estimated future daily weekday traffic flows with Sizewell C early years traffic | Estimated percentage traffic increase from Sizewell C |
|---|---|---|---|---|---|
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 44,850 | 50,250 | 150 | 50,250 – 50,400 | 0%–0% |
| A12 Farnham (location U) | 18,900 | 20,700 | 1,950 | 22,050 – 22,650 | 7%–9% |
| A12 Wrentham (location V) | 9,800 | 10,850 | 500 | 11,250 – 11,350 | 4%–5% |
| A12 Blythburgh (location W) | 10,350 | 11,300 | 800 | 12,000 – 12,100 | 6%–7% |
| A12 north of Darsham Park & Ride (location X) | 14,000 | 15,350 | 650 | 15,800 – 16,000 | 3%–4% |
| A12 Yoxford (location Y) | 14,700 | 15,900 | 1,200 | 16,950 – 17,100 | 7%–8% |
| A12 south of Wickham Market Park & Ride (location Z) | 24,550 | 26,300 | 1,800 | 27,700 – 28,100 | 5%–7% |
| A12 Woodbridge (location AA) | 37,800 | 40,000 | 1,600 | 39,850 – 41,600 | 0%–4% |
| A12 Marlesford (south of two village bypass) (location AB) | 18,800 | 20,650 | 1,950 | 22,000 – 22,600 | 7%–9% |
| B1078 Wickham Market (east of B1438) (location AC) | 3,650 | 4,550 | 200 | 4,750 – 4,800 | 4%–5% |
| B1438 High Street, Wickham Market (location AD) | 2,200 | 2,850 | 50 | 2,850 – 2,900 | 0%–2% |
| Two village bypass (location AE) | - | - | - | - | - |
| Theberton bypass (location AF) | - | - | - | - | - |
| Sizewell link road east of A12 (location AG) | - | - | - | - | - |
| B1122 Middleton Moor (location AH) | 3,450 | 4,400 | 850 | 5,250 | 19% |

**6.6.2.** During the early years of Sizewell C construction, as was identified at peak construction in **section 6.4**, most locations would likely experience some re-routing of non-Sizewell C traffic, when the Sizewell C traffic is added. In most cases the re-routed traffic volume is small (less than 5% of daily flows) and would not be noticeable when spread over a whole day[3].

**6.6.3.** Where re-routing is reported, it is only possible to identify that the traffic increases would lie somewhere within the quoted range. In practice, only part of the traffic might re-route, or none at all. In cases where traffic is re-routing away from a particular route, if no such re-routing occurred it would increase effects to the upper end of the quoted range.

**6.6.4.** In particular, the A12 at Woodbridge is shown to be already congested in the reference case, without the addition of Sizewell C traffic, during the early years of Sizewell C construction as well as during peak construction. This results in a more substantial level of potential re-routing away from this route, with the project-related traffic included, at 1,750 vehicles per day or about 4.4% of the existing flow. The reference case conditions in this location are discussed in **section 6.2** of this chapter.

**6.6.5.** Subsequently, around 2.9% of existing traffic on the A12 at Farnham (location U) and at Marlesford (location AB), or around 600 vehicles per day are re-routing away from this area. One of the key routes attracting this diverted traffic is the B1069 Tunstall (location H) which shows a potential addition of 250 vehicles per day or about 6.3% of the existing flow, when the construction traffic is added.

**6.6.6.** There are no locations where the increase in daily traffic volume generated by the early years phase of project construction causes the road capacity to be exceeded. On the A12 at Woodbridge, road capacity is already exceeded in the reference case, without Sizewell C, and improvement options need to be considered by SCC to mitigate the effects of general traffic growth on this road, and other roads that are affected by re-routing behaviour.

**6.6.7.** **Table 6.14** details the changes in weekday traffic flows during peak hours (rather than 24-hours as reported in **Table 6.13**) on the highway network arising from the early years of Sizewell C construction as a percentage increase over the reference case.

**Table 6.14** Early years construction period – peak hour percentage increases in weekday traffic flows at a range of locations

| Location | Percentage increase in traffic at early years construction in the weekday am peak period (07:00-09:00) | Percentage increase in traffic at early years construction in the weekday pm peak period (16:00-18:00) |
|---|---|---|
| Lover's Lane, Leiston (location A) | 28% | 27% |
| B1122 Abbey Road, central Leiston (location B) | 18% | 15% |
| B1119 Saxmundham Road, Leiston (location C) | 21% | 12% |
| B1069 Coldfair Green (location D) | 7% | 4% |
| B1122 Aldeburgh (location E) | 1% | 2% |
| B1125 Westleton (location F) | 23% | 15% |
| A1094 west of Snape Road (location G) | 7% | Less than 1% |
| B1069 Tunstall (location H) | 18% | 17% |
| B1121 Saxmundham (location I) | 5% | 3% |
| A1120 Yoxford (location J) | 14% | 11% |

[3]Variation in daily traffic flow levels is usually in the region of ±5%

| Location | Percentage increase in traffic at early years construction in the weekday am peak period (07:00-09:00) | Percentage increase in traffic at early years construction in the weekday pm peak period (16:00-18:00) |
|---|---|---|
| A144 Halesworth (location K) | 3% | 2% |
| B1125 Blythburgh (location L) | 27% | 20% |
| A145 Beccles (location M) | 1% | 1% |
| B1119 between Framlingham and A12 (location N) | 4% | 3% |
| B1078 Wickham Market (location O) | 13% | 2% |
| B1116 Hacheston (location P) | 1% | 0% |
| B1122 Theberton (location Q) | 26% | 16% |
| B1122 east of Yoxford (location R) | 27% | 15% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | Less than 1% | 0% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | Less than 1% | 0% |
| A12 Farnham (location U) | 11% | 4% |
| A12 Wrentham (location V) | 9% | 4% |
| A12 Blythburgh (location W) | 12% | 7% |
| A12 north of Darsham Park & Ride (location X) | 7% | 4% |
| A12 Yoxford (location Y) | 11% | 6% |
| A12 south of Wickham Market Park & Ride (location Z) | 7% | 5% |
| A12 Woodbridge (location AA) | -1% | -2% |
| A12 Marlesford (south of two village bypass) (location AB) | 12% | 4% |
| B1078 Wickham Market (east of B1438) (location AC) | 16% | 2% |
| B1438 High Street, Wickham Market (location AD) | 2% | 2% |
| Two village bypass (location AE) | - | - |
| Theberton bypass (location AF) | - | - |
| Sizewell link road east of A12 (location AG) | - | - |
| B1122 Middleton Moor (location AH) | 26% | 15% |

**6.6.8.** **Table 6.14** demonstrates that, for the same locations considered in **Table 6.13**, the scale of changes in traffic at network peak hours is generally higher than overall daily changes in traffic flows, during the early years of Sizewell C construction. This is because most construction workers, during this early phase, would be operating a 'single shift' between the hours of 07:00-08:30 and 16:30-18:30 which means they would be mostly travelling to and from work during typical peak hours.

**6.6.9.** **Table 6.15** shows the changes in HGV and bus movements across the highway network.

## Table 6.15 Early years construction period – changes in HGV and bus flows at the locations identified in **Figure 6.6**

| Location | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | Sizewell C buses | Sizewell C HGV | With Sizewell C daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|
| Lover's Lane, Leiston (location A) | 80 | 90 | 90 | 520 | 700 | 678% |
| B1122 Abbey Road, central Leiston (location B) | 140 | 150 | 0 | 0 | 150 | 0% |
| B1119 Saxmundham Road, Leiston (location C) | 60 | 70 | 0 | 0 | 70 | 0% |
| B1069 Coldfair Green (location D) | 190 | 200 | 0 | 0 | 200 | 0% |
| B1122 Aldeburgh (location E) | 90 | 90 | 0 | 0 | 90 | 0% |
| B1125 Westleton (location F) | 80 | 80 | 0 | 0 | 80 | 0% |
| A1094 west of Snape Road (location G) | 180 | 190 | 0 | 0 | 190 | 0% |
| B1069 Tunstall (location H) | 150 | 160 | 0 | 0 | 160 | 0% |
| B1121 Saxmundham (location I) | 50 | 60 | 0 | 0 | 60 | 0% |
| A1120 Yoxford (location J) | 180 | 190 | 0 | 0 | 190 | 0% |
| A144 Halesworth (location K) | 240 | 260 | 0 | 0 | 260 | 0% |
| B1125 Blythburgh (location L) | 60 | 60 | 0 | 0 | 60 | 0% |
| A145 Beccles (location M) | 440 | 470 | 0 | 120 | 590 | 26% |
| B1119 between Framlingham and A12 (location N) | 30 | 30 | 0 | 0 | 30 | 0% |
| B1078 Wickham Market (location O) | 160 | 180 | 0 | 0 | 180 | 0% |
| B1116 Hacheston (location P) | 70 | 80 | 0 | 0 | 80 | 0% |
| B1122 Theberton (location Q) | 210 | 220 | 0 | 600 | 820 | 273% |
| B1122 east of Yoxford (location R) | 170 | 180 | 0 | 620 | 810 | 350% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 8,860 | 10,690 | 0 | 750 | 11,390 | 7% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 7,190 | 8,840 | 0 | 120 | 8,920 | 1% |
| A12 Farnham (location U) | 910 | 970 | 0 | 970 | 1,930 | 99% |
| A12 Wrentham (location V) | 430 | 450 | 0 | 60 | 510 | 13% |
| A12 Blythburgh (location W) | 650 | 690 | 0 | 170 | 860 | 25% |
| A12 north of Darsham Park & Ride (location X) | 820 | 880 | 0 | 170 | 1,050 | 19% |
| A12 Yoxford (location Y) | 840 | 900 | 0 | 640 | 1,530 | 70% |

| Location | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | Sizewell C buses | Sizewell C HGV | With Sizewell C daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|
| A12 south of Wickham Market Park & Ride (location Z) | 1,180 | 1,240 | 0 | 1,000 | 2,230 | 80% |
| A12 Woodbridge (location AA) | 1,070 | 1,180 | 0 | 1,000 | 2,140 | 81% |
| A12 Marlesford (south of two village bypass) (location AB) | 900 | 960 | 0 | 970 | 1,920 | 100% |
| B1078 Wickham Market (east of B1438) (location AC) | 170 | 190 | 0 | 0 | 190 | 0% |
| B1438 High Street, Wickham Market (location AD) | 10 | 10 | 0 | 0 | 10 | 0% |
| Two village bypass (location AE) | - | - | - | - | - | - |
| Theberton bypass (location AF) | - | - | - | - | - | - |
| Sizewell link road east of A12 (location AG) | - | - | - | - | - | - |
| B1122 Middleton Moor (location AH) | 170 | 180 | 0 | 600 | 780 | 333% |

**6.6.10.** As explained previously in this chapter, HGVs serving the Sizewell C construction site would be restricted to using the A12 and the B1122. During the early years of construction HGVs would access the site via the Sizewell B access (75%) or the secondary site entrance on Lover's Lane (25%). HGVs transporting materials from the LEEIE to the site would also be split in this proportion.

**6.6.11.** During the early years of construction there could be up to 600 HGV movements per day on the B1122 in Theberton (location Q) and Middleton Moor (location AH), prior to completion of the proposed bypass. As indicated in **section 6.5** these effects could last for around one year, however the traffic volumes would be lower for much of the mitigation construction programme.

**6.6.12.** There could also be up to 970 HGV movements per day on the A12 at Farnham and Marlesford (locations U and AB), prior to completion of the proposed two village bypass, and up to 1,000 per day further south at Woodbridge. Traffic flows at Marlesford and Little Glemham would be well within the traffic-carrying capacity and, as has been stated earlier in this chapter, there is already a capacity issue at Woodbridge in the reference case scenario which will require intervention by SCC.

**6.6.13.** Although bus and HGV effects during early years would be greater than during peak construction, ahead of any mitigation being completed, this assessment is based on a worst-case scenario whereby all associated development sites are being constructed at the same time, coinciding with the highest volumes of HGV deliveries to the main development site during the early years of construction. EDF Energy recognises these environmental effects will need greater consideration during this phase of construction and these are set out in the PEI chapters in **Volume 2.**

**6.6.14.** EDF Energy provides a commentary below on the predicted traffic effects at the B1122, A12 and elsewhere during the early years of Sizewell C construction. The daily, peak hour and HGV/bus traffic flow changes from **Tables 6.13** to **6.15** are presented together for clarity in the following **Tables 6.16** to **6.18.** For each location, the effects on noise, air quality and other environmental aspects are also considered and these are set out in the PEI chapters in **Volume 2.**

### a) Traffic increases on the B1122

**6.6.15.** Following feedback received at the Stage 2 consultation, EDF Energy proposes to provide either a Theberton bypass or a full Sizewell link road, as described in **section 6.4,** to minimise effects on the B1122. This would carry all Sizewell C-related traffic and a significant amount of existing traffic at Theberton, however until completed all Sizewell C-related traffic would still use the existing B1122 to access the main development site.

**6.6.16.** The scale of additional traffic on the B1122, during the early years of construction, is detailed in **Table 6.16.**

**Table 6.16** Early years construction period – changes in daily, peak hour and HGV and bus flows at the B1122 locations identified in **Figure 6.6**

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C weekday peak construction traffic flows (typical day) | With Sizewell C weekday peak construction traffic flows (typical day) | % increase | 07:00-09:00 weekday construction traffic % increase (typical day) | 16:00-18:00 weekday construction traffic % increase (typical day) | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow (typical day) | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B1122 Abbey Road, central Leiston (location B) | 4,450 | 4,750 | 550 | 5,300 | 12% | 18% | 15% | 140 | 150 | 150 | 0% |
| B1122 Aldeburgh (location E) | 3,300 | 4,100 | 50 | 4,100 – 4,150 | 0%–1% | 1% | 2% | 90 | 90 | 90 | 0% |
| B1122 Theberton (location Q) | 5,150 | 6,550 | 1,150 | 7,700 | 18% | 26% | 16% | 210 | 220 | 820 | 273% |
| B1122 east of Yoxford (location R) | 3,450 | 4,400 | 850 | 5,250 – 5,300 | 19%–20% | 27% | 15% | 170 | 180 | 810 | 350% |
| Theberton bypass (location AF) | - | - | - | - | - | - | - | - | - | - | - |
| B1122 Middleton Moor (location AH) | 3,450 | 4,400 | 850 | 5,250 | 19% | 26% | 15% | 170 | 180 | 780 | 333% |

**6.6.17.** Current weekday all-vehicle daily traffic flows on the section of the B1122 between the junction with the A12 east of Yoxford and the Sizewell C construction site are estimated to range between around 3,450 and 5,150 vehicle movements per day. Flows at the higher end of this range are more characteristic of the section south-east of the B1122/B1125 junction and through Theberton. Future flows by the time of the early years phase of Sizewell C construction (but without Sizewell C-related traffic) are predicted to rise to between around 4,400 and 6,550 vehicle movements per day. EDF Energy's analysis shows that Sizewell C traffic during the early years of construction could add approximately a further 850 vehicles at the western end of B1122, east of Yoxford and through Middleton Moor, and 1,150 vehicles at Theberton.

**6.6.18.** At B1122 Abbey Road in Leiston, flows would increase by around 550 vehicles per day, or 12% of the existing traffic flow in the early years of construction. The B1122/Mill Street improvement would be in place by the very early stages of construction.

**6.6.19.** Traffic increases at the B1122 in Aldeburgh are small and are unlikely to cause any congestion, delays or significant environmental effects.

### b) Traffic increases on the A12

**6.6.20.** **Table 6.17** summarises the daily, peak hour and HGV and bus flow changes on the A12 at various locations, during the early years of construction.

**Table 6.17** Early years construction period – changes in daily, peak hour and HGV and bus flows at the A12 locations identified in **Figure 6.6**

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C week-day early years traffic flows | With Sizewell C week-day early years traffic flows | % increase | 07:00-09:00 weekday con-struction traffic % increase | 16:00-18:00 weekday con-struction traffic % increase | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A12 Farnham (location U) | 18,900 | 20,700 | 1,950 | 22,050 – 22,650 | 7%–9% | 11% | 4% | 910 | 970 | 1,930 | 99% |
| A12 Wrentham (location V) | 9,800 | 10,850 | 500 | 11,250 – 11,350 | 4%–5% | 9% | 4% | 430 | 450 | 510 | 13% |
| A12 Blythburgh (location W) | 10,350 | 11,300 | 800 | 12,000 – 12,100 | 6%–7% | 12% | 7% | 650 | 690 | 860 | 25% |
| A12 north of Darsham Park & Ride (location X) | 14,000 | 15,350 | 650 | 15,800 – 16,000 | 3%–4% | 7% | 4% | 820 | 880 | 1,050 | 19% |
| A12 Yoxford (location Y) | 14,700 | 15,900 | 1,200 | 16,950 – 17,100 | 7%–8% | 11% | 6% | 840 | 900 | 1,530 | 70% |
| A12 south of Wickham Mar-ket Park & Ride (location Z) | 24,550 | 26,300 | 1,800 | 27,700 – 28,100 | 5%–7% | 7% | 5% | 1,180 | 1,240 | 2,230 | 80% |
| A12 Woodbridge (location AA) | 37,800 | 40,000 | 1,600 | 39,850 – 41,600 | 0%–4% | -1% | -2% | 1,070 | 1,180 | 2,140 | 81% |
| A12 Marles-ford (south of two village bypass) (location AB) | 18,800 | 20,650 | 1,950 | 22,000 – 22,600 | 7%–9% | 12% | 4% | 900 | 960 | 1,920 | 100% |
| Two village bypass (location AE) | - | - | - | - | - | - | - | - | - | - | - |

**6.6.21.** A number of points can be noted from the figures in **Table 6.17:**

- the figures illustrate that existing and predicted future traffic flows on more southerly sections of the A12 are significantly higher than flows on the A12 at more northerly locations between Yoxford and Lowestoft;
- for all locations on the A12, the predicted increase in traffic arising from wider economic growth and development unrelated to Sizewell C is broadly similar to the effect related to Sizewell C during the early years of construction;
- increases in daily traffic volumes of 7% to 9% could be experienced on the section of the A12 through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham, prior to completion of the proposed two village bypass;
- percentage increases arising from Sizewell C traffic are generally higher during peak network periods than the overall total increase in daily traffic flows. This is because most construction workers, during this early phase, would be operating a 'single shift' between the hours of 07:00-08:30 and 16:30-18:30 which means they would be mostly travelling to and from work during typical peak hours;
- the daily traffic flows at Sizewell C peak construction would be well within the traffic-carrying capacity of the A12 at Wrentham (location V), Blythburgh (location W), Darsham (location X), Yoxford (location Y) and Wickham Market (location Z). Environmental effects are discussed in **Volume 2**, where PEI for each associated development scheme is presented;
- the traffic flows in all future year scenarios include trips generated by outage at Sizewell B, which happens for around six weeks every 18 months. Typically, daily traffic flows would be lower than reported in these tables, particularly on the B1122, B1125 and A12; and
- at Woodbridge (location AA), as is the case during peak construction, the Sizewell C effect would be least because the existing flows are higher. There is some evidence that non-Sizewell C traffic would use other routes to avoid delay in this area, irrespective of whether Sizewell C goes ahead or not.

**6.6.22.** EDF Energy will continue to engage with parish councils with regards to potential additional mitigation in these areas following on from this Stage 3 consultation.

## Table 6.18 Early years construction period – changes in daily, peak hour and HGV and bus flows at the remaining locations

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C week-day early years traffic flows | With Sizewell C week-day early years traffic flows | % increase | 07:00-09:00 weekday con-struction traffic % increase | 16:00-18:00 weekday con-struction traffic % increase | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lover's Lane, Leiston (location A) | 2,500 | 3,650 | 900 | 4,550 | 25% | 28% | 27% | 80 | 90 | 700 | 678% |
| B1119 Saxmundham Road, Leiston (location C) | 3,750 | 4,350 | 500 | 4,800 – 4,850 | 10%–11% | 21% | 12% | 60 | 70 | 70 | 0% |
| B1069 Coldfair Green (location D) | 5,400 | 7,000 | 250 | 7,250 | 4% | 7% | 4% | 190 | 200 | 200 | 0% |
| B1125 Westleton (location F) | 2,400 | 2,850 | 350 | 3,150 – 3,200 | 11%–12% | 23% | 15% | 80 | 80 | 80 | 0% |

| Location | Current weekday traffic flows | Pre-Sizewell C weekday traffic flows | Sizewell C week-day early years traffic flows | With Sizewell C week-day early years traffic flows | % increase | 07:00-09:00 weekday con-struction traffic % increase | 16:00-18:00 weekday con-struction traffic % increase | Current daily HGV and bus flow | Pre-Sizewell C daily HGV and bus flow | With Sizewell C daily HGV and bus flow | % increase |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A1094 west of Snape Road (location G) | 7,550 | 8,650 | 250 | 8,850 – 8,900 | 2%–3% | 7% | Less than 1% | 180 | 190 | 190 | 0% |
| B1069 Tunstall (location H) | 3,050 | 3,950 | 150 | 4,100 – 4,350 | 4%–10% | 18% | 17% | 150 | 160 | 160 | 0% |
| B1121 Saxmundham (location I) | 4,550 | 5,200 | 150 | 5,300 – 5,350 | 2%–3% | 5% | 3% | 50 | 60 | 60 | 0% |
| A1120 Yoxford (location J) | 3,650 | 4,200 | 300 | 4,500 – 4,550 | 7%–8% | 14% | 11% | 180 | 190 | 190 | 0% |
| A144 Halesworth (location K) | 6,900 | 7,800 | 100 | 7,900 | 1% | 3% | 2% | 240 | 260 | 260 | 0% |
| B1125 Blythburgh (location L) | 1,650 | 2,000 | 300 | 2,300 | 15% | 27% | 20% | 60 | 60 | 60 | 0% |
| A145 Beccles (location M) | 15,350 | 16,400 | 200 | 16,550 – 16,600 | 1%–1% | 1% | 1% | 440 | 470 | 590 | 26% |
| B1119 between Framlingham and A12 (location N) | 2,400 | 2,650 | 50 | 2,700 | 2% | 4% | 3% | 30 | 30 | 30 | 0% |
| B1078 Wick-ham Market (location O) | 3,850 | 5,250 | 200 | 5,450 | 4% | 13% | 2% | 160 | 180 | 180 | 0% |
| B1116 Hacheston (location P) | 6,650 | 7,100 | 50 | 7,050 – 7,150 | -1%–1% | 1% | 0% | 70 | 80 | 80 | 0% |
| A14 south of Ipswich (west of Seven Hills junction) (location S) | 56,900 | 64,650 | 950 | 64,800 – 65,600 | 0%–1% | Less than 1% | 0% | 8,860 | 10,690 | 11,390 | 7% |
| A14 Felixstowe Branch (east of Seven Hills junction) (location T) | 44,850 | 50,250 | 150 | 50,250 – 50,400 | 0%–0% | Less than 1% | 0% | 7,190 | 8,840 | 8,920 | 1% |

### c) Traffic increases elsewhere

**6.6.23.** **Table 6.18** indicates that, aside from the A12 and B1122, the largest proportional increases in traffic arising from the early years of construction are predicted to occur on the B1119 Saxmundham, B1125 Westleton and on Lover's Lane, mainly due to low existing flows.

**6.6.24.** In some locations the relative increase in either bus flows or overall traffic volume is substantial but this is from a low base level, and would not cause the road capacity to be exceeded:

- Lover's Lane, Leiston (location A);
- B1119 Saxmundham Road, Leiston (location C);
- B1125 Westleton (location F); and
- B1125 Blythburgh (location L).

**6.6.25.** There could also be a significant amount of rerouting onto the B1069 Tunstall (location H) as a result of the existing congestion issue on the A12 at Woodbridge.

**6.6.26.** EDF Energy will continue to engage with parish councils with regards to potential additional mitigation in these areas following on from this Stage 3 consultation.

**6.6.27.** On the A14, west of the Seven Hills roundabout (location S), a large volume of Sizewell C-related trips is expected including a significant proportion of HGVs delivering to the main development site as well as the associated development construction sites. However the Sizewell C traffic is a very small percentage of the existing traffic levels and is not expected to exceed the capacity of the junction. EDF Energy will discuss the investigation of effects on the A12/A14 junctions 55 and 58 with Highways England, prior to the application for development consent.

**6.6.28.** In some locations such as Lover's Lane (location A), B1069 Coldfair Green (location D), A1094 west of Snape Road (location G) and B1125 Blythburgh (location L) the traffic flows are higher than those reported at Stage 2 for peak construction. The main reason for this is the inclusion of Sizewell B outage trips in all future year scenarios.

### d) Summary

**6.6.29.** The mitigation proposals set out in **Volume 2** would significantly reduce the effects of construction of Sizewell C on the surrounding highway network. However, many of these measures would not be in place during the early years of the construction phase, currently taken to be 2022, which means that although the construction workforce would be much smaller than at peak construction, the effects could be greater in particular locations.

**6.6.30.** There are significant increases in HGV volumes on the A12 and B1122 during the early years of Sizewell C construction, before the proposed bypasses that would remove these trips from Theberton, Farnham and Stratford St Andrew would be completed. These effects at the associated development locations are identified in PEI contained in **Volume 2.**

**6.6.31.** It should be noted however that the transport modelling assumes a worst-case scenario whereby all associated development sites are being constructed at the same time, coinciding with the highest volumes of HGV deliveries to the main site during the early years of construction. Following on from this Stage 3 consultation, detailed consideration will be given to the programme of mitigation implementation which will be optimised to minimise the effects on the highway network during this phase of construction.

**6.6.32.** **Table 6.15** illustrates that, at locations geographically more distant from the construction site, the increases arising from the project diminish and become an increasingly small increment on predicted future traffic flows. Apart from the A14, A12 and the B1122, the only roads with increases in HGV movements are Lover's Lane (location A) and the A145 at Beccles (location M). The increase on the A14 at Ipswich is small when compared to the existing traffic flows. The only bus movements generated by the project, during the early years of construction, are between the Darsham park and ride and A12/Yoxford junction construction sites, and between the LEEIE and the secondary site entrance and the Sizewell B access.

# 7. Main Development Site

## 7.1. Introduction

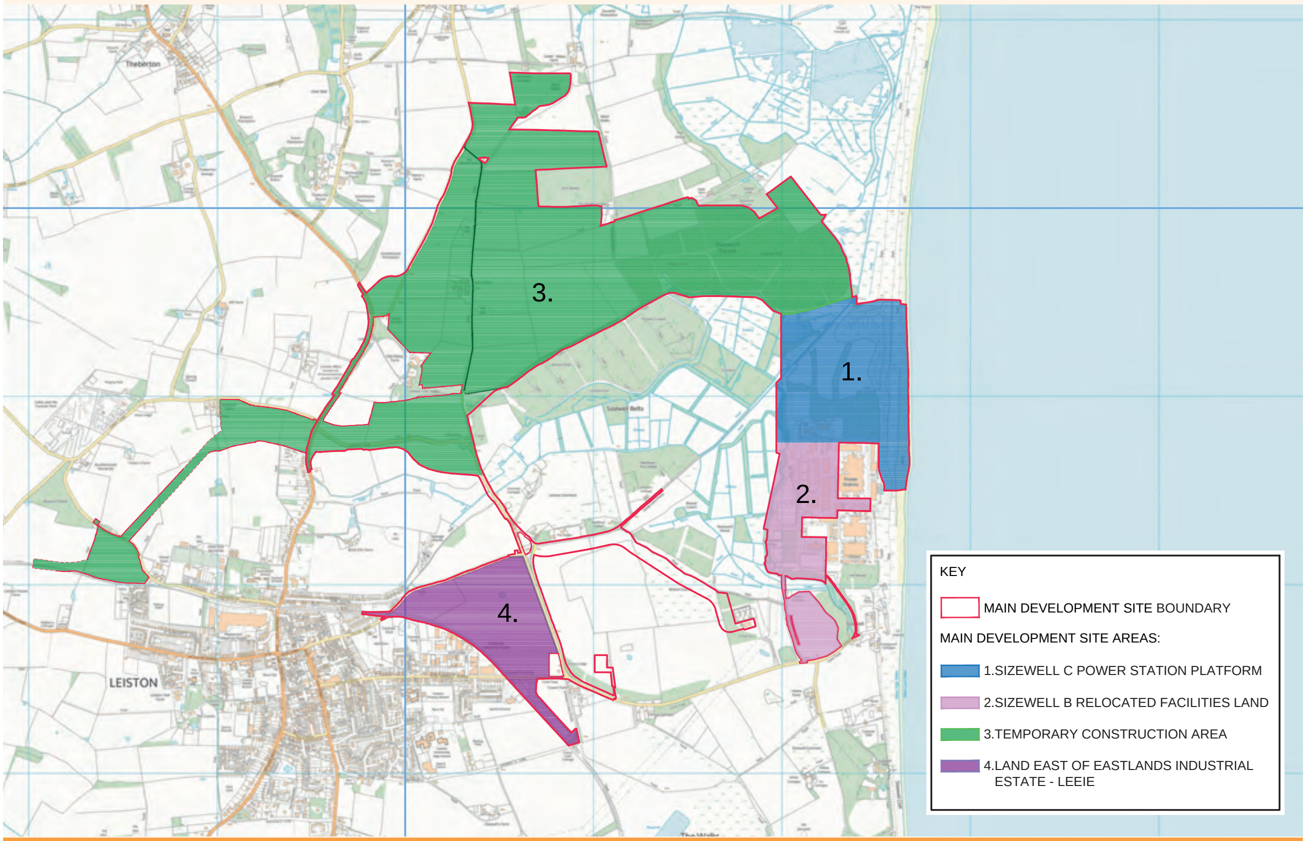
**7.1.1.** This chapter sets out the proposals for the main development site, which comprises the total area needed for constructing and operating Sizewell C power station. It is made up of four components, which are described below and illustrated in **Figure 7.1:**

- **Power station platform (main platform):** the area that will become the power station itself.
- **Sizewell B relocated facilities land**: the area that certain Sizewell B facilities would be moved to in order to release other land for Sizewell C.
- **Temporary construction area:** the area located primarily to the north and west of the Site of Special Scientific Interest (SSSI) crossing, which would be used to support construction activity on the main platform.
- **Land east of Eastlands Industrial Estate (LEEIE):** the area directly north of Sizewell Halt, which would be used to support construction on the main platform and temporary construction area.

**7.1.2.** Development at the main development site would comprise the following building, engineering or other operations:

- Nuclear power station, including two UK EPR™ reactor units capable of exporting a total of approximately 3,340 Megawatts (MW) to the National Grid.
- Associated buildings, plant and infrastructure within the power station perimeter, including overhead power lines and pylons.
- Associated buildings, plant and infrastructure outside of the power station perimeter, including a training building, beach landing facility and flood defences.
- Marine works and associated infrastructure, including a cooling water system and combined drainage outfall in the North Sea.
- A temporary accommodation campus for up to 2,400 construction workers and associated facilities, buildings and infrastructure, located east of Eastbridge Road.
- National Grid 400 Kilovolts (kV) substation and associated relocation of an existing pylon and power line south of Sizewell C.

**Figure 7.1** Main development site and sub-areas

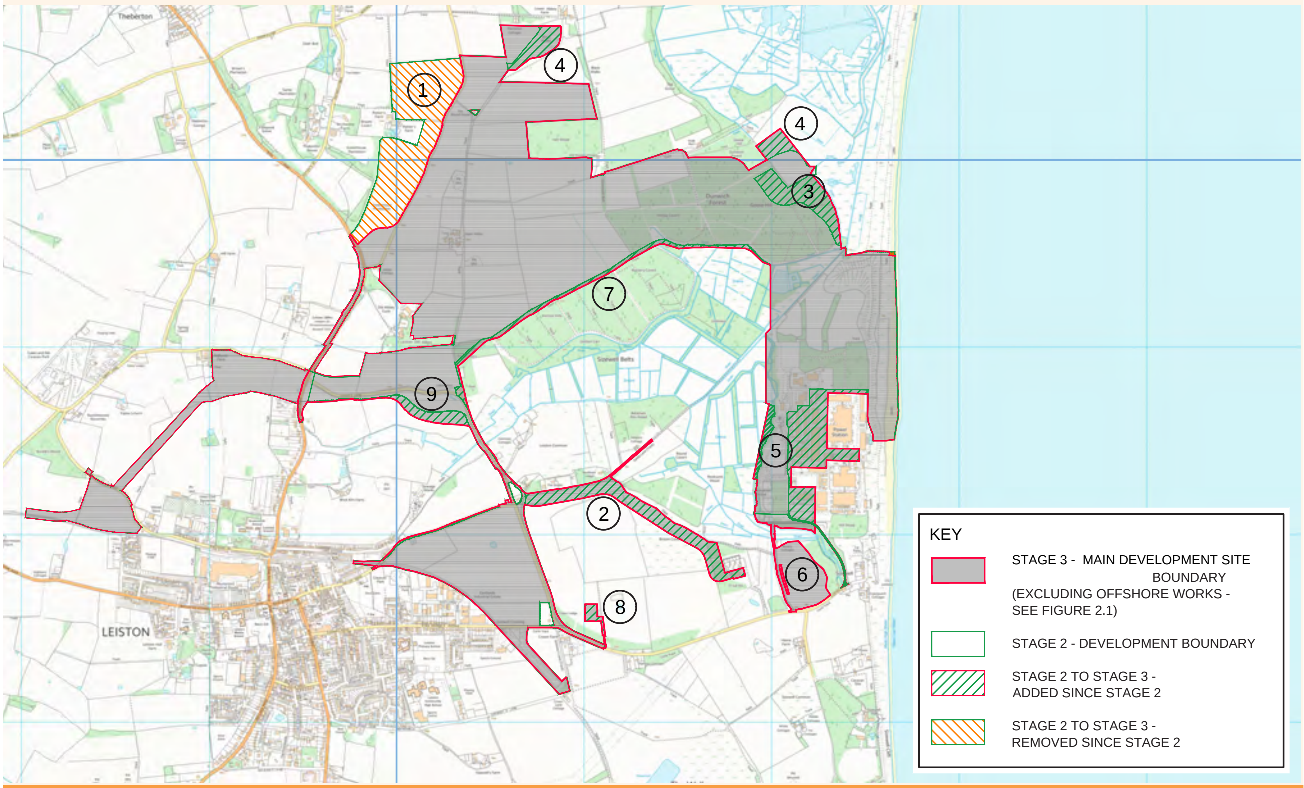


- Relocation of certain Sizewell B supporting buildings, plant and infrastructure south of Sizewell C.
- Vehicular and pedestrian crossing over the Sizewell Marshes SSSI south of Goose Hill.
- Power station access road, linking the SSSI crossing with a new roundabout onto Abbey Road (B1122).
- Public access works including permanent and temporary closures and diversions of public rights of way.
- Diversion and installation of utilities and services.
- Temporary construction compounds, parking, laydown areas and working areas, plus related works and structures.
- Temporary spoil management areas, including borrow pits and stockpiles.
- Temporary rail infrastructure associated with the green rail route (rail-led strategy only).
- Landscape restoration works and planting.

**7.1.3.** Development at LEEIE would comprise the following building, engineering or other operations. All development in this location would be temporary unless otherwise stated:

- Construction compounds, laydown areas and working areas, plus related works and structures.
- Spoil management areas, including borrow pits and stockpiles.
- Accommodation for approximately 400 caravans and associated welfare and parking.
- HGV and bus management area.
- Park and ride facility.
- Reconfiguration of the existing railhead at Sizewell Halt to accommodate longer trains (Option 1–permanent).
- Overhead conveyor system to transfer freight material into LEEIE over King George's Avenue (Option 1).
- A new rail siding adjacent to the existing railway track (Option 2).
- Landscape restoration works and planting (permanent).

## Figure 7.2 Illustrative main development site changes



## Table 7.1 Headline summary of main changes to site boundary

| Change | Summary rationale |
|---|---|
| **Land removed from site boundary** | |
| **1. Land west of Eastbridge Road** | The accommodation campus area will now only be located east of Eastbridge Road. As a result of this it is no longer necessary to divert Eastbridge Road.<br>Borrow pit field one, located north of Potters Farm is no longer being explored as an option. |
| **Land added to site boundary** | |
| **2. Land north of Sizewell Gap** | Land is now included in this area for an electricity cable and associated trench for use during the construction and operation phases. |
| **3. Additional woodland at Goose Hill** | Retained woodland at Goose Hill is now included to allow for active management of this area. |
| **4. Additional land for water management zones** | The water management zones need to be increased in size to help ensure they can adequately attenuate and, if required, treat surface water run-off prior to discharge to either watercourses or to the ground. The larger site also allows for an access route with perimeter bunding to be added to each zone.<br>The proposed locations are: land adjacent to Lower Abbey Farm; land north of Goose Hill; and, land north of Aldhurst Farm Habitat Creation Scheme. |
| **5. Land within Sizewell B power station complex** | The relocation of certain ancillary facilities within Sizewell B, which is required to release land for Sizewell C, is included in the application for development consent. |
| **6. Land east of Sandy Lane (Pillbox Field)** | The outage car park for Sizewell B would need to be relocated to this location in order to release land for Sizewell C. |
| **7. Land north of Kenton Hills and south of Goose Hill** | Additional land has been included to help ensure construction ground levels can tie in with levels in the surrounding area. |
| **8. Land adjacent to Sizewell Gap** | The emergency landing site for Sizewell B also needs to be relocated; the replacement facility in this location would be shared between Sizewell B and Sizewell C. |
| **9. Junction of Lover's Lane and Abbey Road** | Further work on the requirements for Lover's Lane has led to some changes in the land required. |

**7.1.4.** This chapter focuses particularly on new proposals or changes to the power station proposals since Stage 2. These have been developed taking account of the Stage 2 consultation feedback as well as EDF Energy's ongoing design development and environmental studies. Preliminary environmental information (PEI) related to this development is set out in **Volume 2A, Chapter 2.**

**7.1.5. Figure 7.2** shows the main development site boundary, which has increased in size since Stage 2 to around 350 hectares (ha). A summary of how and why this boundary has changed since the Stage 2 consultation is set out in **Table 7.1** below, with further detail on the changes provided later in this chapter.

**7.1.6.** The remainder of this chapter is structured as follows:

- **section 7.2** explains how nuclear power generation works at a strategic level and provides an overview of nuclear safety processes and the decommissioning stage;
- **section 7.3** sets out the project design principles that the project will adhere to;
- **section 7.4** sets out how the power station could look once it is operational and how these proposals have developed since the Stage 2 consultation;
- **section 7.5** sets out how the site could evolve during the construction phase to help deliver the power station and how account has been taken of Stage 2 consultation feedback; and
- **section 7.6** provides details of the temporary worker accommodation (campus and caravan site) the project intends to provide on-site and how the proposals have evolved in response to the feedback received at Stage 2.

## 7.2. Nuclear operation

**7.2.1.** This section explains the operational characteristics of the power station, including the fundamentals of how nuclear power generation works. **Figure 7.3** illustrates this process at a schematic level.

**7.2.2.** Nuclear power stations create electricity by producing steam for turbines connected to electrical generators. The actual electricity generation is achieved conventionally; nuclear technology generates the steam that drives the turbines.

**7.2.3.** Sizewell C would be powered by two nuclear reactors of a type known as UK EPRTM. At the centre of each reactor is a thick-walled steel pressure vessel within which a controlled fission reaction takes place. This reaction is capable of producing 4,500 MW of thermal power, which is used to heat a primary circuit of pressurised water to around 330oC. The cooling water in this primary circuit is circulated through four heat exchangers, known as steam generators, where water in a separate secondary circuit is converted to steam. The reactor pressure vessel, steam generators and pressuriser vessel are contained within a pressure-retaining reinforced concrete structure, known as the containment.

**7.2.4.** The secondary circuit steam is used to power a single large turbine per reactor, rotating at around 1,500 revolutions per minute. This is housed in a turbine hall and is connected directly to a three-phase electrical generator capable of producing around 1,780 MW of electrical power, of which around 1,670 MW is exported.

**7.2.5.** Steam leaving the turbine is circulated through condensers, which are cooled by a further separate circuit of sea water, and turned back into water (or condensate). This steam condensate is returned to the steam generators via high pressure pumps. For Sizewell C, the sea water would be taken from the North Sea via two cooling water intake tunnels (one associated with each unit) and returned via a single underground outfall tunnel. Electricity from the Sizewell C generators would be stepped up to high voltage (400 kV) by transformers adjacent to each turbine hall and transmitted by overhead lines to the new National Grid 400kV substation.

**7.2.6.** Emergency diesel generators provide backup power to maintain reactor cooling in the event of an unexpected loss of incoming (off-site) power.

**7.2.7.** The UK EPR™ has the capacity to make more efficient use of fuel than current designs, thus reducing the quantities of spent fuel that need to be disposed of.

**7.2.8.** **Figure 7.4** shows schematically how the buildings and structures that serve a UK EPR™ reactor are typically arranged.

**Figure 7.3** Schematic layout showing how electricity would be generated

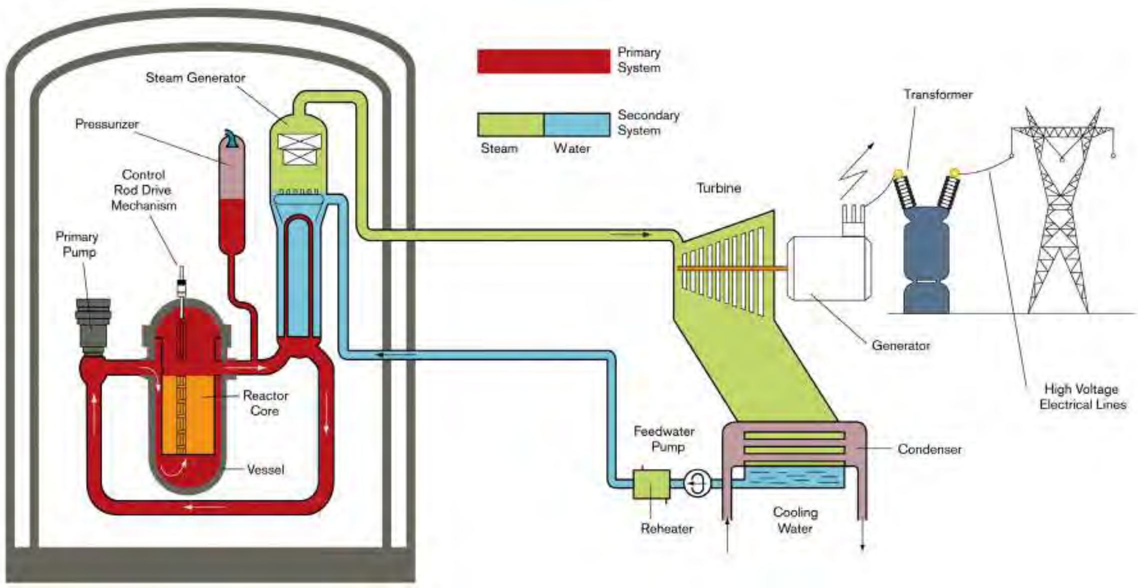
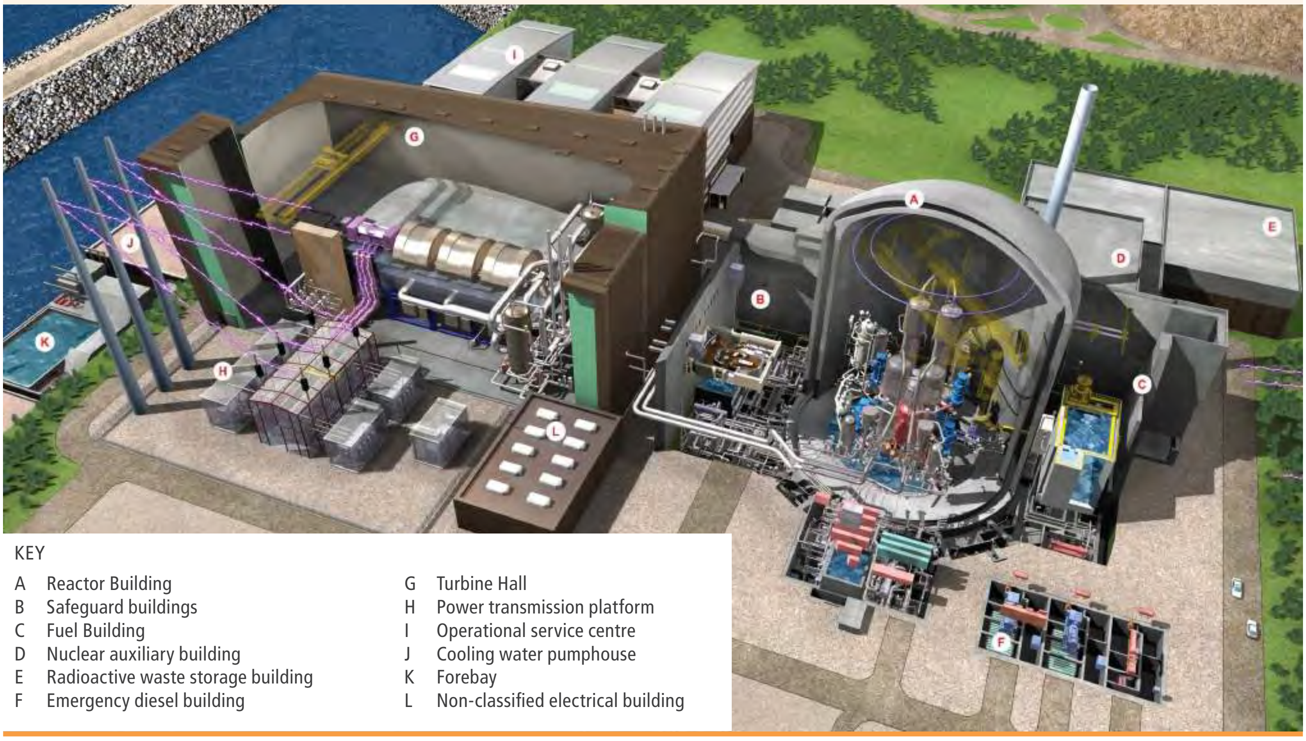


**Figure 7.4** Illustration of typical EPR™ layout




**7.2.9.** With two reactors, Sizewell C is expected to supply 3,340MW to the National Grid, enough electricity to power approximately six million homes.

**7.2.10.** Sizewell C is planned to operate for 60 years. It is expected that approximately 900 staff would be employed during normal operations. Sizewell C is designed to operate continuously 24 hours a day, save for routine refuelling and maintenance outages. Therefore, access is required to the site and facilities at all times.

**7.2.11.** On average 1,000 additional staff would be employed during planned refuelling and maintenance outages, which are expected to take place approximately every 18 months for each UK EPR™ unit. Each outage would typically last between one and three months.

### a) Nuclear safety and design

**7.2.12.** The design of the UK EPR™ has been the subject of generic and site specific safety assessments, to ensure that the highest standards of nuclear safety are maintained. These assessments include the results from worldwide operating experience, including a review of the 2011 events at Fukushima in Japan.

### Generic Design Assessment

**7.2.13.** Generic Design Assessment (GDA) is the process by which the nuclear regulators, the Office for Nuclear Regulation (ONR) and the Environment Agency assess new nuclear power station designs. The GDA process allows the regulators to assess the safety, security and environmental implications of new reactor designs. Assessment at the design stage enables identification of any potential issues so that they can be addressed by the requesting party (the company who has submitted a design for assessment) before commitments are made to construct the reactors.

**7.2.14.** Through the GDA process, EDF Energy submitted detailed information on the design of the UK EPR™. A rigorous and structured examination was undertaken, carried out in an open and transparent manner, to facilitate the involvement of the public who were able to view and comment on design information.

**7.2.15.** In December 2012, the ONR issued a Design Acceptance Confirmation (DAC) and the Environment Agency issued a Statement of Design Acceptability (SoDA) for the UK EPR™ design, which concluded the GDA process.

**7.2.16.** The design of the plant, buildings and systems subject to the GDA process are required to meet the highest standards of public and environmental protection, and withstand a range of defined natural and human hazards, to ensure protection over the lifetime of the power station. Any modifications to this design would need to undergo a stringent change control process, which would be likely to result in significant programme delays.

### Nuclear site licence

**7.2.17.** In addition to the GDA process, site nuclear safety is regulated under the Nuclear Installations Act 1965 (Ref. 7.1). Under this site specific regime, we are required to obtain a nuclear site licence from the ONR to build and operate a nuclear plant. Accompanying the licence is a set of conditions covering construction, operation of the plant and staff organisation. The licensing process involves safety case submissions to demonstrate that operation of the proposed plant would not lead to harm to the operators or members of the public. The ONR's inspectors assess the submissions against their own set of safety assessment principles.

**7.2.18.** Wherever possible, we are proposing to replicate the approach to site nuclear safety taken at Hinkley Point C, which already benefits from a nuclear site licence. This will help to minimise risks to the construction programme that may arise from revising the design of the nuclear site.

### Fukushima

**7.2.19.** The earthquake and tsunami in Japan in 2011, and the consequences for the Fukushima nuclear complex, led to a review of nuclear safety in the UK carried out by the ONR. Separately, we undertook our own review of the robustness of the proposed design. The findings of these reviews have resulted in a number of changes to the configuration of buildings and requirements, which we described at Stage 2.

### Spent fuel and radioactive waste management

**7.2.20.** We would ensure that the management of spent fuel and radioactive waste generated at Sizewell C protects both people and the environment, in a manner consistent with UK policy and legislation.

**7.2.21.** The UK EPR™ design optimises fuel use and generates less spent fuel than other nuclear reactors in the UK per unit of electricity generated.

**7.2.22.** Spent fuel removed from the reactor would initially be stored in the reactor fuel pool. Following this initial storage period, the spent fuel assemblies would be transferred to the separate on-site interim spent fuel store where they would be safely stored until a UK geological disposal facility is available and the spent fuel is ready for final disposal.

**7.2.23.** The interim spent fuel store would be designed for a life of at least 100 years, which could be extended if necessary. The interim spent fuel store would be designed to be capable of operating independently of other parts of the power station in recognition that its lifetime would, under current assumptions, extend beyond the operational life and decommissioning of the other facilities on-site.

**7.2.24.** The design of the UK EPR™ planned for Sizewell C includes a number of measures aimed at limiting the amount of radioactive waste generated. Radioactive waste generated at Sizewell C would fall into two categories:

- Low Level Waste (LLW) would be disposed of as soon as reasonably practicable, following treatment to limit its volume and appropriate conditioning or packaging to allow its safe transport and disposal. LLW typically consists of daily refuse such as disposable gloves and overalls.
- Intermediate Level Waste (ILW) would be conditioned and packaged on-site throughout the operational phase. The packages would be safely stored in the ILW interim storage facility until the UK geological disposal facility is available to accept waste from Sizewell C. As with the interim spent fuel store, it would be possible to extend the life of the ILW interim storage facility. ILW contains higher amounts of radioactivity and consists of material such as nuclear fuel cladding.

### b) Decommissioning

**7.2.25.** At the end of Sizewell C's operational lifetime, the site would be decommissioned. Decommissioning is a process governed by the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended) (Ref. 7.2). It requires consent from the ONR before it can take place. We, like all new nuclear operators, are required to have an approved Funded Decommissioning Programme (FDP) in place before nuclear-related safety construction begins. The FDP is legally binding and sets out the legal and financial arrangements to make sure the full cost of decommissioning (including waste management and disposal costs) will be met from funds set aside during the operation of the power station.

**7.2.26.** The UK EPR™ has been designed with decommissioning in mind, enabling radioactive waste quantities to be limited when decommissioning takes place. Most of the site would be cleared and released for other uses. The interim spent fuel store would continue to operate until a UK geological disposal facility is available and the spent fuel is ready for disposal.

## 7.3. Design principles

**7.3.1.** In the Stage 2 consultation we set out the design principles and the design brief that will guide the project. They help to define and establish how the project can fulfil the criteria of 'good design', as set out in National Policy Statements (NPS) EN-1 (Ref. 7.3) and NPS EN-6 (Ref. 7.4). Section 4.5 of NPS EN-1 (also referenced in section 2.8 of NPS EN-6) states:

*"Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible."*

**7.3.2.** We intend to develop the project in accordance with the design principles set out in **Table 7.2.** They remain unchanged since Stage 2 and are included in this document for information.

**7.3.3.** The design brief sets out how we propose to deliver the project in accordance with the principles and will continue to evolve where necessary as the design develops. The Stage 3 version of the design brief is set out in **Table 7.2.** It largely replicates the Stage 2 version, although further design development has allowed us to make design brief 15(d) more specific to our needs.

**Table 7.2** Design principles and brief

| Project Design Principles | Stage 3 Design Brief |
|---|---|
| **1. Generic Design**<br>Sizewell C will be designed to comply with regulatory requirements namely the outcome of the UK EPR™ GDA. | **1a.** Design in accordance with ONR Guidance on the GDA, where 'significant changes to the GDA design are to be avoided for reasons of standardisation except where changes would give safety benefits' (paragraph 168). This includes replication of:<br>• the structural design of the UK EPR™ buildings and structures;<br>• the size, form and finish, including concrete colour spectrum, of the UK EPR™ safety related buildings and structures, including the nuclear islands, fuel and waste storage buildings and cooling water pumphouses;<br>• the UK EPR™ building configuration and layout; and<br>• the main plant connections and galleries between the UK EPR™ buildings and structures. |
| **2. Construction and Commissioning**<br>The proposed design must ensure that the power station can be constructed safely. | **2a.** Comply with the Construction (Design and Management) Regulations (CDM) (Ref. 7.5) in all design and construction.<br>**2b.** Provide sufficient space and separation for access and movement of people, plant and materials around the site during construction. |
| **3. Operations**<br>The proposed design must ensure that the power station can be operated and maintained safely in accordance with the nuclear site licence and other applicable regulations and consents. | **3a.** Provide protection against natural and human external hazards, using the as low as reasonably practicable (ALARP) principle.<br>**3b.** Provide a safe working environment for the workforce and visitors.<br>**3c.** Provide adequate space for safe repair and maintenance of all power station elements including buildings, underground galleries, roads, drainage and fencing.<br>**3d.** Provide safe access for periodic inspection of safety critical structures.<br>**3e.** Allow for operational changes that occur every 18 months during outages, including fluctuations to the size of the workforce on-site. |
| **4. Decommissioning**<br>The power station site and structures must consider safe decommissioning as part of the design. | **4a.** Replicate the UK EPR™ generic design to ensure a consistent and safe approach to future decommissioning. |

| Project Design Principles | Stage 3 Design Brief |
|---|---|
| **5. Programme**<br>EDF Energy's programme for delivery of the project is to be maintained. | **5a.** Avoid redesign activity with the potential to cause programme delays either during pre-construction (for investment decisions) or during construction (where bespoke build elements could risk delays), especially for those buildings and structures governed by the GDA.<br>**5b.** Develop any site-specific designs for Sizewell C to allow procurement, construction and commissioning within the planned construction programme. |
| **6. Cost**<br>To ensure commercial viability the Sizewell C Project needs to achieve real cost savings associated with being the 'next of a kind', avoiding significant redesign without compromising overall design quality. | **6a.** Maintain Hinkley Point C designs wherever practicable in order to avoid redesign costs, maximise the efficiency of construction and ensure consistency of the operational and maintenance regime.<br>**6b.** Monitor the cumulative cost impact of design changes. |
| **7. Quality**<br>EDF Energy is dedicated to good design for the Sizewell C development. | **7a.** Design Sizewell C to demonstrate and symbolise EDF Energy's commitment to good design.<br>**7b.** Maintain viability by balancing high quality design within the required programme and budget. |
| **8. Environmental Legislation**<br>The development will be designed to comply with all associated environmental legislation and have regard to best practice. | **8a.** A requirement to comply with legislation will be embedded into the design process at the earliest opportunity. Best environmental practice will be taken into account to help ensure high standards of environmental protection. |
| **9. Landscape and Visual Amenity**<br>The development will be designed to take account of potential effects on the purpose of the Area of Outstanding Natural Beauty (AONB) designation. Parties will aim to reach common ground on the definition of the special qualities of the AONB in order to help inform design. Where likely significant effects cannot be avoided or reduced then mitigation measures will be applied. | **9a.** Plan the construction and operational phases of the development to optimise land use and mitigate landscape, seascape and visual effects, where reasonably practicable.<br>**9b.** Retain existing screening landscape features, where reasonably practicable, and promote appropriate new landscape design (planting and landform) to mitigate the landscape and visual effects of the development.<br>**9c.** Establish new planting and landform at the earliest reasonably practicable opportunity.<br>**9d.** Plan the development and design structures and buildings to respect the rural and, in part, wilderness character of the landscape.<br>**9e.** Select finishes (materials, colour and texture) to be sympathetic to local landscape and seascape and built context, where reasonably practicable.<br>**9f.** Design associated infrastructure, including lighting, access and fencing, to minimise, where reasonably practicable, landscape, seascape and visual effects.<br>**9g.** Minimise, where reasonably practicable, visual effects at night from lighting and light spill without compromising either safety or security. |
| **10. Biodiversity**<br>The development will be designed with the aim of avoiding significant harm to biodiversity (habitats and species) particularly designated interest features of nationally and internationally designated sites, protected and priority species. Where likely significant effects cannot be avoided or reduced then mitigation measures will be applied, as necessary. Enhancements to existing habitats will be incorporated where reasonably practicable. | **10a.** Minimise the likely significant adverse biodiversity effects and seek opportunities post-construction through retention of existing habitats, where reasonably practicable, and creation of new habitats.<br>**10b.** Seek to retain areas of habitat connectivity and continuity as far as possible within the EDF Energy estate.<br>**10c.** Design the development, including lighting, access and fencing, to minimise disturbance to protected species, including at night, and severance of habitats, where reasonably practicable.<br>**10d.** Minimise land take from the SSSI. |
| **Historic Environment**<br>The design of the development will consider potential effects on designated and non-designated heritage assets, including buried archaeology and historic landscape character. | **11a.** Avoid or minimise the likely significant effects on designated heritage assets and their settings, and avoid or minimise likely significant impacts on other non-designated heritage assets including buried archaeology, wherever practicable. |

| Project Design Principles | Stage 3 Design Brief |
|---|---|
| **12. Amenity and Recreation**<br>The development will be designed to reduce impacts on recreational assets and to deliver appropriate alternative opportunities. | **12a.** Create and maintain safe public access (pedestrian, equestrian, cycle) through the EDF Energy estate, integrated with existing networks, where reasonably practicable.<br>**12b.** Ensure that facilities for public use and enjoyment in different parts of the EDF Energy estate take into account the balance of other considerations including landscape character, the historic environment and ecology. |
| **13. Security**<br>The development must incorporate proportionate security provisions in accordance with ONR requirements and EDF Energy standards. | **13a.** Design and install physical security measures that are appropriate to the level of security required in each location. |
| **14. Access**<br>Permanent access to and within the site must meet all operational requirements. | **14a.** Provide a new access road from the north-west as the main operational access to Sizewell C, taking into account the surrounding environment.<br>**14b.** Maintain a second independent access point to the power station, for security purposes.<br>**14c.** Include access routes for workforce pedestrians and cyclists as appropriate.<br>**14d.** Design road lighting and signage to limit impact on the surrounding landscape and wildlife where practicable.<br>**14e.** Design appropriate facilities for sea-borne delivery of Abnormal Indivisible Loads (AILs). |
| **15. Sizewell Context**<br>Sizewell C structures should compliment the existing structures within the landscape, most notably Sizewell A and B. | **15a.** Design Sizewell C as a planned composition with Sizewell A and B, balancing proportions and impact across the sites.<br>**15b.** In outline and based on current knowledge, consider the influence of the future form and appearance of Sizewell A as decommissioning continues.<br>**15c.** In order to influence design proposals, assess the relative positioning and prominence of Sizewell C prominent buildings and their impact on key views of the Sizewell site.<br>**15d.** Aim to place power cables underground where this does not present significant safety and programme risks. |
| **16. Sizewell C Operational Site**<br>Sizewell C must be an efficient and well-ordered facility. It should provide visible reassurance of a properly functioning and safe site, considerate of the area of environmental sensitivity. | **16a.** Design Sizewell C as a masterplanned composition, not a series of individual structures.<br>**16b.** Recognise the crucial operational and constructional differences between the Sizewell C UK EPR™ and Sizewell B, and the consequent impacts upon form, construction, materials and appearance.<br>**16c.** Develop a coordinated architectural language for each of the three key families of buildings that read together throughout Sizewell C including:<br>• UK EPR™ safety related buildings;<br>• conventional island buildings (turbine halls) and ancillary structures; and<br>• workforce buildings.<br>**16d.** Adopt EDF Energy sustainability policies and consider high sustainability ratings for buildings, where appropriate, using an independent rating system.<br>**16e.** Design stacks to the minimum height necessary, based on modelled dispersion requirements.<br>**16f.** Use durable, low maintenance materials suitable for a marine environment for the external envelope of all buildings.<br>**16g.** Minimise the need for permanent access systems, railings and other secondary structures attached to buildings and, where these will be visible from outside the site, maintain a coordinated approach, where reasonably practicable. |
| **17. Workforce**<br>EDF Energy is committed to providing a high quality workplace for the entire power station workforce. | **17a.** Create a sense of place and community for the workforce within the site.<br>**17b.** Design workforce buildings, occupied by large numbers of staff, to respond to occupants' needs for access, views, daylight, shading and ventilation.<br>**17c.** Use soft and hard landscaping to provide character to those external areas and routes within the site used most intensely by pedestrians. |
| **18. Wider EDF Energy estate**<br>Design structures located outside the main platform to take into consideration the local surroundings. | **18a.** Design new buildings located outside the main platform to be responsive to their individual local context whilst maintaining a coordinated high quality approach to the whole development. |

## 7.4. Permanent development

### a) Introduction

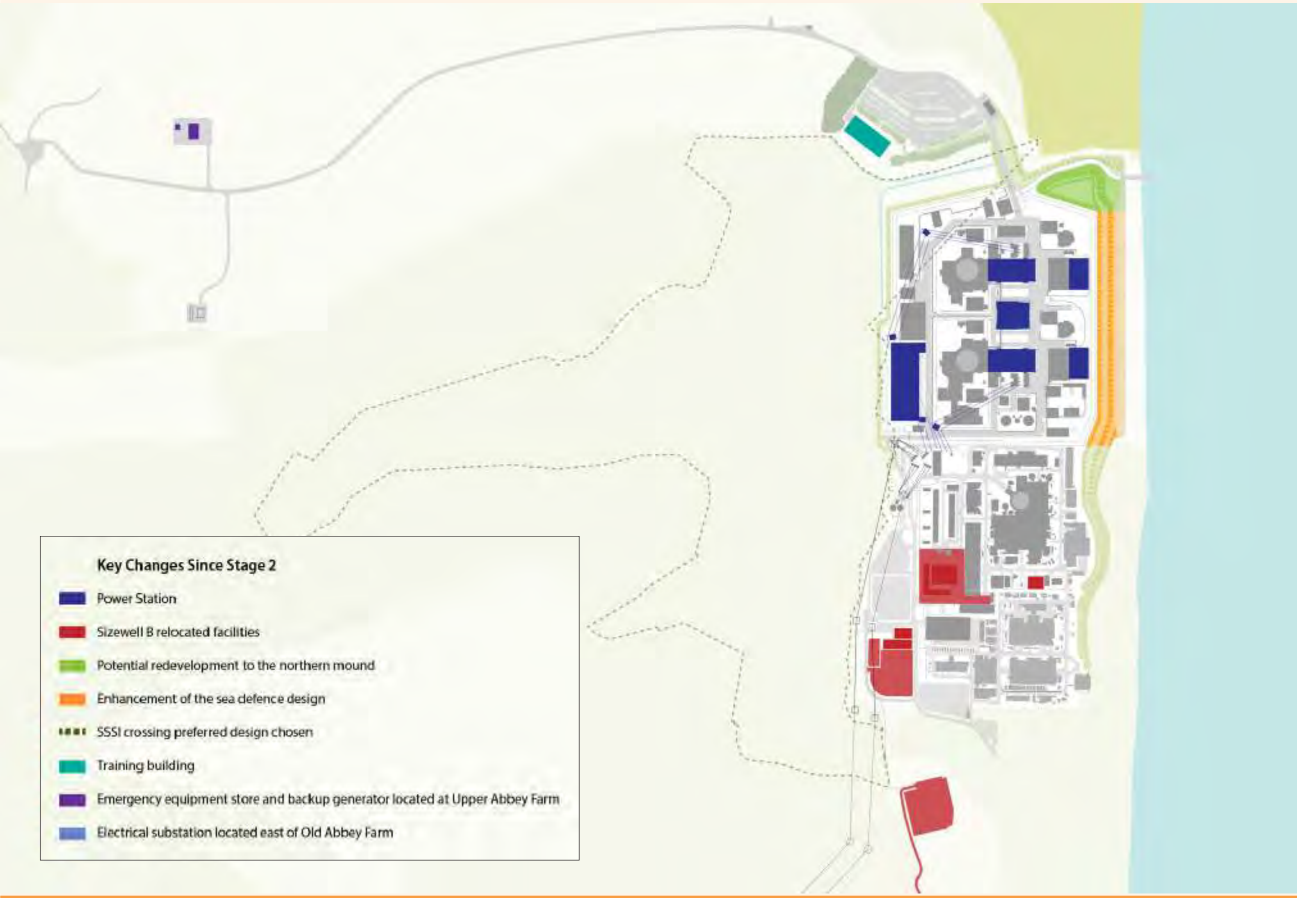
**7.4.1.** The Sizewell C power station would operate 24 hours per day for 60 years, with approximately 900 staff during normal periods of operation.

**7.4.2.** This section covers the main development site during the operational phase and explains the changes made since the Stage 2 consultation, including:

- what the power station and EDF Energy estate could ultimately look like;
- how the design of the permanent development has evolved since the Stage 2 consultation and why; and,
- the outstanding options for consideration.

**7.4.3.** The main changes since Stage 2 are illustrated in **Figure 7.5** and introduced in **Table 7.3.** They are explored more fully later in this chapter.

**Figure 7.5** Permanent development – main changes since Stage 2

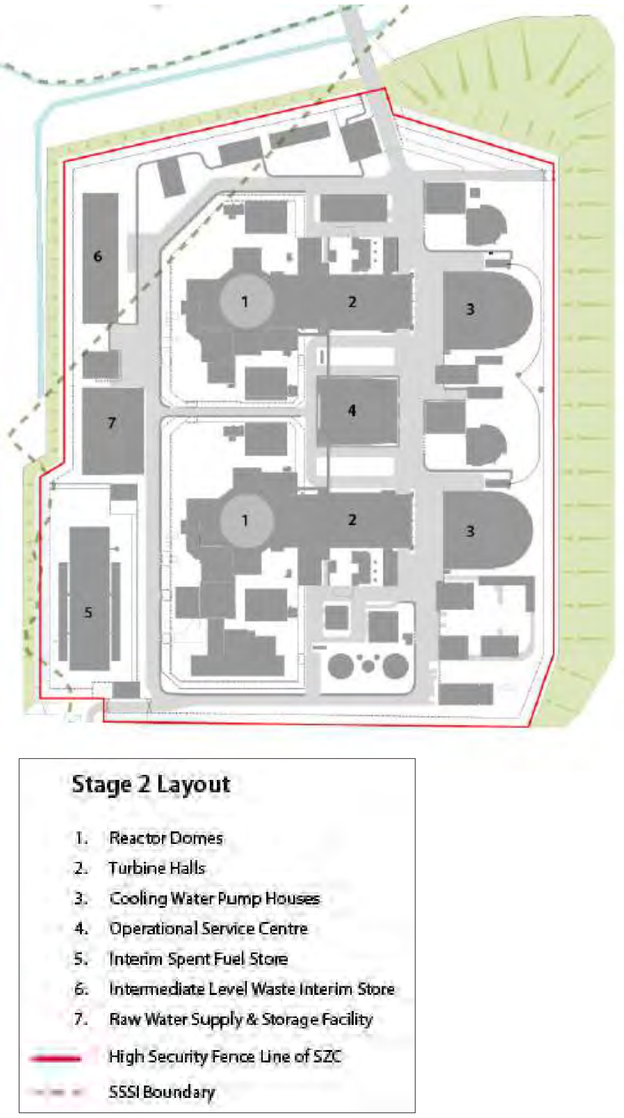


## Table 7.3 Summary of main changes and updates to the permanent development

| Change, operational phase | Summary rationale |
|---|---|
| **Main platform** | |
| Ongoing refinement to the power station design. | We have continued to refine our design for the power station in response to stakeholder feedback, learning from Hinkley Point C and/or ongoing technical, engineering and environmental work, specifically in relation to:<br>• turbine halls;<br>• forebays;<br>• operational service centre;<br>• site offices;<br>• interim spent fuel store; and,<br>• electrical connections to the National Grid substation. |
| **Sizewell B relocated facilities land** | |
| Inclusion of Sizewell B relocated facilities within the application for development consent. | As explained in the Stage 1 and 2 consultations, EDF Energy Nuclear Generation Limited (NGL)[1] , the owner of Sizewell B, intends to relocate the Sizewell B facilities that are currently on the Sizewell C site.<br>Whilst plans to secure planning permission for these works continue, we will seek consent for the works via an application for development consent in order to maintain flexibility in the planning process and reduce programme risks. |
| **Remainder of the main development site** | |
| Potential redevelopment of the northern mound. | The proximity of the northern mound to the Sizewell C power station raises important safety related concerns in its current form. Further studies have shown that it is likely to require rebuilding to a higher specification to help withstand risks from both earthquakes and coastal flooding. |
| Enhancement of the sea defence design | We have continued to progress our designs to provide an effective sea defence and landscape feature for Sizewell C. |
| SSSI crossing preferred design chosen. | We are progressing with the SSSI crossing in the form of a causeway over a culvert, which we consider best responds to environmental and programme considerations. |
| Training building design and location progressed. | We have furthered our work on this building to create a sensitive concept design in visual terms, which we have concluded should be located north of the main platform, adjacent to the main car park. |
| Emergency equipment store and backup generator located at Upper Abbey Farm. | A Combined Heat and Power (CHP) plant would be likely to be provided for the accommodation campus, although we are considering other technologies. It would be located at Upper Abbey Farm for operational efficiency due to its close proximity to the campus.<br>This plant would then continue to be used during the operational phase as a backup power source for important ancillary buildings and would enhance the resilience of the electrical supply in an emergency situation when normal power sources are lost. |
| Electrical substation located east of Old Abbey Farm. | A new substation is required to complete the electrical connection between the Leiston substation at Sizewell Wents, the emergency equipment store and other ancillary buildings.<br>The substation would also be used to provide an electrical supply during the construction stage, with cabling laid early in the construction programme accordingly. |
| **Wider EDF Estate** | |
| Permanent masterplan progressed. | The proposals for the permanent wider EDF Energy estate have not substantially altered from Stage 2 but have been subject to refinement as set out later in this section. |

[1]EDF Energy Nuclear Generation Limited, Company Number 03076445

## **Figure 7.6** Stage 2 power station layout




### b) Sizewell C power station during the operational phase

**7.4.4.** This section provides information on refinements to the layout and design of the power station. The Stage 2 layout is shown in **Figure 7.6** for reference.

### Nuclear safety buildings, including reactor buildings

**7.4.5.** The nuclear safety buildings would be physically defined by their functions, with an exposed concrete finish which meets design principle 1 and operational requirements. The concrete finish would be derived from its constituent aggregates and formwork arrangement. External components are likely to have a consistent colour and finish across the site to accentuate doors and ladders, add visual interest and aid wayfinding.

**7.4.6.** Some respondents to the Stage 2 consultation sought to explore the potential for the Sizewell C reactor domes to match or reflect the design of the Sizewell B dome. The shape of the Sizewell C and Sizewell B reactor building domes are different and there is also a difference in the design philosophy.

**7.4.7.** The Sizewell B dome has a structural concrete inner shell which forms the primary containment and acts as aircraft crash protection. The outer shell acts as a secondary containment, and is only as thick as it needs to be for structural stability. A two metre gap between the inner and outer shells allows for inspection of the safety critical elements. As no external inspection is required of the secondary containment, the Sizewell B dome is finished in vitreous enamel cladding.

**7.4.8.** The Sizewell C domes would have an outer structural shell surrounding the inner containment. This outer shell will need to be inspected and potentially repaired from the outside to ensure the integrity of the structure is maintained over the operational life of the plant. Inspection and potential repair work will therefore require direct access to the concrete surface.

**7.4.9.** It would be necessary for the external concrete finish to be routinely visually inspected, which is a fundamental difference from the Sizewell B reactor dome. The Sizewell C reactor buildings cannot therefore have cladding or be painted as this would mask any deterioration in the concrete. The same principle applies to all nuclear safety buildings.

### Turbine halls

**7.4.10.** Alongside the reactor buildings, the turbine halls would be the most prominent buildings on the power station. Their relationship with the AONB and the Suffolk Heritage Coast, as well as other prominent buildings at Sizewell A and Sizewell B power stations, is therefore particularly important.

**7.4.11.** As set out in the Stage 2 consultation, there is a specific technical need to follow the principles of the Hinkley Point C design in terms of the size of the turbine halls and how they functionally relate to the reactor buildings and associated infrastructure. Since Stage 2, however, we have developed the architectural design significantly to provide a bespoke and innovative solution to the turbine halls' appearance that celebrates their location within the AONB and Suffolk Heritage Coast without impacting the generic design (in accordance with design principle 1).

**7.4.12.** EDF Energy now seeks to create an elegant and somewhat graceful appearance to what are necessarily large buildings. There would be no perceptible light spill from these buildings and no windows visible from public viewpoints, which is a significant departure from the originally approved Hinkley Point C design and positively responds to respondent feedback.

**7.4.13.** The halls would be clad in a suitable material that continues across each façade to prevent light emission from the structures. The material would potentially be installed from the roof down to approximately 12-15 metres (m) above the finished ground level to maintain this uniformity from public viewpoints. At ground level the buildings would have a recessed robust base, which is screened by sea defences from coastal views.

**7.4.14.** To inform our indicative proposals we have undertaken a colour study of the local area, including existing buildings, vegetation and shingle. The full details of this will be provided as part of the application for development consent in due course.

**7.4.15.** We are currently considering:

- **Type A:** a mill finished grey/silver colour often found on buildings designed for a wide variety of uses, including certain Sizewell B buildings. This would comprise a ridged standing seam system which would provide a uniform pattern to the finish; or
- **Type B:** a lighter colour that is sympathetic to sky and shingle tones in direct sunlight. This would comprise aluminium cladding that could be provided in a variety of colours and textures. Colour could be applied using an anodising process for greater durability and to prevent chipping or peeling over time.

**7.4.16.** Illustrative designs are shown in **Figures 7.7** and **7.8.**

**Figure 7.7** Turbine halls – grey/silver colour, illustrative image

**Figure 7.8** Turbine halls – lighter colour, illustrative image

## Operational Service Centre

**7.4.17.** In addition to the design enhancements proposed for the turbine halls, we are also planning to enhance our design for the Operational Service Centre (OSC). This would positively respond to stakeholder feedback, which sought an innovative and bespoke design that minimises light spill onto the beach and from other public viewpoints.

**7.4.18.** The OSC would be the main focus for the workforce during the power station's operational lifetime. The centre would be in operation 24 hours a day, seven days a week. It would largely comprise of office space, with workshop and warehouse functions at lower levels.

**7.4.19.** To reduce the number of buildings at the main power station entrance, we are also proposing to incorporate our site office into the OSC. Notwithstanding the extra demands on this now combined facility, the efficiency of the building layout would be improved to such an extent that it would have a reduced height and be less visible in the landscape than our proposal for the OSC set out at Stage 2.

**7.4.20.** The OSC would be designed as a courtyard arrangement, with offices arranged around an internal atrium which maximises daylight from the interior of the floorplate and reduces the extent of windows to the external façade. This approach would reduce light spill towards the coast and minimise the visual impact of perceived urban forms along the coastline. The OSC would be located between the two turbine halls and we are seeking to design them as a coherent group of buildings.

## Interim spent fuel store

**7.4.21.** EDF Energy is now proposing the use of dry storage technology within the interim spent fuel store, which entails the storage of spent fuel in concrete and steel canisters rather than wet storage in a pool. This concept is very similar to that in use at Sizewell B. The size of the building would increase as a result in order to maintain efficient cooling. This is because a greater distance between each cask is needed for dry storage compared with wet storage. Dry storage would not however need a gaseous discharge stack (i.e. chimney); this was proposed to be 55m tall. Additionally, there would no longer be a requirement for external heat sink equipment.

**7.4.22.** Therefore, whilst the size of the building would increase, the form of the building would be simpler and would contain less visual 'clutter'. This would eliminate the necessity for the external façades of the building to be constructed of concrete and so cladding could be applied to suit the design principles.

## Forebays

**7.4.23.** There would be one forebay for each EPR™ reactor unit. The forebays would receive water from the intake tunnels and a single cooling water intake would feed directly into each open forebay. The forebay structures are now rectangular in shape rather than semi-circular as shown in the Stage 2 consultation. This is similar to the layout identified in the Stage 1 consultation and is consistent with a change in design agreed for Hinkley Point C, where this shape was found to be more resilient to silt deposits. The forebay structures are not visible from the majority of public viewpoints.

**Figure 7.9** Operational service centre, illustrative view

## Changes to the electrical connection to National Grid substation

**7.4.24.** It would be necessary to provide an electrical connection between Sizewell C and a National Grid substation to export the net electrical output from Sizewell C of approximately 3,340MW.

**7.4.25.** In the Stage 2 consultation we said that electrical connections from Sizewell C would be made via underground cables to a new National Grid 400kV substation, which would be located adjacent to the existing Sizewell B substation. We also said that additional overhead cabling near to Sizewell C was unlikely.

**7.4.26.** However, design work carried out since Stage 2 and further development of plans for the construction of the main platform has highlighted that there are significant safety and programme risks with constructing and operating an underground cable option that would conflict with design principles 1 and 2:

- Additional underground galleries would be required to contain the power export cables, requiring deep excavation and dewatering close to the Sizewell B perimeter security fence and within the existing Sizewell B National Grid substation.
- The excavation could also risk the ground stability close to certain Sizewell B structures, which is unlikely to be resolvable without significant loss of land within the Sizewell Marshes SSSI.
- Even if more land in the SSSI was made available, the excavation would still occupy a very congested area of the site where important construction activities are already planned and where key infrastructure would need to be installed, leading to delays to the construction programme.
- The nature and location of the additional galleries would mean that crossing points underneath other buildings and structures would require additional safety classification, which would lead to programme delays.
- Notwithstanding the above physical constraints, the designs of the electricity generators, transformers and protection systems are also closely linked to the electrical characteristics of the connection to the National Grid. Underground cables present different electrical characteristics, which would require major redesign of key parts of the power station plant if this solution was pursued. These would all lead to significant programme delays.
- In addition to the above, an overhead connection is a significantly more reliable and cost effective proposal that would ultimately deliver better value to customers.

**7.4.27.** For those reasons we now propose to connect Sizewell C to the new National Grid 400kv substation via an overhead line. **Figures 7.10, 7.11, 7.12** and **7.13** show views of the proposed connection from different locations and identify the pylons.

**7.4.28.** We also stated in the Stage 2 consultation that it is likely one existing National Grid pylon would need to be relocated to allow the existing overhead lines to connect to the new substation, but further studies were needed to confirm the details of this connection.

**7.4.29.** This work would be undertaken by National Grid and we have included additional land within the SSSI to allow for the overhead lines to be installed to the relocated pylon (see **section 7.5**). This process typically involves running pilot wires at ground level, which are then lifted up onto the pylons and the cables fed through. Whilst this will lead to the permanent routing of lines over a small part the SSSI, there are unlikely to be any long-term impacts at ground level and no additional pylons would be required within the SSSI. Further details from National Grid on their approach to construction will be reflected in our application for development consent.

**Figure 7.10** National Grid connection, view looking south-west from Sizewell Beach East of Goose Hill


**Figure 7.11** National Grid connection, view looking south-east from Sandlings Walk at Goose Hill


**Figure 7.12** National Grid connection, view looking north-east from Junction of Footpaths at The Walks

**Figure 7.13** National Grid connection, view looking south from National Trust Dunwich Coastguard Cottages car park


### c) Sizewell B Relocated Facilities

**7.4.30.** Since the Stage 1 consultation EDF Energy Nuclear Generation Limited (NGL), the owner of the Sizewell B power station, has stated its intention to relocate the Sizewell B facilities that are currently on the Sizewell C site to other areas to the south of the Sizewell B complex. The relocation of these Sizewell B facilities would create a more concentrated development within the Sizewell B site, whilst providing upgraded and improved facilities that meet modern standards and requirements. The scheme would also facilitate the use of the land on which they are currently located for the Sizewell C Project.

**7.4.31.** The existing facilities proposed to be relocated comprise a range of education, administrative and infrastructure services. The facilities include the Sizewell power station complex visitor centre, technical training centre (and their combined parking area), an outage store, outage offices, outage laydown area, outage car park, contractor laydown, operations training centre; and additional training facilities, Rosery Cottages garage, projects office, workshop and store areas. The plan in **Figure 7.14** illustrates the facilities that need to be relocated and where they are proposed to be relocated.

**7.4.32.** Within the Sizewell B station site security perimeter, a potential location has been identified for the new outage store and an outline development zone has been identified for the administration, storage, welfare and canteen facilities.

**7.4.33.** Outside of the station site security perimeter, Coronation Wood has been identified as the proposed location for the training centre, visitor centre, laydown area, an operational car park together with a new circulatory access road (the 'Coronation Wood development area'). This would result in the removal of trees and vegetation in Coronation Wood.

**7.4.34.** Pillbox Field has been identified as the proposed location for an outage car park and access road (see **Figures 7.15** and **7.16** for proposed locations and current design proposals for the Coronation Wood area and Pillbox Field).

# **Figure 7.14** Relocated facilities proposed site layout plan

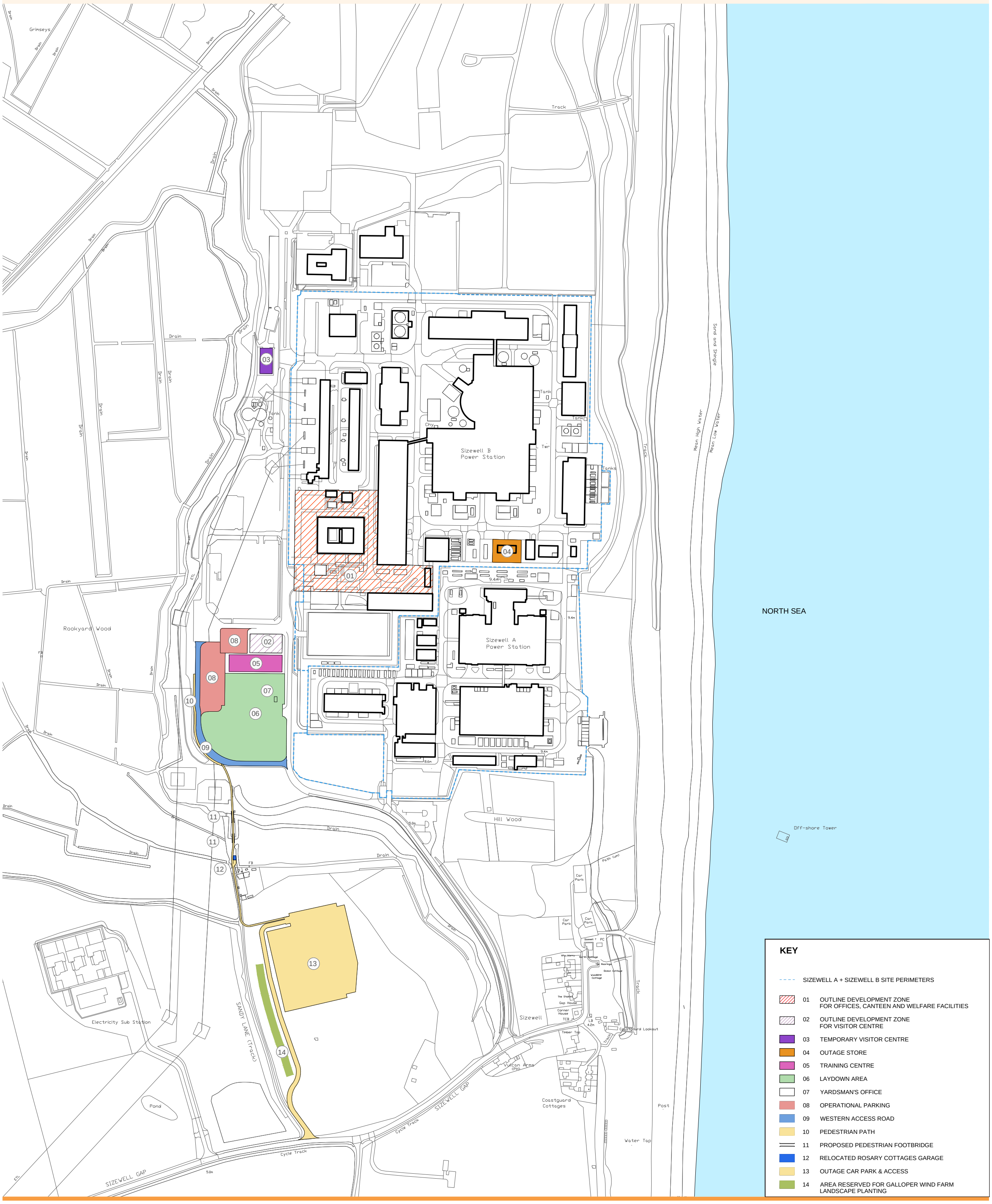


**Figure 7.15** Relocated facilities: Coronation Wood, illustrative image

**Figure 7.16** Relocated facilities: Pill Box Field, illustrative image

**7.4.35.** NGL intends to undertake these works, referred to as the Sizewell B Relocated Facilities Project, in advance of development consent being secured to construct and operate a new nuclear power station at Sizewell C so that the development of nationally significant infrastructure is not delayed. As such NGL intend to apply for these proposed works through a Town and Country Planning Act 1990 (TCPA) planning application to Suffolk Coastal District Council (SCDC). A scoping opinion was provided by SCDC in 2016 and pre-application engagement with SCDC and other key stakeholders will continue until determination of the planning application.

**7.4.36.** In applying for these proposed works through a planning application to SCDC, the Sizewell B Relocated Facilities Project would facilitate the Government's policy objective of more rapid development of new nuclear power, by ensuring earlier delivery of Sizewell C than if the relocation proposals were included as part of the application for development consent for the Sizewell C Project. There is precedence for bringing forward early and/or preparatory works associated with Nationally Significant Infrastructure Projects (NSIP) under the TCPA, ahead of the grant of a Development Consent Order (DCO). This includes the site preparation works associated with the construction of two new nuclear reactors at Hinkley Point C, which were secured by a full planning permission (Local Planning Authority reference: 3/32/10/037) granted by West Somerset Council.

**7.4.37.** Nevertheless, as these are such critical elements to facilitate the construction of Sizewell C, it is important for EDF Energy to be sure that these works will be consented and undertaken. Therefore, the proposals for Relocated Facilities will be included within our application for development consent for the project.

**7.4.38.** The planning application to SCDC will be a mixture of detailed and outline proposals. A more detailed description of the proposed Relocated Facilities, including their design and proposed use is provided below.

**7.4.39.** Facilities to be applied for in detail:

- **outage store –** this is proposed to be located inside Sizewell B station site security perimeter to the south of Sizewell B turbine hall and four storeys in height;
- **outage laydown –** this is proposed to be located outside the Sizewell B station site security perimeter, at the southern end of Coronation Wood development area. It would comprise a general storage facility and working area for operational use primarily during outages. It would be used for the storage of plant and equipment and possibly mobile workshops, temporary office accommodation and storage of containers to a maximum height of 6m during outage periods. When the station is not in an outage the area would be used flexibly for operational activities including maintenance work, storage and car parking;
- **outage car park –** this is proposed to be located outside the Sizewell B station site security perimeter, at the northern end of Pillbox Field. This would be a surface level car park for approximately 580 spaces and likely be constructed with a grass reinforcement system base, rather than as a traditional car park. Vehicular access would be provided via a new route off Sandy Lane from Sizewell Gap. A small section (approximately 60m) of the southern end of Sandy Lane would be upgraded to an asphalt surface that is wide enough to facilitate two-way traffic movements. The car park would be used during Sizewell B outages only, with scheduled outages taking place for an approximate three month period every 18 months;
- **technical training and visitor centre car parking –** this is proposed to be located outside the Sizewell B station site security perimeter, to the west of the Coronation Wood development area. It would provide approximately 100 car parking spaces. The car park would be surfaced with a heavy duty permeable block paving;
- **training centre –** this includes the technical training centre, operations training centre and additional training facilities in a single three storey building. It is proposed to be located outside the Sizewell B station site perimeter, at the northern end of the Coronation Wood development area. The design of the facility would be in keeping with the existing ancillary buildings;
- **western access road –** this is proposed to be located outside the Sizewell B station site security perimeter. It is proposed to be a linear route running along the southern and western edges of the Coronation Wood development area. The new road would reduce the interface between pedestrians and vehicles on the main access road during both construction and operation, and thus improve safety; and
- **Rosery Cottages garage –** outside the Sizewell B station site security perimeter. A replacement garage would be constructed to the east of its current location.

**7.4.40.** Facilities to be applied for in outline (with detailed approval at a later stage):

- An outline development zone within the Sizewell B station site perimeter is proposed to provide for the relocation of the outage office, projects office, outage portacabins, base area facility, civil workshop, civil store area and existing buildings currently within the outline development zone (e.g. existing station entrance, modular projects building, canteen, administration building and pre-fabricated projects building. It is proposed that a maximum of six buildings would be constructed for these facilities, two of which could be extensions to buildings such as the existing administration building and workshop and stores building. The design would respond to the functional requirements and extent of replacement of existing facilities currently located within the zone. The building materials and appearance would be in keeping with the existing ancillary buildings.
- Sizewell power station complex visitor centre – this is proposed to be located outside the Sizewell B station site perimeter and located at the north end of the Coronation Wood development area. Whilst the detailed design of the visitor centre is not yet complete, it is anticipated that the building would include exhibition spaces, media centre, viewing area, classrooms and offices. The design of the facility would use some of the elements, materials and form of the existing ancillary buildings, but would articulate these differently to reflect the public facing aspect of the function and location.

### d) Remainder of the EDF Energy estate during the operational phase

#### North of the power station at Goose Hill

**7.4.41.** The proposed Sizewell C operational masterplan (see **Figure 7.27**) illustrates the route of the proposed access road from the B1122 (Abbey Road) to the power station.

**7.4.42.** A permanent two lane access road continues to be proposed, with a segregated route for cyclists and pedestrians. The road width would be reduced following construction and designed to establish a corridor similar in character to a country road, while maintaining safe access/egress. The permanent access road would not be lit, apart from the junction with the B1122, the vehicle search area facility, operational car park and associated facilities. An entry relay store lies adjacent to the access road and the vehicle search area facility would be provided on the Sizewell approach.

**7.4.43.** An operational staff car park and training facilities remain proposed at the eastern end of the access road. The car park would be designed to accommodate around 1,335 spaces divided between permanent parking spaces for day-to-day operation (approximately 735) and spaces required during outage periods when the training facilities would be in use (approximately 600). Designs for this area have now progressed significantly and we are able to propose an indicative solution that allows for less intensively used areas associated with the training facilities to have a 'softer' appearance, as shown in **Figure 7.17.**

**7.4.44.** We also identified in the Stage 2 consultation that there is the potential for training facilities to be located in the vicinity of the car park. Further details have now been progressed for the training building in this location and are set out below.

#### Training building

**7.4.45.** The training building would be located to the south-west of the main car park, which is the lowest lying part of the main entrance area. The building is likely to be set into the landscape, reducing its visual prominence upon Goose Hill and providing a physical buffer to the SSSI.

**7.4.46.** The training building would accommodate a full scope simulation of the reactors and therefore has a large footprint, which would be sculpted in response to surrounding natural forms. It would be the primary tool for training operators and would also contain a range of classrooms and other training facilities.

**7.4.47.** The design has progressed from the Hinkley Point C original to suit the local landscape context and is now likely to comprise a single storey building rather than a two-storey building. The indicative proposal illustrates a curved roof profile supporting the building's integration into its immediate setting. The building is orientated to face the SSSI providing an attractive setting for staff without creating significant light spill onto bat commuting corridors.

**7.4.48.** It is necessary to locate the training building close to the power station for operational efficiency and to avoid the logistical problems associated with sending staff to other locations away from the plant for training. We consider that staff need to be within close walking distance of the power station to minimise time spent away from the site. This ensures that staff are better able to respond rapidly when required to both planned and unplanned training events.

**7.4.49.** The training building must be located outside of the perimeter security fence as this allows future staff who do not yet have the necessary safety and security clearance to carry out their training. It also allows the building to be operational before the power station is complete to frontload staff training.

**7.4.50.** We have explored the possibility of sharing a training building with Sizewell B power station, as they also require a new facility in order to provide vacant land for the construction of Sizewell C and upgraded and improved facilities. However, the two power stations operate using different technologies and there is therefore minimal overlap in terms of common training facilities.

**7.4.51.** A shared facility would result in a much larger training centre, leaving insufficient space for the laydown area. The training centre also needs to be next to the Sizewell C outage car park, as it is used for site inductions during outages.

**7.4.52.** Similarly, sharing a building within the Goose Hill area would result in greater impact on the AONB.

## **Figure 7.17** Masterplan showing power station entrance at Goose Hill

LEGEND

| | |
|---|---|
| 1A | Existing woodland |
| 1B | Proposed woodland |
| 2 | Tree planting along southern boundary |
| 3 | Main East-West pedestrian route |
| 4 | Main North-South pedestrian routes |
| 5 | Southern green buffer |
| 6 | Trees within carparking areas |
| 7 | Landscape bund around Training Centre including swale depression, species rich grassland, small groups of broadleaf trees, swale planting |
| 8 | Delivery area with secure gate |
| 9 | Gentle slope to accommodate level change to road |
| 10 | Potential grass roof - low maintenance |
| 11 | Fabrication area |
| 12 | Off Site Vehicle Search Area |
| 13 | Entry Relay Store |
| 14 | Security Control and Access Building |

Permanent carparking (735 spaces)

Outage carparking (600 spaces)

Training centre visitor carparking (70 spaces)

## Figure 7.18 Training building, illustrative view

### SSSI crossing

**7.4.53.** The SSSI crossing provides an essential pedestrian and vehicular connection across Sizewell Marshes SSSI, linking the power station with the access road. It will form a key part of the main entrance to the power station both during operation and construction.

**7.4.54.** The Sizewell Marshes are important for their large area of lowland, unimproved wet meadows, which support outstanding assemblages of invertebrates and breeding birds. Several nationally scarce plants are also present. We have therefore carefully considered the most appropriate method for crossing this land.

**7.4.55.** At Stage 2 we committed to locating the crossing towards the north-east corner of the main platform. This is the closest practicable location to the narrowest part of the SSSI corridor. This corridor contains the Sizewell Drain and leads to the Minsmere-Walberswick Heaths and Marshes Special Area of Conservation (SAC), Special Protection Area (SPA) and SSSI.

**7.4.56.** We identified four potential methods for crossing the SSSI at Stage 2, as set out in **Table 7.4**.

**7.4.57.** We received varied feedback from respondents that primarily focussed on the following concerns:

- loss of SSSI land and associated habitat;
- restrictions to the movement of wildlife along the corridor; and,
- increased flood risk.

**7.4.58.** We are proposing to proceed with a refined version of Option 1. Details relating to the construction process are set out in the construction section of this chapter.

**7.4.59.** The design comprises a causeway with a culvert, through which the Sizewell drain would flow. The width of the embankment at road level would be approximately 35m and the overall width of the crossing at its base would be approximately 65m, assuming embankment side slopes at a 1:2 gradient. An illustrative drawing showing how the embankment could look during the operational phase is shown in **Figure 7.19**.

### SSSI land and associated habitat

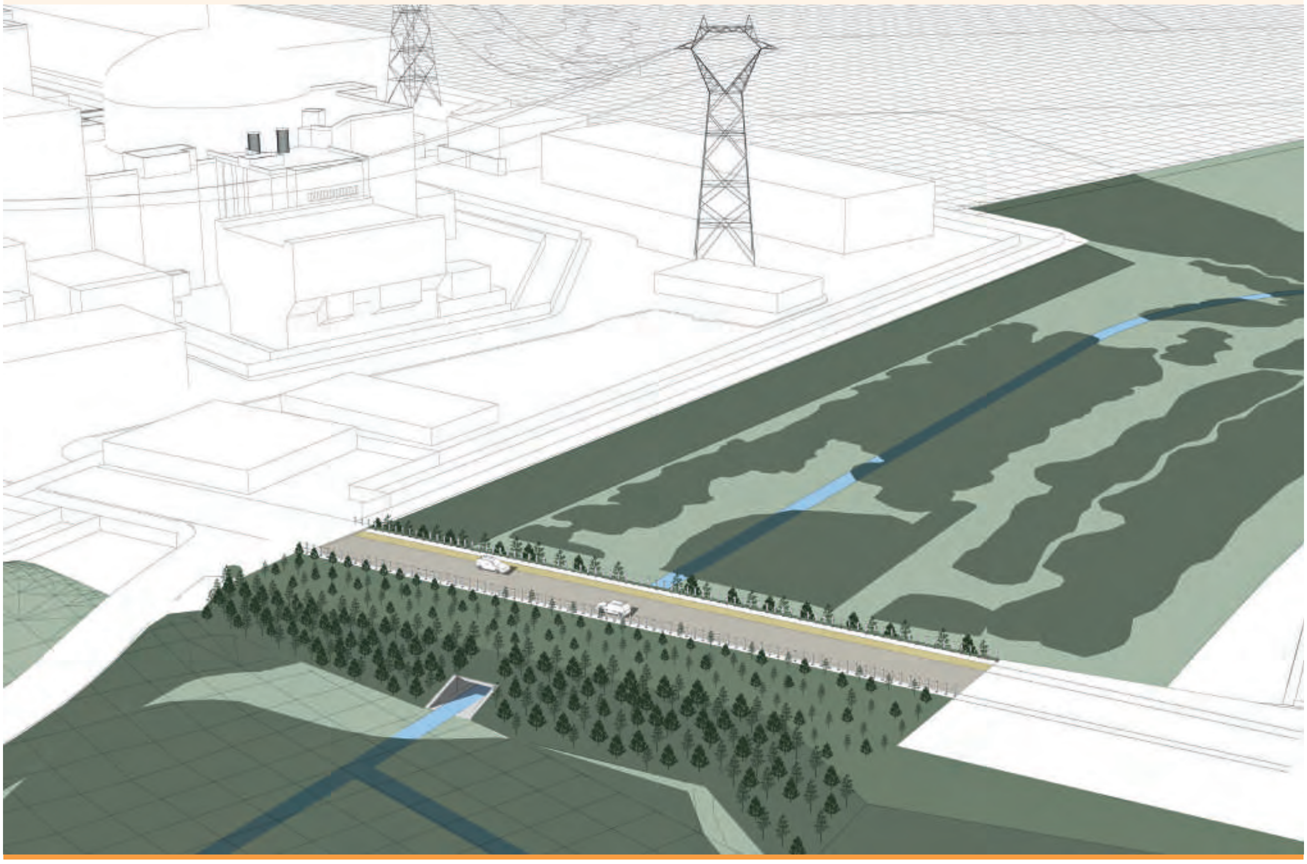
**7.4.60.** The amount of SSSI and associated habitat loss has been an important consideration in identifying our final choice. The difference in land take between the four options identified above is around 0.25 hectares (ha). The bridge options require the least SSSI land whilst the causeway options require the most. Our final choice requires 0.1ha less SSSI land than Option 4, which was for a narrower causeway with an adjacent temporary bridge. This is due to the size of the foundation areas required to build the temporary bridge under Option 4.

**7.4.61.** The proposed crossing would be the most straightforward operation in the SSSI, as it would involve a single and time-limited procedure. Once constructed the surroundings would be left undisturbed, as there would be no need to remove temporary structures and re-profile land, as would be required with the other three options.

## Table 7.4 Stage 2 options for crossing Sizewell Marshes SSSI

| Change, operational phase | Summary rationale |
|---|---|
| **Option 1:** Causeway over culvert | An embankment wide enough for both permanent and temporary road crossings. |
| **Option 2:** Single span bridge with vertical wing walls | A short-term bridge to be used in the early phase of construction.<br>A permanent bridge, which would also be used for part of the construction phase.<br>On completion of construction the temporary bridge would be removed. |
| **Option 3:** Three span bridges | A short-term bridge to be used in the early phase of construction. This bridge would be dismantled once the temporary bridge is complete.<br>A temporary bridge, which would be used for the remainder of the construction phase. This bridge would be dismantled at the end of the construction phase.<br>A permanent bridge, which would also be used during construction, to be built on the site of the short-term bridge. |
| **Option 4:** Causeway over culvert with adjacent short-term bridge | A variant of Option 1, with a narrower causeway for use during construction and operation of the power station.<br>A short-term bridge would be required in the early phase of construction. |

## Figure 7.19 SSSI Crossing during operation, illustrative drawing



**7.4.62.** We would set the embankment side slopes at the minimum practicable gradient that would still allow landscaping to grow, which we believe is a gradient of 1:2. At this slope grassland, scrub and potentially some trees would grow over time, which would help integrate the crossing into the surrounding landscape. This compares starkly with the bridge options, which would appear as distinct elements in the landscape in local views.

**7.4.63.** SSSI land lost to the crossing would predominantly comprise areas of reedbed and wet woodland.

**7.4.64.** Wet woodland is not a feature for which the SSSI is designated, although it is a Suffolk Biodiversity Partnership priority habitat. The majority of wet woodland within Sizewell Marshes SSSI would be retained.

**7.4.65.** Compensation for the loss of reedbeds has been provided as part of the Aldhurst Farm habitat creation scheme. Following detailed pre-application consultation with stakeholders, including Natural England and the Environment Agency, planning permission was granted in 2015 to create approximately 6ha of wetland habitat, including ditches and wet reedbed together with drier marginal reed habitat, set within a 67ha site. Work on the Aldhurst Farm habitat creation scheme is now complete and included the planting of over 100,000 reeds.

### Movement of wildlife along the corridor

**7.4.66.** The crossing has been designed with ecology in mind. The culvert is significantly larger than is required for operational purposes and provides sufficient dimensions to leave the bank and channel of the Leiston Drain completely intact. The culvert would be of sufficient size to facilitate the passage of bats and water voles through the structure and retain its function as an ecological corridor. A ledge would also be installed to enable passage by otters.

### Flood-risk

**7.4.67.** The culvert has been designed to mitigate flood risk in response to consultation feedback.

**7.4.68.** Following the construction phase, the temporary haul road would be removed and landscaped. The overall width of the crossing would remain, as this provides the opportunity to adapt the crossing in future if required. We consider that our proposed arrangements for protecting the power station against flood risk are robust. However, if in future further adaptation is required, the landscaped area of the crossing could potentially be raised to provide further protection to the power station from flood risk. Unlike the bridge options, this adaptation could take place with no additional loss of SSSI land.

## East of the power station along the coast

### Northern mound

**7.4.69.** The northern mound is a substantial landscape feature to the north of Sizewell beach. It is made up of spoil that was extracted during the construction of Sizewell B and provides a visual screen to land to the north.

**7.4.70.** As explained at Stage 2, due to the close proximity of this area to the future Sizewell C main platform, the Northern Mound's function must expand from a landscape feature also to a sea defence. The mound would tie in to the proposed Sizewell C defences, which in turn would tie in to the Sizewell B sea defences to provide a continuous defence structure. It would also need to be strong enough to withstand the unlikely event of a significant earthquake in the local area.

**7.4.71.** It is not yet known whether the northern mound has the structural strength to provide adequate protection from flood risk or earthquake risk over the lifetime of Sizewell C. We currently consider it unlikely that it will be strong enough and we will confirm this through ground testing prior to the submission of the application for development consent.

**7.4.72.** This consultation document therefore assumes that the northern mound would need to be removed and rebuilt during the construction phase, complete with the structural strengthening necessary to help protect the power station.

**7.4.73.** The current northern mound is 12m in height. Trees and other vegetation located on the mound provide approximately an extra 5-9m of screening.

**7.4.74.** The replacement sea defence would need to be at least 10.2m in height to meet its flood protection requirements. We are proposing to raise the height of the mound to 14.2m, which along with replacement planting would provide screening of lower power station structures within the main platform.

**7.4.75.** Construction of the mound and planting would be undertaken as early in the construction process as reasonably practicable to maximise screening and increase the time for new planting to establish. Earthworks and planting would be focussed initially on the outer, public facing edge of the mound to help screen ongoing construction works behind. Embankment slopes would be appropriately designed to allow vegetation to establish.

**Figure 7.20** Northern mound, existing and proposed view looking south-west from Sizewell Beach east of Goose Hill

**7.4.76.** The access road to the beach landing facility (BLF) (see below for more details) would be incorporated into the mound but would be largely obscured from view once vegetation has established. It is likely to comprise a level section partway up the side slope of the mound connecting the beach to the main platform level.

**7.4.77.** Reconstruction of the mound would provide the potential to create a bespoke landform that fully integrates with and incorporates the requirements of the power station.

### Sea defence

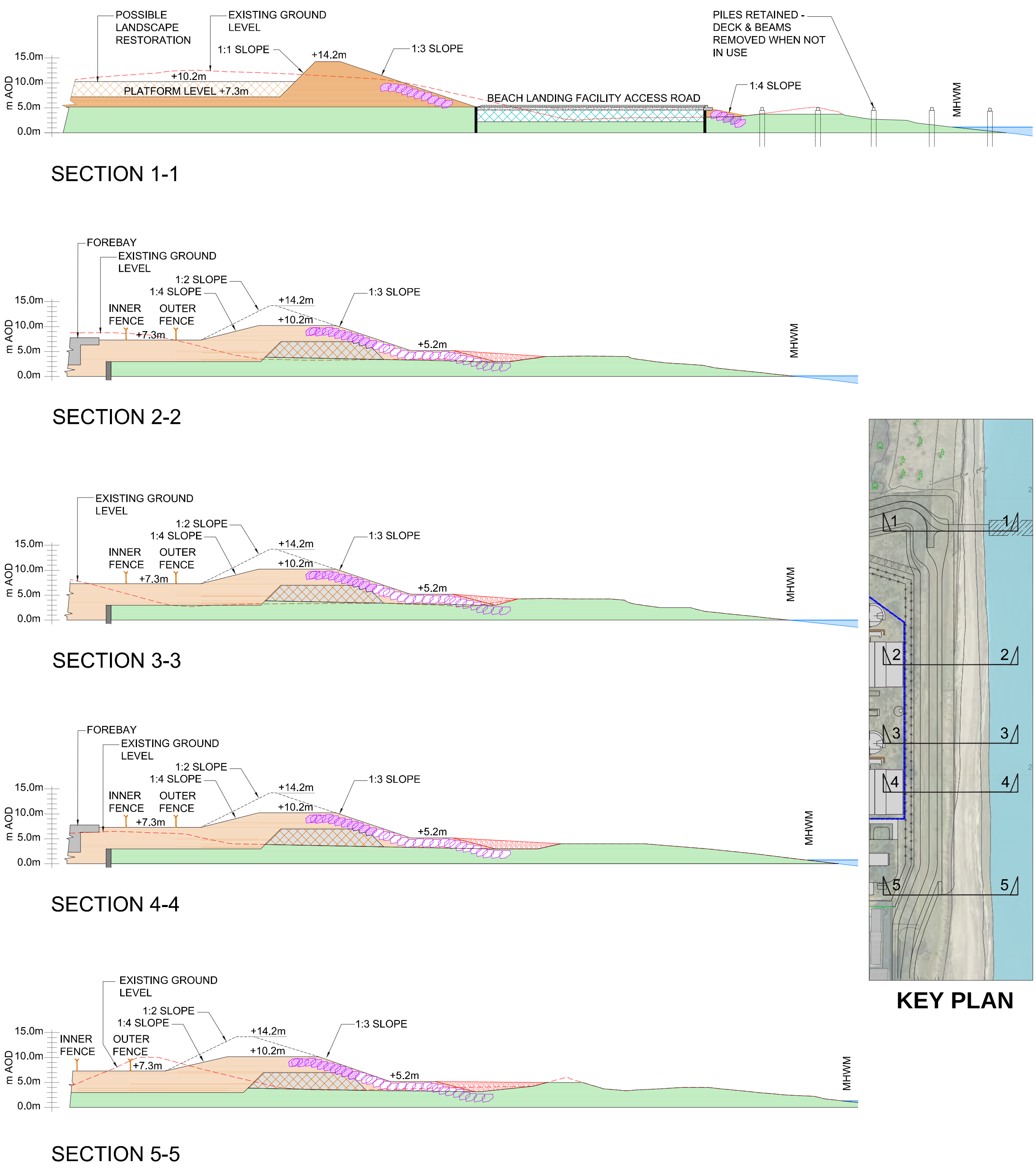
**7.4.78.** A new sea defence is required along the coastline to protect the power station from flooding during storm surges and high waves. It would consist of a large earth embankment with 'rock armour' under the surface and along its length to provide extra strength and help protect it from erosion.

**7.4.79.** There have been no significant changes to the majority of the design of the permanent Sizewell C sea defence since the Stage 2 consultation.

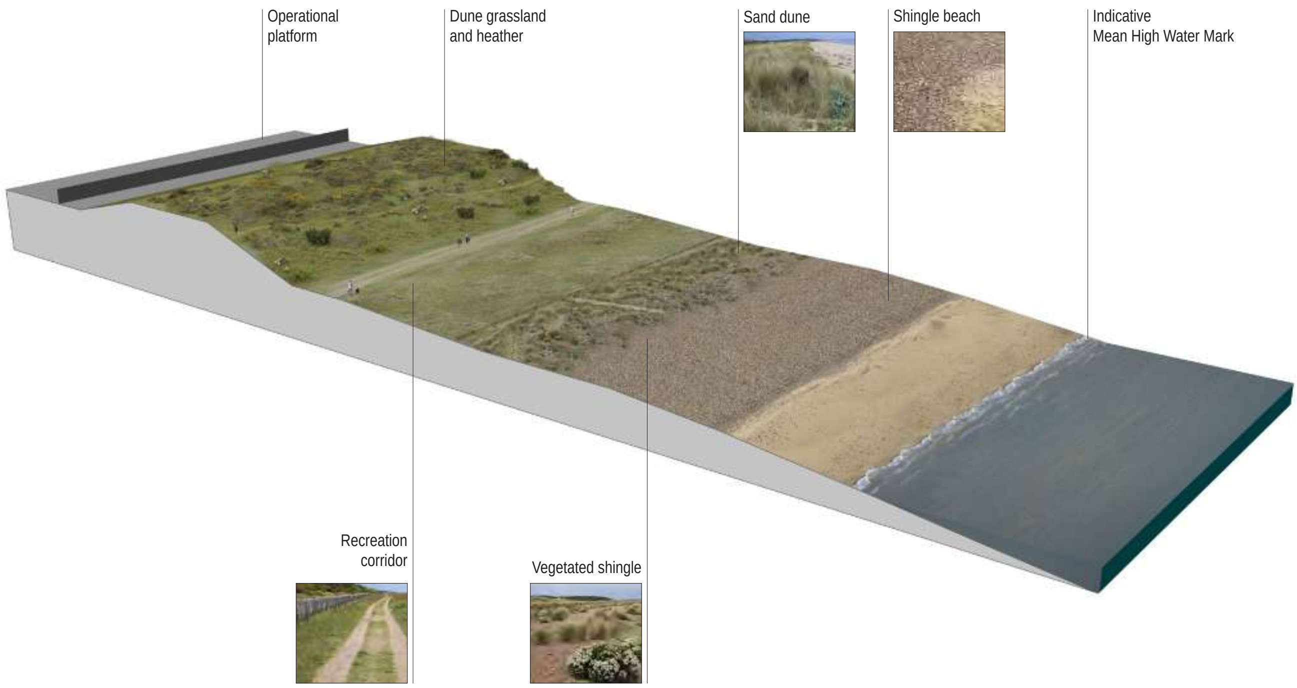
**7.4.80.** The defence would provide screening to the lower portions of the main platform buildings from the coastal path, permit a wide grassy recreation corridor to be retained along the coast and access to the lower slopes of the sea defence. The character of the defence illustrated in Stage 2 have not altered and would have a predominantly sand dune character blending into the proposed wooded character of the new northern mound. The proposed designs are shown on **Figure 7.21** and **Figure 7.22.**

**7.4.81.** Similar to the northern mound, the sea defence would need to be at least 10.2m in height to meet its flood protection requirements. We are proposing to also raise the peak height to approximately 12m in height to provide additional screening of Sizewell C from certain public viewpoints along the beach.

**Figure 7.21** Sea defences typical sections (operation)



## **Figure 7.22** Sea defences, illustrative image



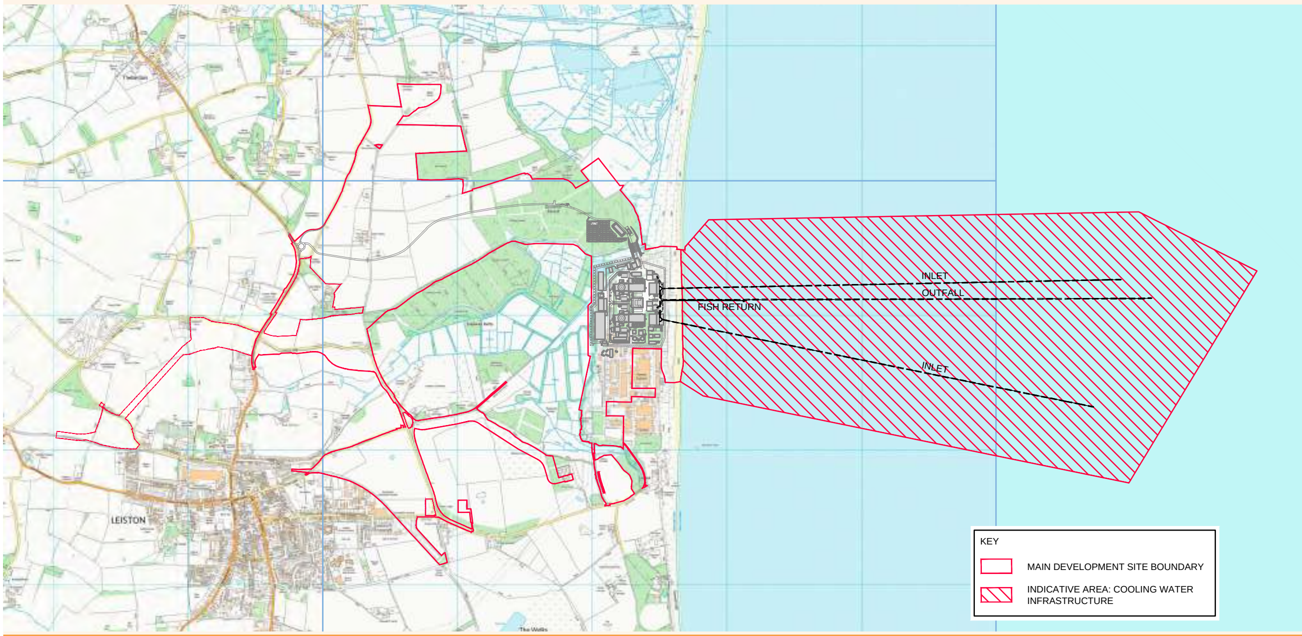
## Cooling water infrastructure

**7.4.82.** As set out at Stage 2, Sizewell C would require the installation of sea water intake and outfall structures on the seabed as part of the cooling water system to ensure the safe and efficient operation of the power station. There would be two intake tunnels linking these structures to the power station, each with one or two intake heads. A single cooling water discharge tunnel, with two outfall heads, would extend out beneath the sea from the power station as shown on **Figure 7.23**.

**7.4.83.** All of the intake and outfall heads would be situated east of the Sizewell Banks, around 3 kilometres (km) (subject to final engineering design) from the shore, at depths of approximately 13-15m below Ordnance Datum.

**7.4.84.** A Fish Recovery and Return (FRR) system would be fitted to each UK EPR™ to remove fish from the cooling water system and help return them safely back to sea. Each FRR would include a dedicated tunnel extending a few hundred metres offshore.

**Figure 7.23** Cooling water infrastructure: illustrative layout



## West of the power station towards Abbey Road (B1122)

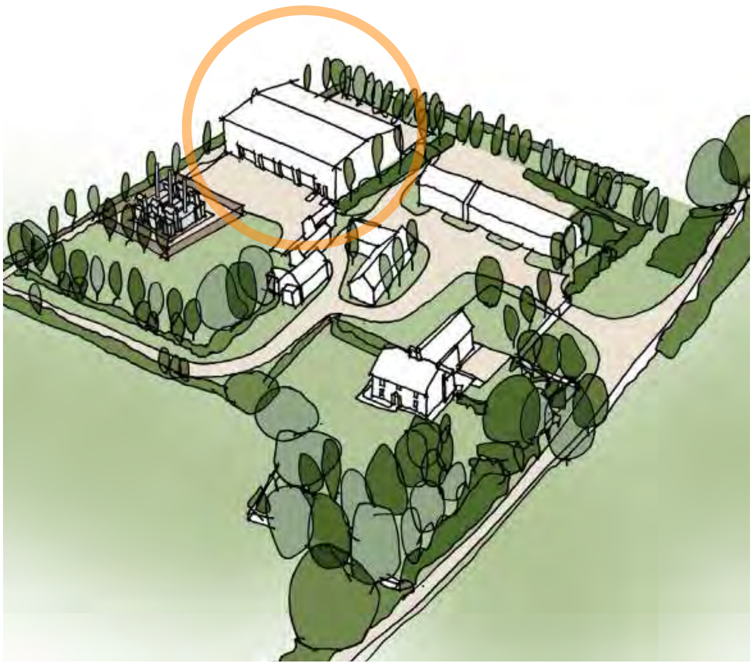
### Emergency equipment store at Upper Abbey Farm

**7.4.85.** An emergency equipment store would be required close to the power station to enable a rapid response to an emergency event. We propose to locate this store adjacent to Upper Abbey Farm farmhouse in place of an existing building which is within the EDF Energy estate. The design of the building will seek to be in keeping with the agricultural nature of the existing buildings within the Upper Abbey Farm complex and could resemble a contemporary barn structure. It would contain the necessary equipment including vehicles to respond to foreseeable types of emergency. Due to the specialist nature of this equipment it is likely that the building would need to be up to approximately 11m tall with a footprint of around 40m by 30m.

**7.4.86.** We consider that locating the facility off the main access road and outside of the AONB is the most appropriate location as this will help to reduce safety risk whilst also avoiding unnecessary development within the AONB.

**7.4.87.** An image showing how the emergency equipment store could look is shown at **Figure 7.24.**Backup generator at Upper Abbey Farm.

## **Figure 7.24** Emergency equipment store – illustrative sketch



Timber cladding

Dark metal cladding

Red brick

Red tile

### Backup generator at Upper Abbey Farm

**7.4.88.** During the Stage 2 consultation we stated that a number of potential energy supply technologies are under consideration for the accommodation campus, including a centralised CHP plant.

**7.4.89.** The accommodation campus would have a significant demand for heating and hot water. A gas fired CHP plant is proposed adjacent to Upper Abbey Farm, in place of an existing structure which is within the EDF Energy estate, although we are considering other technologies.

**7.4.90.** A CHP plant typically provides a very efficient energy supply, by capturing heat that would otherwise be lost through electricity generation and by the efficiencies gained from being on-site, close to the point of need.

**7.4.91.** The CHP plant is likely to comprise three units each with approximate dimensions of 5m (width), 15m (length) and 3m (height). The indicative design of the CHP comprises structures that would complement the proposed emergency equipment store that will be developed in response to the Upper Abbey Farm context.

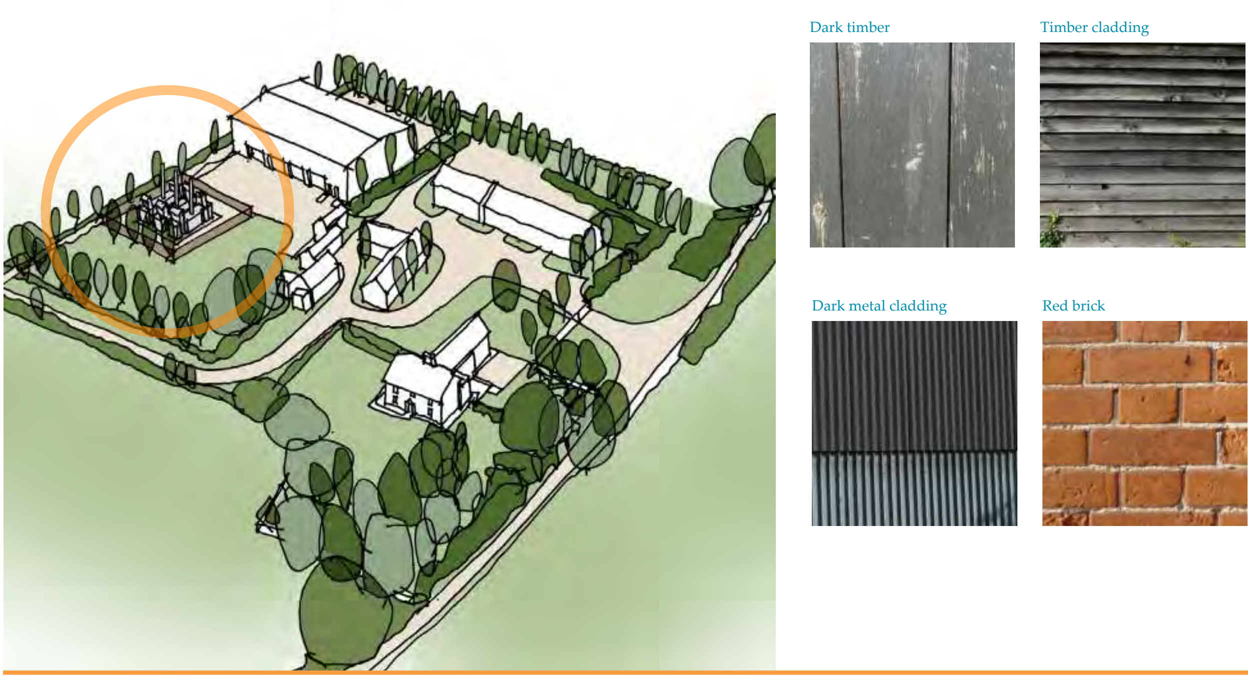
**7.4.92.** The accommodation campus is only required to support construction and so ultimately it would be removed and the land restored.

**7.4.93.** We are proposing to retain the CHP plant and put it to continued use during the operational phase of the power station as a backup generator.

**7.4.94.** Post-construction, the CHP plant would be used primarily as a backup power source to the emergency equipment store. If connected to the power station, then the generator could reduce the need for a large number of small diesel generators and could enhance the resilience of the electrical supply in an emergency situation when normal and existing backup power sources are lost.

**7.4.95.** An image showing how the backup generator could look is shown on **Figure 7.25**.

**Figure 7.25** Backup generator – illustrative sketch



### Electrical substation south of Upper Abbey Farm

**7.4.96.** A new substation is proposed to provide an electrical supply during the construction phase, with associated cabling laid early in the construction programme accordingly.

**7.4.97.** We are also proposing to retain the substation during the operational phase to complete the electrical connection between the Leiston substation at Sizewell Wents, the emergency equipment store and other ancillary buildings.

**7.4.98.** The location for the substation lies to the south of Upper Abbey Farm within a field west of Bridleway 19. The substation compound would measure approximately 60m x 60m, with the main building within the compound being around 7m in height and the electrical infrastructure around 5m in height. The façade treatment of the building and boundary treatment to the facility would seek to support its integration into the immediate landscape. The facility would be surrounded by secure fencing accessed by a road extending south from the main power station access road.

**7.4.99.** An image showing how the substation could look is shown at **Figure 7.26**.

## North of Sizewell Gap and south of Sandy Lane

### Helipad

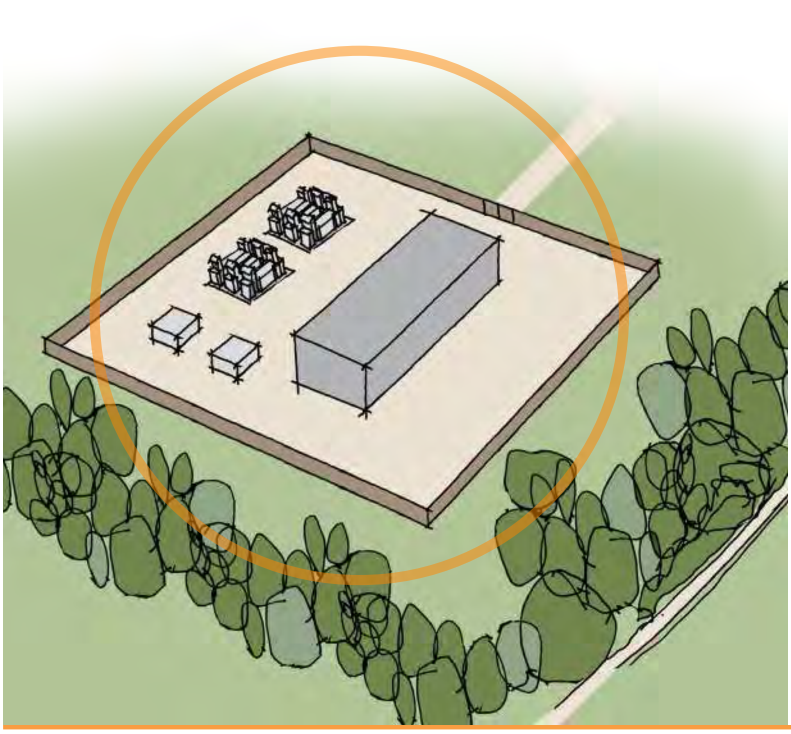
**7.4.100.** Sizewell B currently use the northern outage car park for the landing of helicopters. This will need to be moved to provide space for the Sizewell C main platform and therefore a new helipad will be applied for in the application for development consent. As the helipad does not need to be replaced as early as the other facilities to be relocated, it is not proposed to be included within the relocated facilities planning application described above. The helicopter landing pad would serve both Sizewell B and Sizewell C and would continue to be used infrequently. The proposed location for this continues to be in the southern part of the EDF Energy estate in the Sizewell Gap area, as shown in **Figure 7.26**.

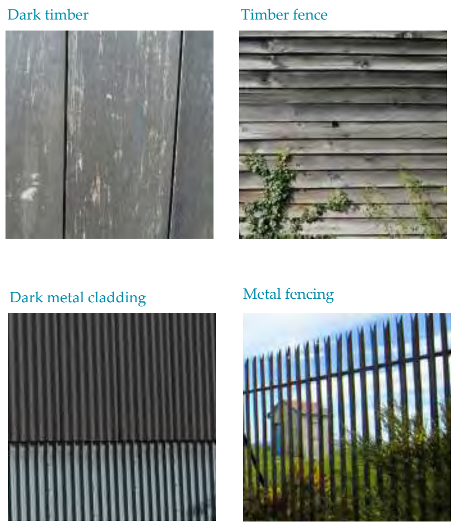
### Permanent masterplan

**7.4.101.** The permanent proposals for the wider EDF Energy estate beyond those elements described above have not substantially altered from Stage 2, with a strategy for establishing extensive lowland heathland and new and enhanced woodland cover.

**7.4.102.** The masterplan proposals would help to mitigate the landscape and visual effects of the power station

**Figure 7.26** Electrical substation – illustrative sketch





development within the AONB, as well as delivering ecological mitigation and enhancement. More generally, the proposals would enhance the wider landscape, ecology and recreational value of the AONB.

**7.4.103.** Following construction, land used temporarily would be restored through a combination of woodland planting and the creation of heath, scrub and acid grassland. Habitat creation would be extended to cover the agricultural land within the Estate, which includes the Aldhurst Farm habitat creation scheme. This would result in a substantial tract of interconnected semi-natural habitat being created from the borders of Minsmere Nature Reserve in the north to the heathland areas of Aldringham Walks to the south, with the Sizewell Marshes SSSI and Aldhurst Farm habitat creation scheme constituting an integral wetland feature in between. This would represent a major initiative carried out at a landscape scale for the benefit of people and wildlife. By improving the connectivity between existing habitats with new habitat, there would also be a significant improvement in the resilience of biodiversity in the area.

**7.4.104.** A number of habitat creation schemes such as at Aldhurst Farm and reptile mitigation on the former arable land off Sizewell Gap are already underway. Although the primary aim of this early work is ecological compensation and mitigation for the effects of Sizewell C, these schemes represent a significant step towards the long-term goal of maximising biodiversity and enhancing the AONB.

### Masterplan overview

**7.4.105.** The land use precedents for the proposed masterplan can be traced back to the early 1990s when the site was the subject of a previous nuclear power station proposal for a twin pressurised water reactor (PWR) development, in effect a twin replica of Sizewell B. Similar to the current proposal, the majority of the power station footprint was proposed to be located north of the Sizewell B station on land previously used for Sizewell B construction. The site was proposed to be accessed via a new road routed from the north-west, with a crossing over the SSSI and the landscape restoration scheme involved the creation of heathland across the EDF Energy estate.

**7.4.106.** The current masterplan reflects the need to ensure the power station constitutes a good fit in the landscape, while allowing sufficient space for it to be constructed and operated efficiently and safely. The masterplan also seeks to ensure that opportunities are taken to mitigate impacts and, where possible, improve the overall landscape, ecological and recreational value of the EDF Energy estate. This has been achieved by seeking to retain, as far as is practicable, the essential character of the immediate surroundings of the power station.

### Landscape strategy

**7.4.107.** The overall approach to the landscape strategy remains to restore and enhance areas used during the construction phase, and to take the opportunity to enhance the landscape, biodiversity and recreational value of the wider EDF Energy estate. In addition, the opportunity is being taken to enhance the landscape of those areas subject to early ecological mitigation including Aldhurst Farm and the reptile mitigation area near to Sizewell Gap.

**7.4.108.** The landscape strategy involves phased tree and hedgerow planting across the EDF Energy estate. Some early tree planting around the periphery of the construction site has already been completed and it is proposed to carry out further planting at the start and end of the construction phase.

## e) Parameters for the permanent development

**7.4.109.** Sizewell C is a large and complex scheme that must conform to strict safety and regulatory requirements, which can change with best practice over time. Therefore, as we have learned at Hinkley Point C, designs that are at an advanced stage will still necessarily continue to evolve after the Government grants any development consent for the project.

**7.4.110.** Applying for flexibility within parameters (known as the Rochdale Envelope) means that we will be significantly less likely to need to apply to change the scheme after consent has been granted, which would lead to increased costs and could lead to programme delays. We are cognisant of the sensitivity of the landscape of the area and its AONB designation and as such, the parameters will seek to address these sensitivities with appropriate commitment to good design.

**7.4.111.** The amount of flexibility sought will depend on the sensitivity of the building or structure in terms of environmental effects, and the extent to which the design is already fixed by safety or regulatory requirements. We currently consider they could be categorised into two groups:

- **Group A:** These are the buildings or structures with a high degree of certainty and would be fixed in terms of their maximum length, width and height as a result of the outcome of the GDA. They would be capable of minor variations in their location by up to 5m in any direction.
- **Group B:** These are generally the smaller buildings or structures that are less sensitive in terms of their environmental effects and subject to less safety or regulatory requirements. They would also be fixed in terms of their maximum length, width and height. They would be capable of being located anywhere within defined zones.

## **Figure 7.27** Operational masterplan

NOTES

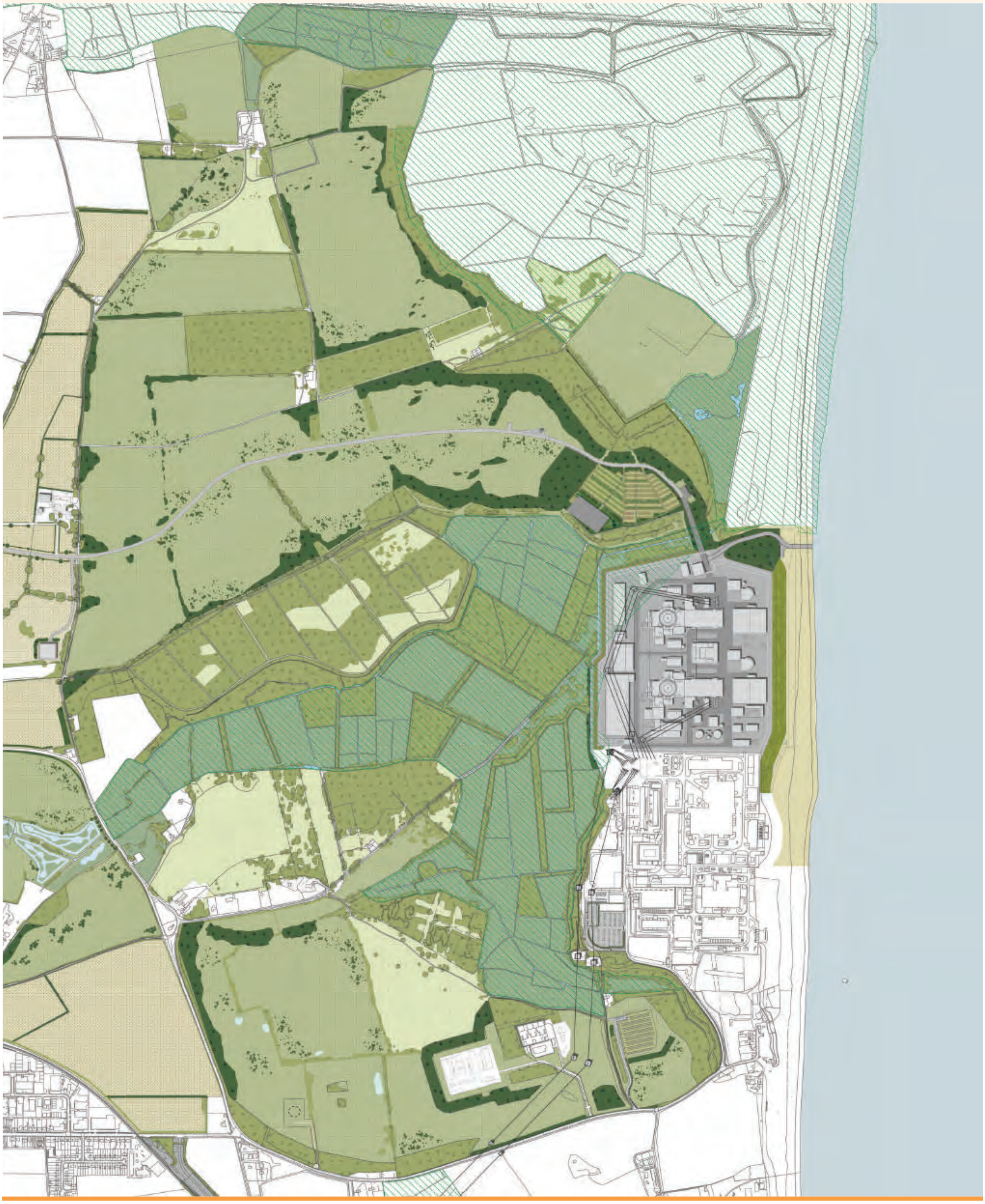
KEY

EXISTING:

- Site of Special Scientific Interest (SSSI)
- Vegetation / Woodland
- Wet Grassland / Reedbed
- Lowland Heath Mosaic
- Ponds, Scrapes, Drainage Channels
- Shingle Beach and Vegetated Dune

PROPOSED:

- Vegetation / Woodland
- Lowland Heath Mosaic
- Improved Pasture
- Vegetated Embankment
- Ponds, Scrapes, Drainage Channels
- Vegetated Sea Defence Structure



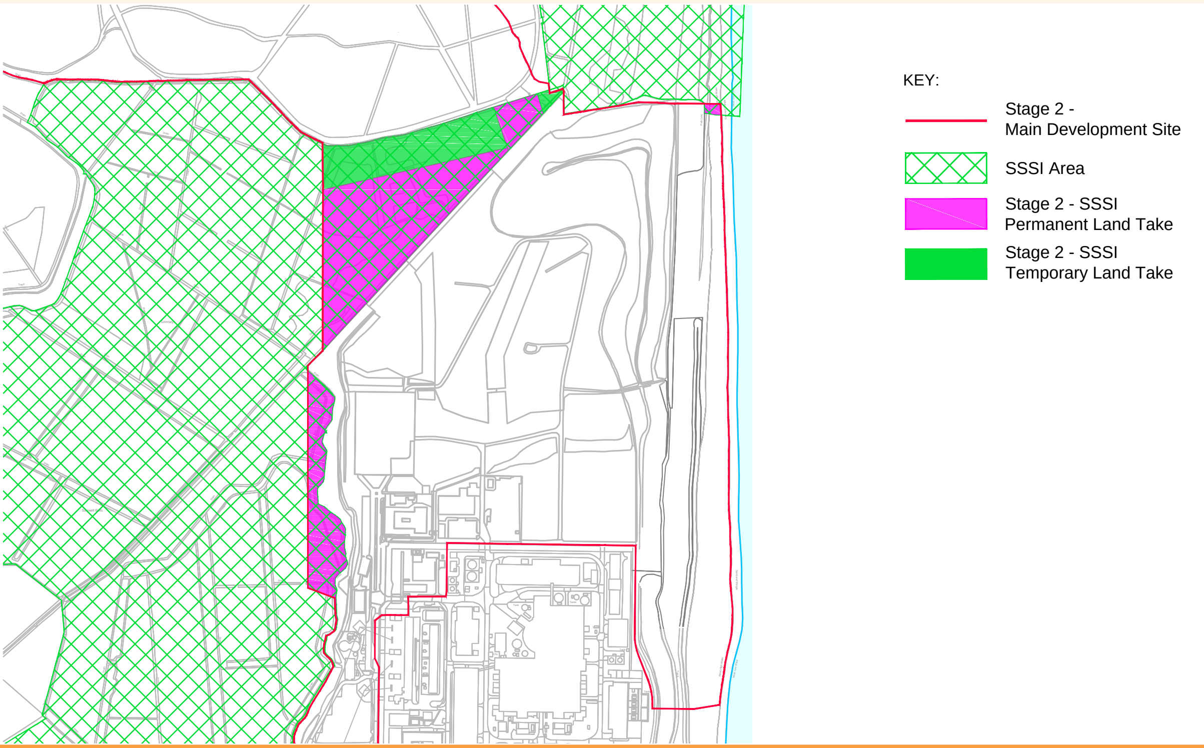
### f) Impact on Sizewell Marshes SSSI

**7.4.112.** The proposed scheme seeks to minimise land-take from within the SSSI. Essential requirements mean that a small proportion of the SSSI would be permanently lost in order to provide access to the power station and to establish the boundary of the main platform. At Stage 2 this loss was 6.06ha. We have worked hard to progress our designs within this area and have not increased the permanent loss of SSSI land since Stage 2.

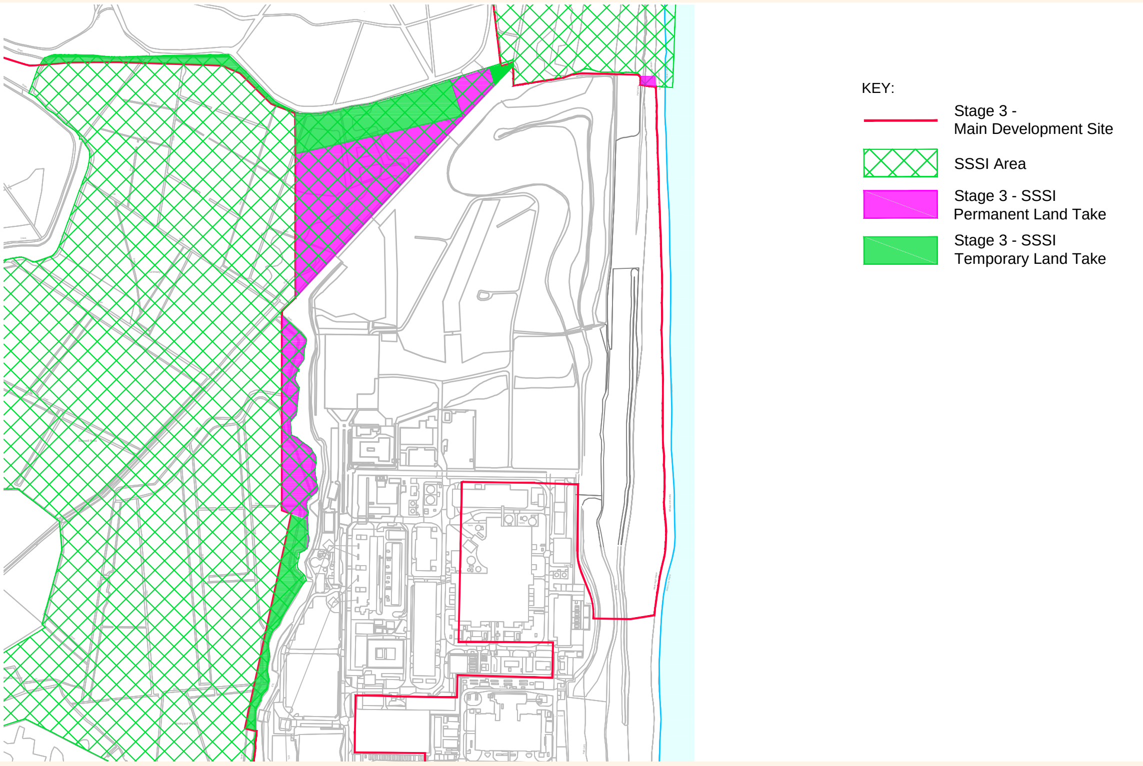
**7.4.113.** Habitats within this area include wet woodland, reed beds, ditches and fen meadow. To provide compensation for this loss EDF Energy has developed a habitat creation scheme at Aldhurst Farm, which is upstream and contiguous with the Sizewell Marshes SSSI. This will provide a series of extensive reed beds with interconnecting ditch habitat within a surrounding matrix of semi-natural acid grassland/heath. Studies are ongoing to also compensate for the loss of the small area of fen meadow.

**7.4.114.** Details of SSSI land required for temporary use during the construction are set out separately in **section 7.5.**

## **Figure 7.28** Changes to land required within Sizewell Marshes SSSI at Stage 2



## **Figure 7.29** Changes to land required within Sizewell Marshes SSSI at Stage 3



## 7.5. Construction phase

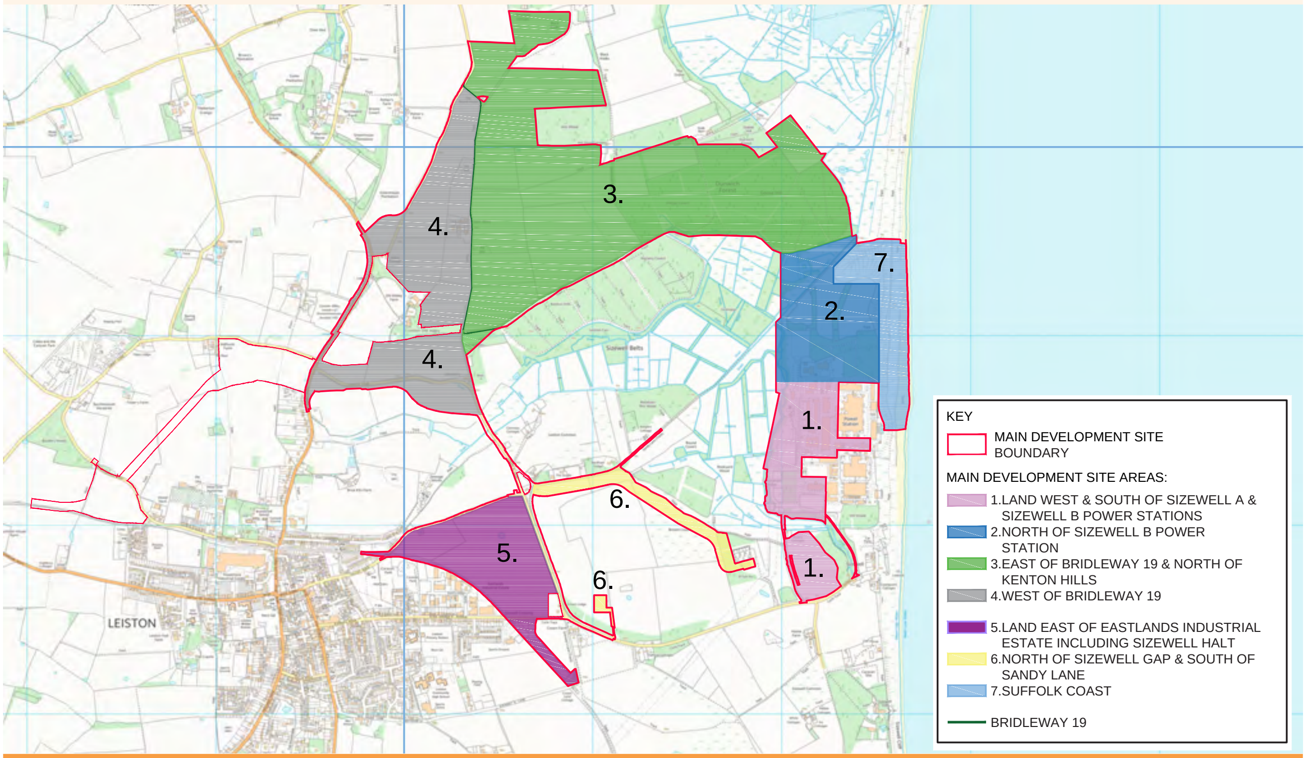
### a) Introduction

**7.5.1.** This section explains the main changes to how the power station would be constructed since Stage 2 and how the main development site would evolve during the construction process.

**7.5.2.** The main development site can be divided into seven areas for the purposes of this chapter, as shown in **Figure 7.30:**

1. Land at, west and south of Sizewell A and Sizewell B power stations.
2. North of Sizewell B power station.
3. East of Bridleway 19 and north of Kenton Hills.
4. West of Bridleway 19.
5. Land east of Eastlands Industrial Estate including Sizewell Halt.
6. North of Sizewell Gap and south of Sandy Lane.
7. Suffolk coast.

**Figure 7.30** Main development site and sub-areas during construction



## **Table 7.5** Summary of main changes since Stage 2 during the construction phase

| Change, operational phase | Summary rationale |
|---|---|
| **North of Sizewell B power station** | |
| Causeway over a culvert option chosen for SSSI crossing. | This option brings construction, cost and adaptability benefits whilst allowing ecological functionality of the SSSI corridor to be retained. |
| Potential redevelopment of the northern mound. | The proximity of the northern mound to the Sizewell C power station raises important safety related concerns in its current form. Further studies have shown that it is likely to require rebuilding to a higher specification to help withstand risks from both earthquakes and coastal flooding. |
| **Land east of Eastlands Industrial Estate (LEEIE), including Sizewell Halt** | |
| Refined rail option identified. | We are proposing a more efficient variant to our previous rail option and explain how this relates to the freight management strategy explained elsewhere in this consultation document. |
| **East of Bridleway 19 and north of Kenton Hills** | |
| Refined approach to spoil management including borrow pits and stockpiles. | We have discounted borrow pit field one identified at Stage 2 and provided more detail on our approach to the remaining fields as borrow pits and stockpiles. |
| Typical boundary treatment conceptual designs progressed. | We now have conceptual designs for the boundaries where mitigation is likely to be needed most. |
| Additional land for water management zones. | We are proposing to increase the water management zones in size to help ensure they can adequately attenuate and, if required, treat surface water run-off prior to discharge to either watercourses or to the ground. The larger site also allows for an access route with perimeter bunding to be added to each zone.<br>The proposed locations are: land adjacent to Lower Abbey Farm; land north of Goose Hill; and, land north of Aldhurst Farm habitat creation scheme. |
| Accommodation campus site reduced. | We have now reduced the extent of the campus to contain it east of Eastbridge Road. |
| **North of Sizewell Gap** | |
| Underground electricity supply cable introduced. | We are introducing new infrastructure to reduce reliance on diesel generators. |
| **Suffolk Coast** | |
| Sea defence design progressed. | We are now providing more details about how the sea defence could look and the phasing of construction. |
| Beach landing facility (BLF) chosen | We have discounted both jetty options and now propose to use the BLF during both construction and operation stages. |

### b) Construction masterplan

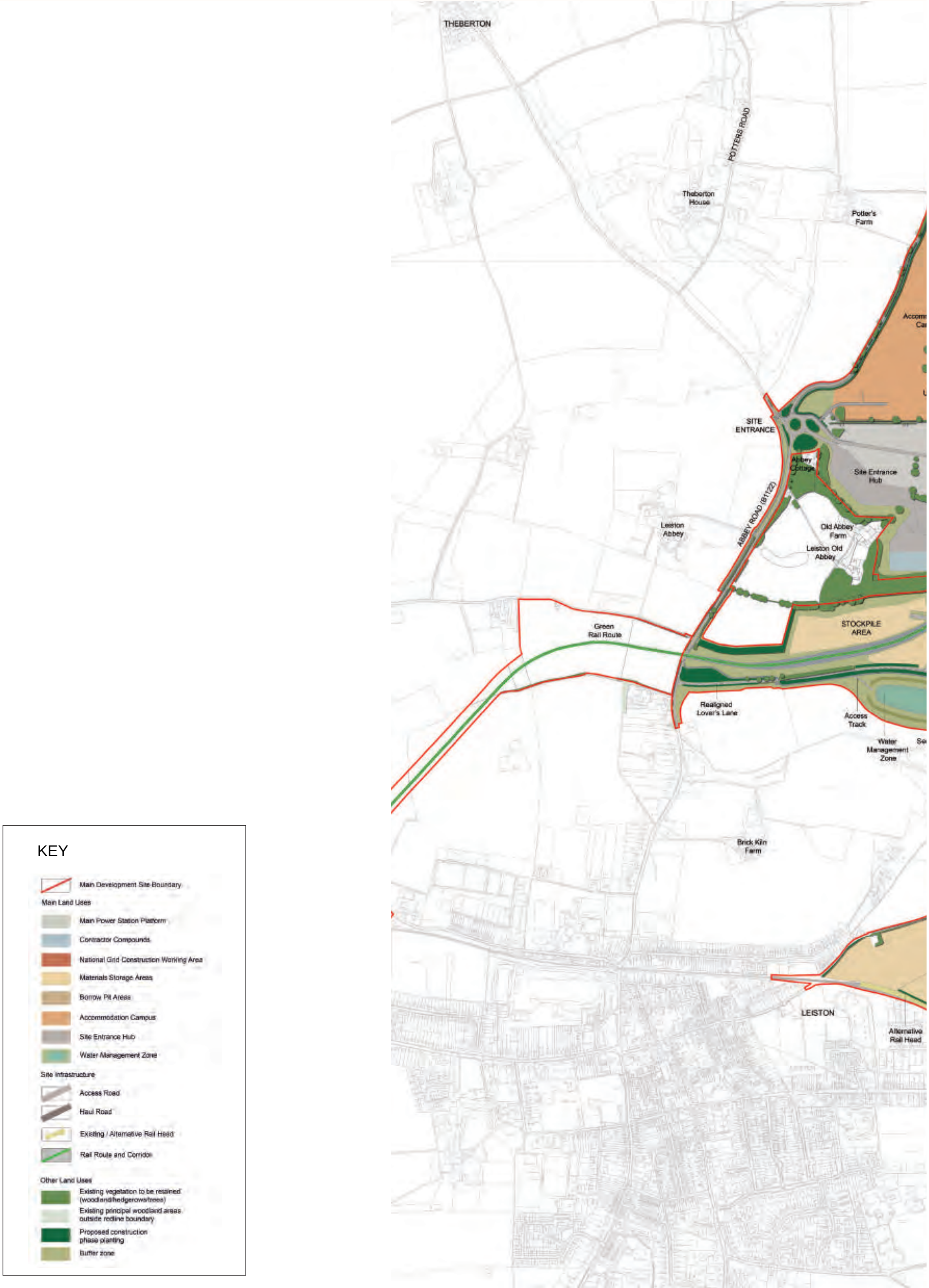
**7.5.3.** Given the scale of the project, a substantial volume of materials, machinery and other specialist equipment would need to be brought to, stored at, processed and removed from the site during the construction phase. This phase, therefore, requires careful planning, including the identification of dedicated construction areas and specific activities that would take place within those locations. This section provides a description of those areas and activities, and how these have been informed by environmental considerations.

**7.5.4.** The siting of the construction land uses and infrastructure has been driven by the need to strike a balance between project efficiency and programme with the recognition of the sensitive nature of the main development site and its surroundings, much of which lies within the AONB and close to important ecological receptors. This has led to the identification of the following siting considerations:

- to locate construction activities with the potential to cause disturbance away from where people live, as far as possible;
- to minimise land take from within Sizewell Marshes SSSI;
- to avoid the most sensitive landscapes within the AONB;
- to limit disturbance to deciduous woodlands, significant hedgerows and tree belts;
- to avoid the non-essential use of land along the foreshore (i.e. in front of Sizewell C) that forms part of the AONB and Suffolk Heritage Coast;
- to be as close as possible to the main platform, to reduce the logistical challenges of moving workers and construction materials, storing and backfilling spoil material and supporting construction activity;
- to locate construction areas near to the proposed access road;
- to use flat and well drained land to avoid substantial re-grading;
- to limit disturbance of retained and newly created habitats;
- to give consideration to the potential for disturbance to European designated habitats, especially the Minsmere to Walberswick SPA, SAC and Ramsar to the north of the site, and the Outer Thames SPA to the east, where cooling water infrastructure is proposed to be located;
- where practicable, to maintain access to recreation and amenity areas including public and permissive rights of way; and,
- to have regard to the setting of key heritage assets.

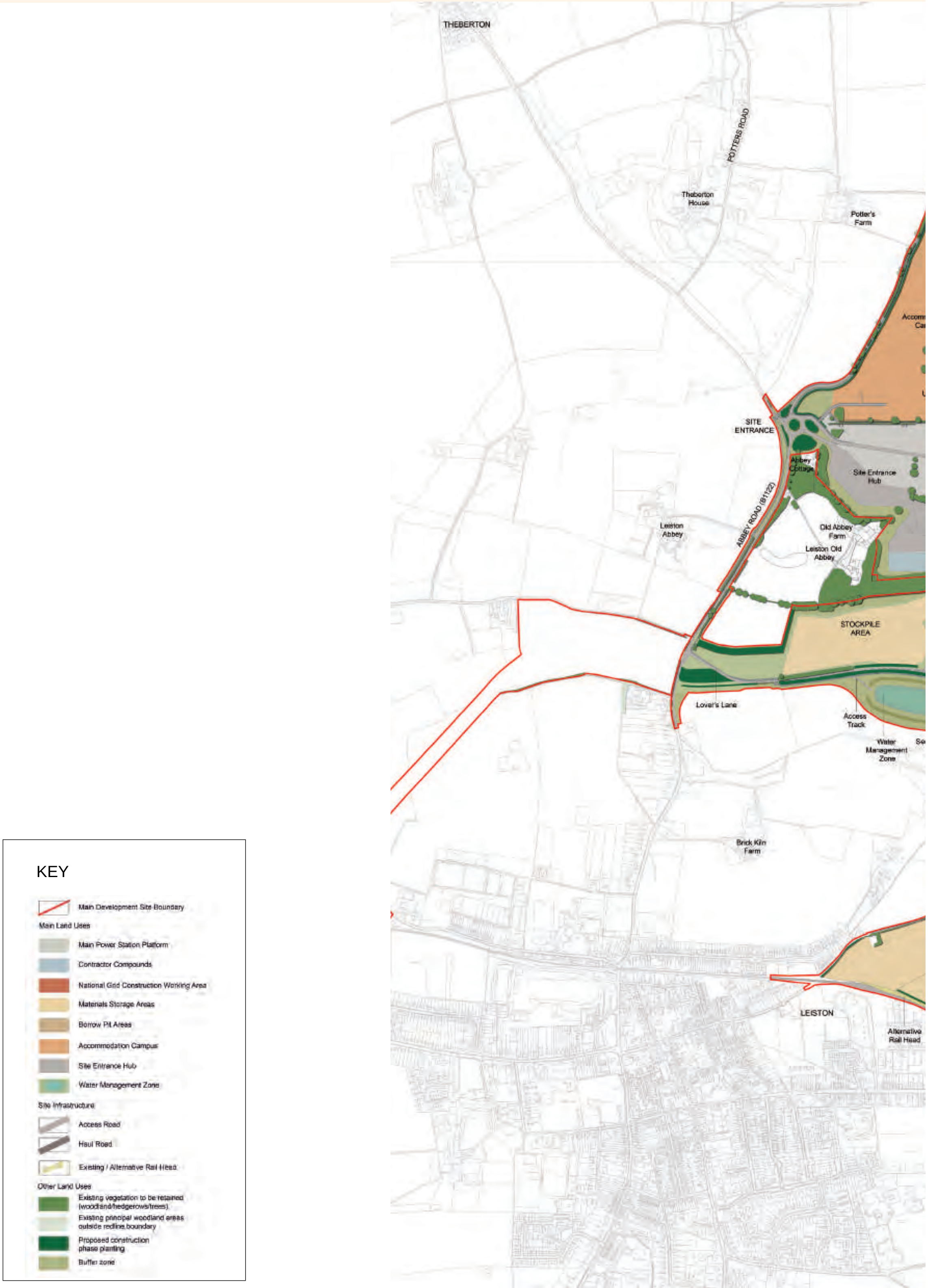
**7.5.5.** **Figure 7.31** and **Figure 7.32** illustrate two potential construction masterplans for the main development site, which vary based on the chosen freight management strategy for the project that is ultimately chosen. The rail-led strategy requires the continuation of the green rail route into the temporary construction area as part of a new branch line off the existing Saxmundham-Leiston line, whereas the road-led strategy does not. Further details on this are set out earlier in this consultation document.

## **Figure 7.31** Construction masterplan: rail led




EASTBRIDGE ROAD
Water Management Zone
BORROW PIT FIELD 2
The Round House
BORROW PIT FIELD 3
Water Management Zone
Access Track
Ash Wood
BORROW PIT FIELD 4 / MAIN STOCKPILE AREA
Great Mount Wood
Dunwich Forest
Water Management Zone
NORTH SEA
Ash Wood Cottages
CONTRACTOR COMPOUNDS
MAIN STOCKPILE AREA
Goose Hill
SSSI Crossing
COMMON USER FACILITIES
CONTRACTOR COMPOUNDS
Sizewell drain
Kenton Hills
Grimseys
MAIN POWER STATION PLATFORM
Realigned ditch
Car park
Perimeter construction access road
National grid construction working area
Sizewell B Power Station
LOVER'S LANE
Common Cottages
Keepers Cottage
Reckham Lodges
The Studio
Sizewell A Power Station
Greater Gabbard substation
LAND TO THE EAST OF EASTLANDS INDUSTRIAL ESTATE
Galloper substation
SIZEWELL VILLAGE
PILLBOX FIELD
NORTH SEA
Crown Lodge
Existing rail head

## **Figure 7.32** Construction masterplan: road led



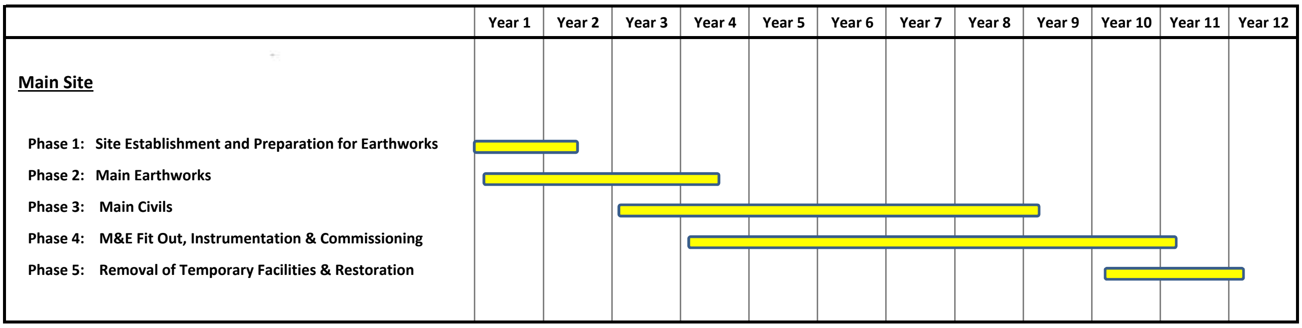

EASTBRIDGE ROAD
Water Management Zone
BORROW PIT FIELD 2
The Round House
BORROW PIT FIELD 3
BORROW PIT FIELD 4 / MAIN STOCKPILE AREA
Ash Wood
Ash Wood Cottages
Water Management Zone
Great Mount Wood
Access Track
Dunwich Forest
Water Management Zone
NORTH SEA
CONTRACTOR COMPOUNDS
MAIN STOCKPILE AREA
Goose Hill
SSSI Crossing
COMMON USER FACILITIES
CONTRACTOR COMPOUNDS
Sizewell drain
Kenton Hills
Grimseys
MAIN POWER STATION PLATFORM
Car park
Realigned ditch
Perimeter construction access road
National grid construction working area
Sizewell B Power Station
LOVER'S LANE
Common Cottages
Keepers Cottage
Reckham Lodges
The Studio
Sizewell A Power Station
Greater Gabbard substation
LAND TO THE EAST OF EASTLANDS INDUSTRIAL ESTATE
Galloper substation
PILLBOX FIELD
SIZEWELL VILLAGE
NORTH SEA
Crown Lodge
Existing rail head

## c) Construction phasing

**7.5.6.** Construction of the power station would take between 9 and 12 years, with an expected phasing of 12 months between the commissioning of Unit 1 and Unit 2. Construction is anticipated to be undertaken in five main phases, although these phases would overlap as work on different phases would be undertaken simultaneously in different areas across the main development site. An illustrative construction programme is set out at **Figure 7.33.**

**7.5.7.** The five phases of construction are explained below.

**Figure 7.33** Construction phases – illustrative construction programme



## Phase 1 – Site establishment and preparation for earthworks

**7.5.8.** This phase principally involves preparation of the site for development and establishment of temporary infrastructure to enable the later phases of construction. Environmental works would involve archaeological excavations and translocation of protected species from the main development site to receptor sites nearby. The Sizewell Drain in the Sizewell Marshes SSSI would be diverted to enable development in the north-west corner of the SSSI. The cut-off wall required to isolate the deep excavations from the groundwater would be constructed. The main platform would be prepared with initial utility connections, site clearance, establishment of temporary welfare facilities, security fencing ready for the construction sea defence and piling platform for the cut-off wall.

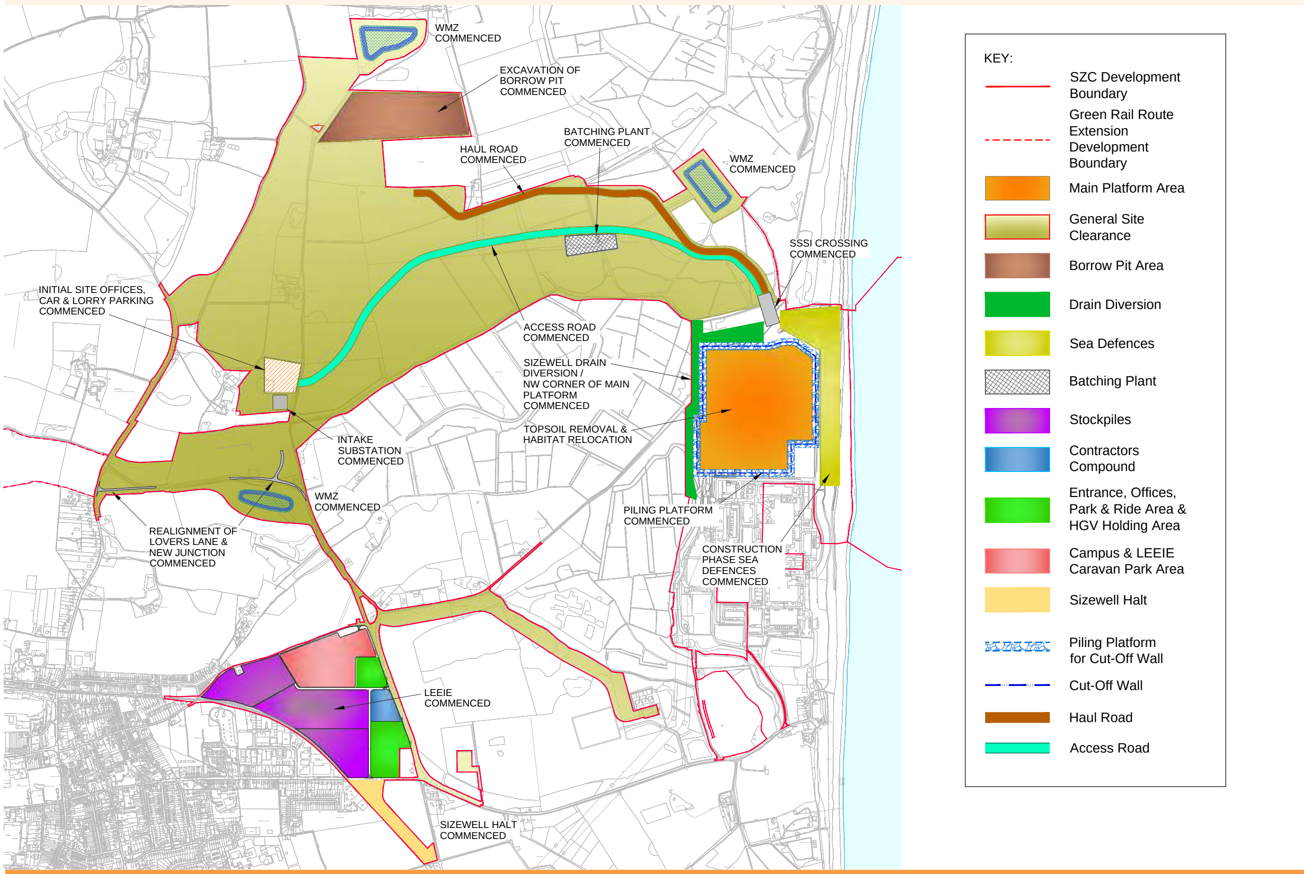
**7.5.9.** Some permanent infrastructure would be established in this phase. An access road would be established from the B1122, crossing the SSSI to arrive at the north of the main platform. Public rights of way (PRoW) and permissive paths would also be redirected.

**7.5.10.** Site clearance (including removal of trees in wooded areas and removal of topsoil), initial excavation works, including archaeological investigation of the peat, and preparation of the piling platform for construction of the cut-off wall would be undertaken on the main platform. The initial excavation works would include: the main platform; contractors' compound areas; borrow pits; site entrance hub; accommodation campus; batching plant area; early access roads; and LEEIE.

**7.5.11.** Works would commence for the construction of: haul road; SSSI crossing; electricity substation; site entrance; accommodation campus; and LEEIE.

**7.5.12.** Works on the foreshore would also commence during this phase. This would include: excavation of Bent Hills along the foreshore; creation of the construction phase sea defence; and ground preparation works such as soil strengthening and northern mound adaptation.

## Figure 7.34 Construction phase 1



### Phase 2 – main site earthworks and completion of temporary infrastructure

**7.5.13.** This phase sees the bulk of the earthworks take place, including excavation of made ground at the main platform, within the cut-off area and at the borrow pits. Excavated material would be stockpiled. Earth bunds would be created adjacent to the green rail route.

**7.5.14.** If the rail-led strategy is chosen, phase 2 sees the establishment of a temporary rail connection to service construction. This would include a new link to the main site from the Saxmundham-Leiston branch line known as the green rail route. In both the rail-led and road-led strategies, either the existing railhead at Sizewell Halt would be reconfigured to accommodate longer trains and an overhead conveyor provided to transfer freight material back into the LEEIE, or a new rail siding would be constructed adjacent to the existing branch line on the LEEIE.

**7.5.15.** The accommodation campus located west of Bridleway 19 would be under construction in this phase. Excavation of peat, clay and made ground would be ongoing.

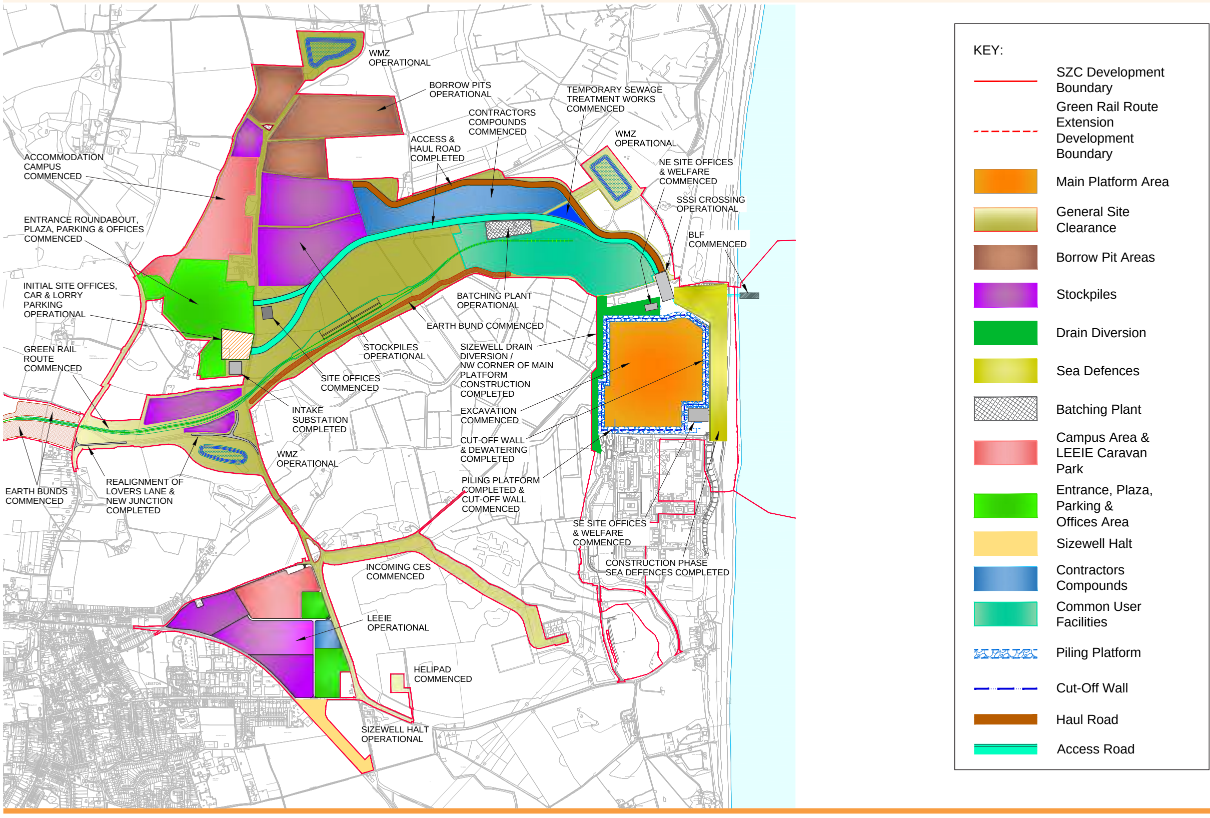
**7.5.16.** The BLF would be under construction and the construction phase of the sea defences would be completed.

**7.5.17.** Archaeological works would be completed.

**7.5.18.** Permanent infrastructure would include a new road junction, notably at Lover's Lane north of Leiston.

**7.5.19.** As set out at Stage 2, to provide the necessary amount of space between the level crossing and other road junctions under the rail-led strategy, the junction of the B1122 (Abbey Road) and Lover's Lane would be moved approximately 100m to the south at this point in the construction phase. This would be a permanent re-alignment of Lover's Lane, to improve visibility at this junction for all road users. The old alignment of Lover's Lane would be partially re-used as an off-road route for pedestrians, cyclists and equestrians.

## Figure 7.35 Construction phase 2

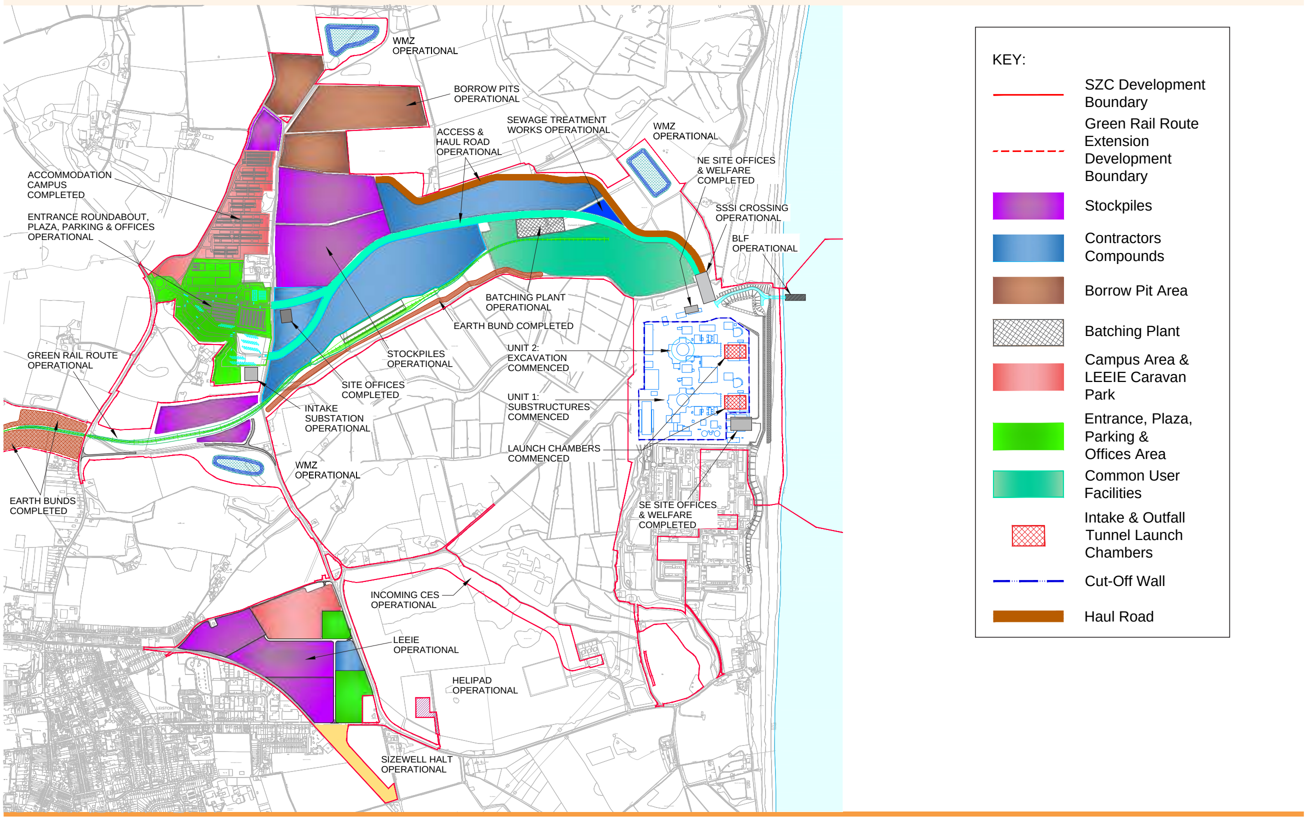


## Phase 3 – Main civils

**7.5.20.** Phase 3 sees the start of construction of the permanent infrastructure (i.e. the power station itself and its ancillary development).

**7.5.21.** During phase 3, the accommodation campus and rail extension would be fully in use (under the rail-led strategy only for the latter), and backfill of the borrow pits would end.

**Figure 7.36** Construction phase 3

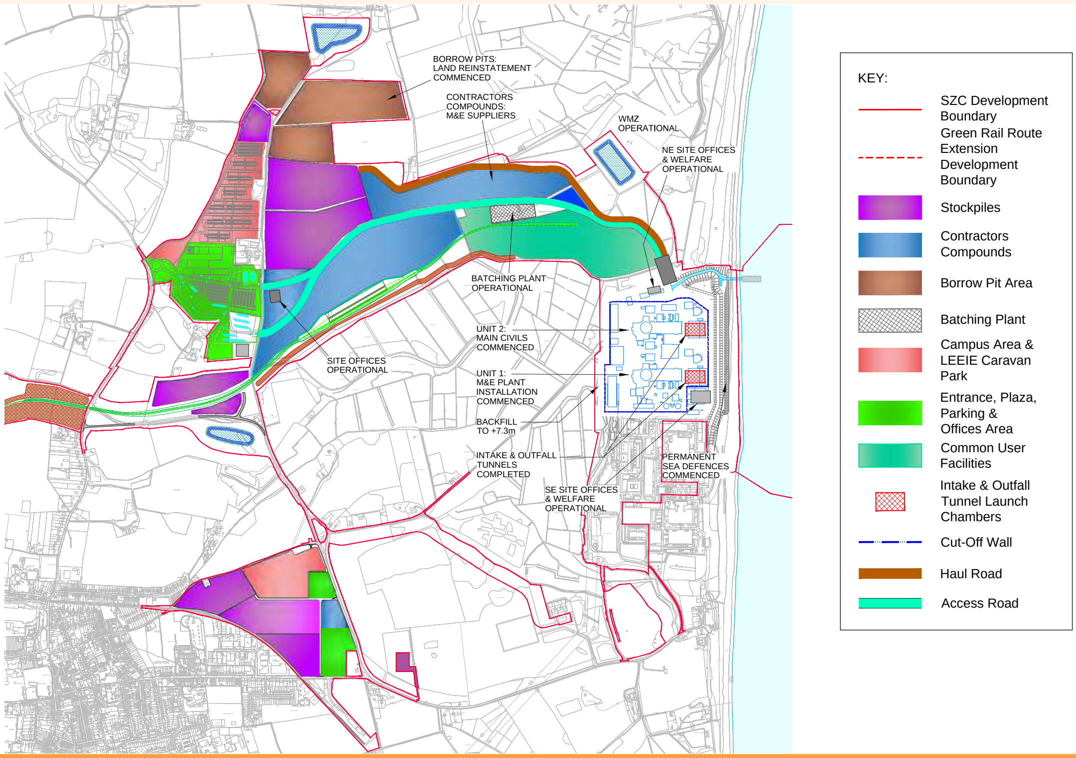


## Phase 4 – Mechanical and electrical installation

**7.5.22.** Phase 4 sees the completion of much of the permanent building work and the start of Mechanical and Electrical (M&E) work on the power station itself. The two reactor buildings would be completed as would the off-shore infrastructure relating to the cooling water system. Installation of the M&E equipment in units 1 and 2 would begin and construction of the National Grid 400kV sub-station would continue.

**7.5.23.** The helipad north of Sizewell Gap would be complete and available for use, and land reinstatement would begin in the temporary construction area.

**Figure 7.37** Construction phase 4



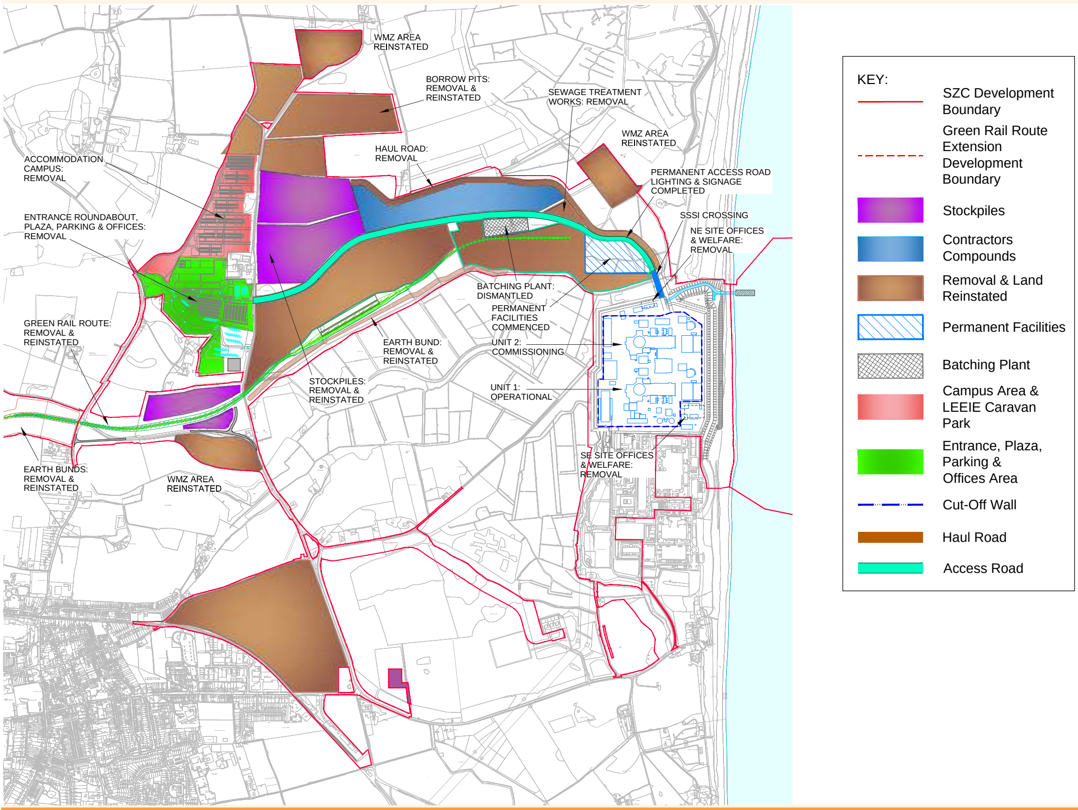
## Phase 5 – commissioning and land restoration

**7.5.24.** The last of the permanent infrastructure would be completed including on-site facilities for staff.

**7.5.25.** The power station would be tested and then commissioned. Construction completion tests would be undertaken to ensure all development is properly constructed. Fluid systems would be flushed and tested. Fuel would be loaded into the reactors and functional testing would be undertaken. The reactors would then be taken to 'criticality' and power raised. They would then be subject to proving runs prior to being connected and synchronised to the National Grid.

**7.5.26.** The final phase sees the last of the temporary infrastructure removed including rail infrastructure, accommodation campus, contractors' areas and temporary services. The bunds adjacent to the green rail route would be removed (rail-led strategy only) and the SSSI crossing would be finalised to its permanent configuration by removal of the east-side road surface. Land reinstatement at the borrow pits would be completed. The main access road would be reduced in width and the final landscaping of the main development site and wider EDF Energy estate would be undertaken.

**Figure 7.38** Construction phase 5



### d) Power station platform (main platform)

**7.5.27.** This section looks in detail at key parts of the main platform during the construction phase as a whole.

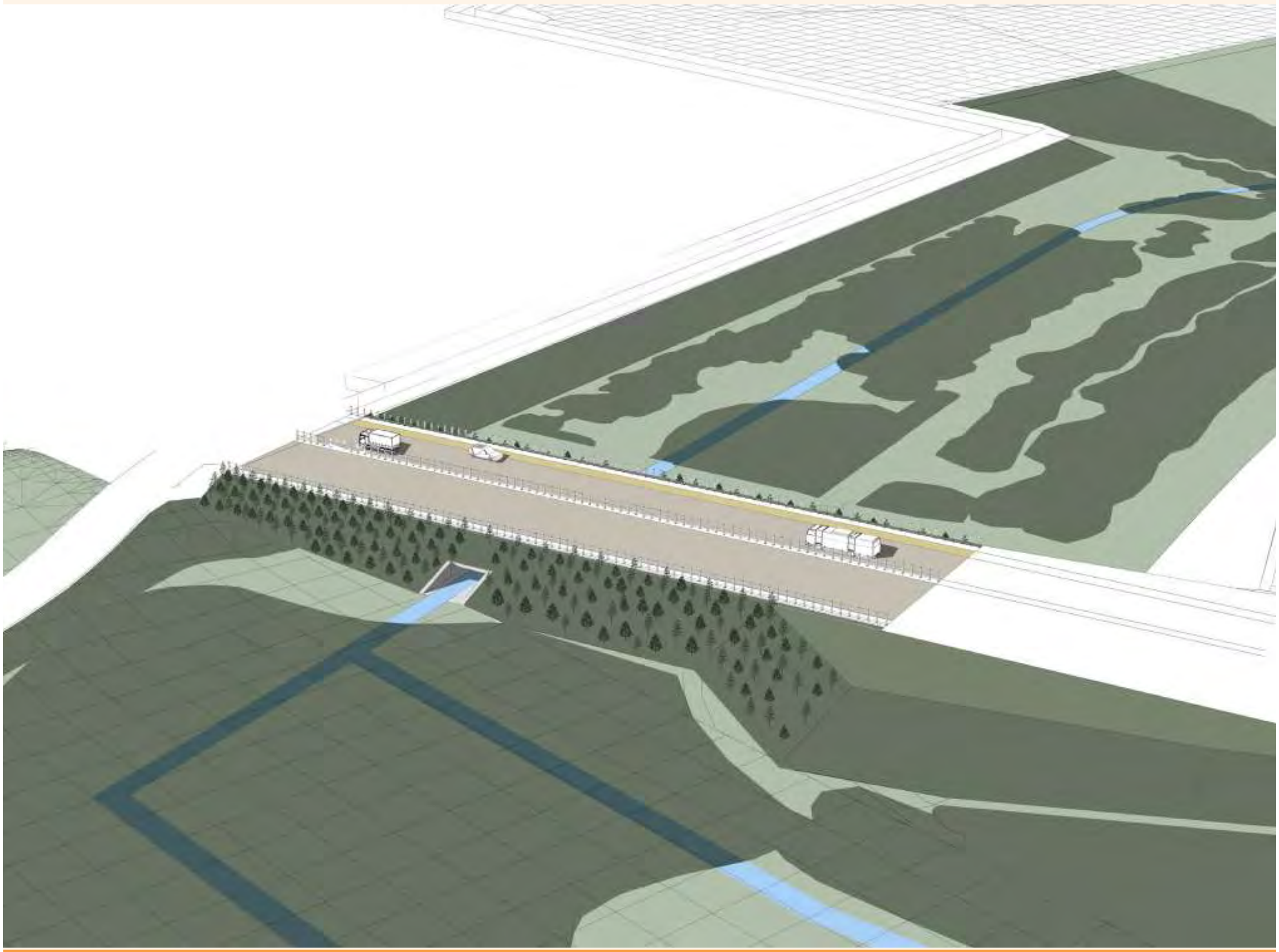
**7.5.28.** To establish the boundary of the main platform it would be necessary to develop on a small part of Sizewell Marshes SSSI. This would entail:

- the diversion of the Sizewell Drain within the Sizewell Marshes SSSI area to maintain the drainage of water to the north;
- the installation of a barrier between the retained SSSI area and the site, which would likely be constructed of steel sheet piling; and
- ground treatment and land raising within those areas removed from the SSSI.

**7.5.29.** Once the boundary of the main platform has been established and the site cleared and levelled it would be necessary to construct a cut-off wall to isolate the main excavation from the surrounding hydrological environment. In turn, this would require the provision of a perimeter access corridor to support this activity, including the movement of construction vehicles, pedestrians and the loading/unloading of construction materials via cranes and Heavy Goods Vehicles (HGVs). On the eastern side of the platform the access corridor for heavy earthmoving plants would form part of the initial sea protection and flood defence (sea defences), to maximise usable space.

**7.5.30.** On completion of the cut-off wall, the contained area would be dewatered and the ground excavated to a level sufficient to remove all the unsuitable material and then built back up using suitable engineering fill to form

**Figure 7.39** SSSI crossing during construction, illustrative drawing



the foundations of the power station. As the buildings are constructed, the surrounding excavation would be backfilled until a level is reached just below the final ground level. The final surfacing would be undertaken at the end of construction as part of the landscaping scheme.

**7.5.31.** During the construction of the power station buildings, the platform area would be characterised by tall cranes rising above the building structures.

### SSSI crossing during construction

**7.5.32.** The SSSI crossing provides an essential connection across Sizewell Marshes SSSI during both operation and construction. An illustrative drawing showing how the embankment could look during the construction phase is shown in **Figure 7.39**. Details of our final choice for the SSSI crossing are set out in the operational section of this chapter.

**7.5.33.** During the construction phase we would require access to and from the main platform, both for general construction traffic and also for heavy earthmoving plant associated with the excavation and transport of materials. For safety reasons it is important to segregate the different traffic types and therefore a separate access road and haul road is proposed on the SSSI crossing.

**7.5.34.** The crossing is also needed during construction to transport AILs between the temporary construction area and the main platform, following their delivery via the BLF.

#### Construction programme

**7.5.35.** The timing of the construction of the SSSI crossing to connect the main platform with the temporary construction area is crucial to the overall construction programme and therefore early delivery is a high priority for the project. Delays to the delivery of the crossing would mean that very heavy earthmoving plant could not access the main platform when they are first needed to transport excavated materials to the stockpiles in the temporary construction area, nor deliver the concrete that is needed for early works. Commencing the main earthworks in the first available summer is very important, as handling alluvial materials and peat during Winter would not be practical.

**7.5.36.** The provision of a causeway with a culvert, through which the Sizewell Drain would flow, facilitates the earliest possible construction access into the main platform. This would initially be achieved by placing a temporary bridge across the Leiston Drain, supported on abutments for the permanent culvert structure at the east end, while the full construction remains ongoing at the west. By comparison the bridge options would result in approximately a six-month delay to the overall construction programme.

### e) Land east of Eastlands Industrial Estate, including Sizewell Halt

**7.5.37.** LEEIE plays an important role during the construction phase by enabling the delivery of bulk materials by rail and by providing other key functions, including 400 temporary caravans for construction workers.

**7.5.38.** The rail options presented at Stage 2 were:

- **Option 1:** a new rail terminal in the centre of this area, served by new railway track and used for the entire construction phase, alongside the provision of a temporary construction area and a temporary caravan site for workers. Under this option the green rail route would not have been provided and HGVs would have instead transported deliveries the short distance into the temporary construction area via Lover's Lane (Stage 2 rail-maximum scenario).
- **Option 2:** a temporary caravan area and a temporary holding area only. Bulk deliveries would instead have been delivered via the green rail route or via the sea (Stage 2 rail-maximum scenario and marine-maximum scenario).

**7.5.39.** For both of these options Sizewell Halt was identified as playing a particularly important role during the early years of construction, by taking rail deliveries prior to the completion of alternative infrastructure.

**7.5.40.** Our revised approach to temporary development within this area is strongly driven by the freight management strategy. As explained earlier in this consultation document, we have discounted the marine-maximised scenario and we are now consulting on a road-led strategy and a rail-led strategy.

**7.5.41.** We are now consulting on the following two options for this area. Further details on our rail proposals are set out in **Chapter 8** of this volume.

## Table 7.6 Rail works comparisons for rail-led and road-led strategies

| Rail works required for a rail-led strategy | Rail works required for a road-led strategy |
|---|---|
| Two alternative options which would be used in the early years of construction (prior to completion of the green rail route) for up to two freight deliveries per day (four movements):<br><br>**Option 1: Sizewell Halt**<br>Use of the existing Sizewell Halt rail terminal located south of King George's Avenue.<br>Reconfiguration of the existing railhead in order to accommodate longer trains.<br>An overhead conveyor to transfer freight material back into the LEEIE.<br><br>OR<br><br>**Option 2: New rail siding**<br>Construction of a new rail siding adjacent to the existing branch line on the LEEIE. | Two alternative options which would be used throughout the construction period for up to two freight deliveries per day (four movements):<br><br>**Option 1: Sizewell Halt**<br>Use of the existing Sizewell Halt rail terminal located south of King George's Avenue.<br>Reconfiguration of the existing railhead in order to accommodate longer trains.<br>An overhead conveyor to transfer freight material back into the LEEIE.<br><br>OR<br><br>**Option 2: New rail siding**<br>Construction of a new rail siding adjacent to the existing branch line on the LEEIE. |

**7.5.42.** Under the rail-led strategy the green rail route would be constructed, which would take bulk deliveries directly into the temporary construction area once operational. Once constructed, this new rail extension off the existing Saxmundham-Leiston line would be used to support up to five freight deliveries per day (ten movements).

**7.5.43.** Prior to delivery of the first connection at the SSSI crossing, it would be necessary to route deliveries onto the main platform via Sizewell Gap, Sizewell A and Sizewell B. EDF Energy envisage this period would last for approximately 12 months and the flow of HGVs would be managed to help minimise any traffic congestion in this area. This is an essential component of the construction strategy, as it provides materials for the cut-off wall and sheet piling to protect the SSSI from early excavation works, as well as materials for the power station side of the SSSI crossing itself. As we develop our proposals further we will continue to seek ways to minimise any disruption to existing local residents and road users.

**7.5.44.** Once the SSSI crossing is complete deliveries from this area would be routed via the secondary access road, which is described in the site entrance hub section below.

**7.5.45.** During the early years uses across the site would be the same regardless of the transport strategy proposed (see **Table 7.7**). Following the early years the land allocation would differ depending on the chosen transport strategy but the total would not exceed 29 hectares (see **Table 7.8**).

**7.5.46.** Following completion of construction of Sizewell C, the soil in this area would be reinstated and the land restored, plus:

- if Option 1 is progressed, the overhead conveyor at Sizewell Halt would be removed and the land restored to its previous condition (the reconfigured rail head would remain); and,
- if Option 2 is progressed, the rail siding adjacent to the existing branch line on the LEEIE would be removed and the land restored to its previous condition.

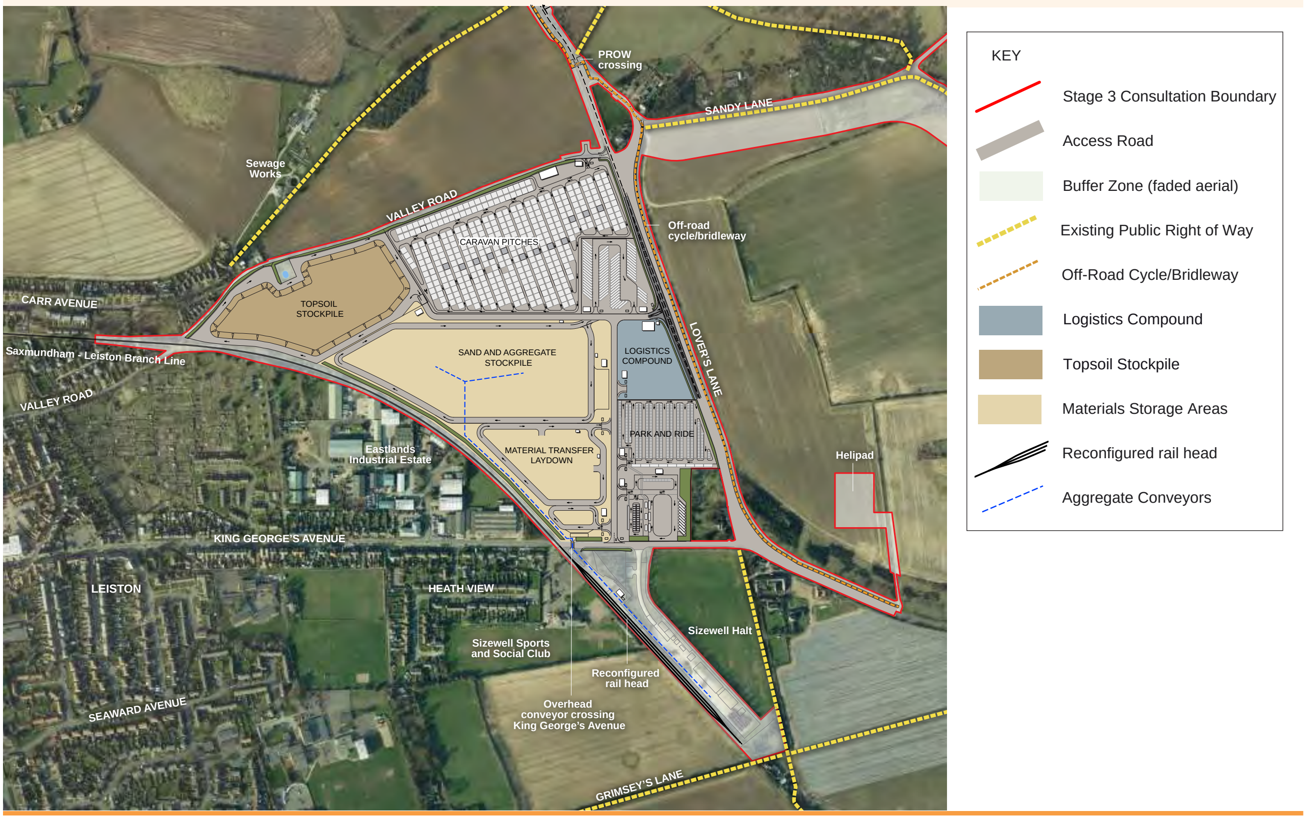
**Table 7.7** Indicative allocation of land east of Eastlands Industrial Estate during the early years of construction

| Use | Area (hectares) |
|---|---|
| Topsoil stockpile area | 5 |
| Accommodation for approximately 400 caravans | 6 |
| HGV management area | 1 |
| Bulk delivery stockpile area | 7 |
| Early years park & ride facility | 3 |
| Construction compounds | 7 |
| TOTAL | 29 |

**Table 7.8** Indicative allocation of land east of Eastlands Industrial Estate following the early years of construction

| Use | Land required for the road-led strategy (hectares) | Land required for the rail-led strategy (hectares) |
|---|---|---|
| Topsoil stockpile area | 5 | 5 |
| Accommodation for approximately 400 caravans | 6 | 6 |
| HGV and bus management area | 3 | 3 |
| Bulk delivery stockpile area (road-led strategy) | 13 | 0 |
| Construction compounds (rail-led strategy) | 0 | 13 |
| Construction compounds | 2 | 2 |
| TOTAL | 29 | 29 |

## Figure 7.40 Land east of Eastlands Industrial Estate: Option 1 Sizewell Halt




### f) East of Bridleway 19 and north of Sizewell Marshes SSSI

### Borrow pits and stockpiles

**7.5.47.** As part of the Stage 2 consultation we consulted on two options for relocating approximately 1 million m³ of peat and peaty clay material that needs to be excavated from within the main platform, which cannot be used for construction purposes:

- placement of the material in on-site borrow pits; or
- shipment of the material to the RSPB Wallasea Island Wild Coast Project in Essex, where material would be used to contribute to the ongoing habitat creation scheme.

**7.5.48.** Following further consideration, we are satisfied that we can sensitively incorporate the material on-site as part of the land restoration works and that this approach is more sustainable than shipping the material off-site.

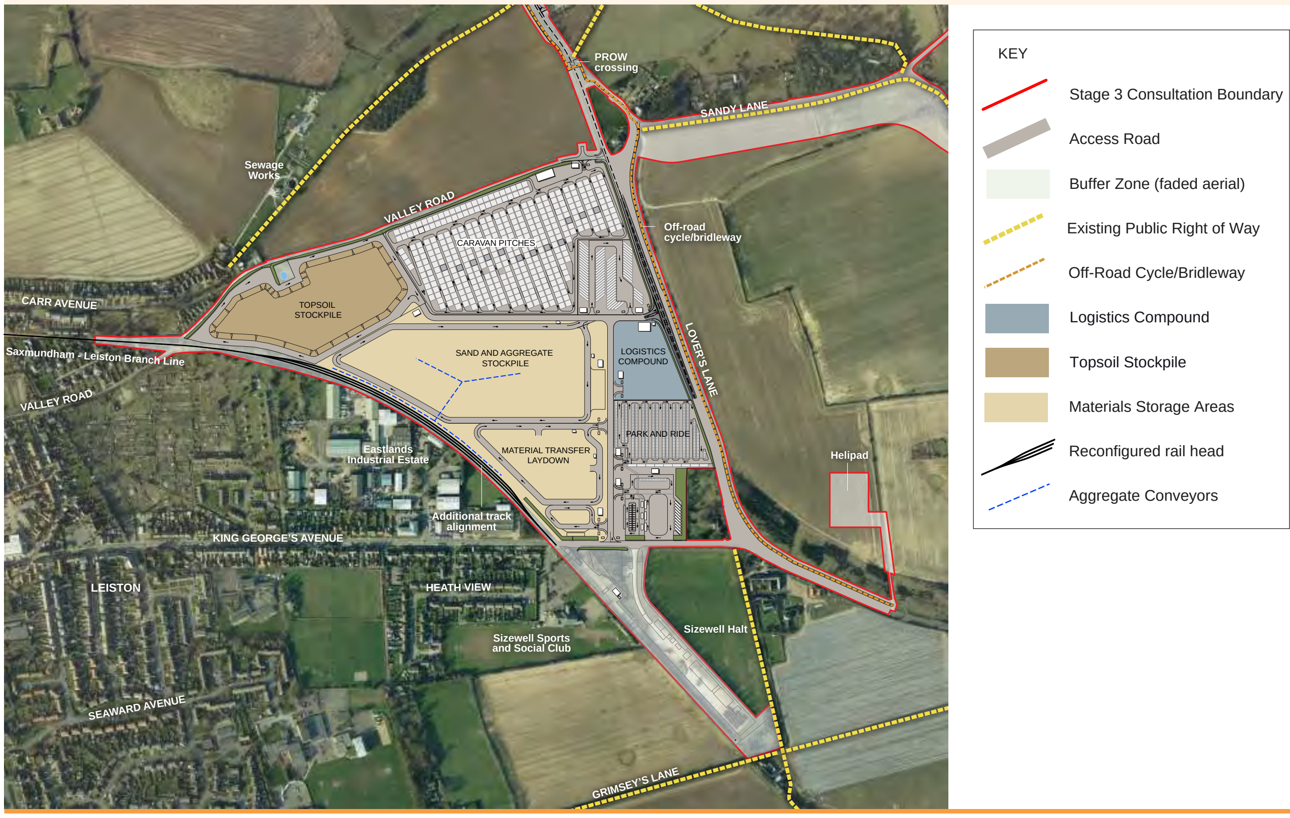
**7.5.49.** As part of the option to place material on-site in borrow-pits, EDF Energy consulted on approximately 40ha of land across four fields at Stage 2. Of this, approximately 15ha of land was estimated to be required at that time from a selection of the following fields:

- field one: west of Eastbridge Road;
- field two: east of Eastbridge Road;
- field three: north of Ash Wood; and,
- field four: west of Ash Wood.

**7.5.50.** Due to the size of each field and the benefits of grouping adjoining sites, the following potential combinations were identified at Stage 2:

- **Option A:** fields one and two (East and west of Eastbridge road);
- **Option B:** fields two and three (East of Eastbridge Road and north of Ash Wood); or,
- **Option C:** fields three and four (north and west of Ash Wood).

## **Figure 7.41** Land east of Eastlands Industrial Estate: Option 2 rail siding




### Stage 2 consultation feedback

**7.5.51.** Respondents commented on the proposed approach to spoil management, which included the swapping of material from within the main platform cut-off wall with material located elsewhere within the application boundary (known as 'borrow pits'). The logistics of managing significant quantities of material also requires stockpiles to be located within the application boundary.

**7.5.52.** The majority of those who offered comments rejected the proposed approach, instead preferring materials to be stored elsewhere, including off-site if necessary.

**7.5.53.** Many respondents had concerns about the visibility of the stockpiled material in long distance views.

**7.5.54.** Respondents were also generally concerned about the impact of the borrow pits on hydrology, particularly effects on the speed, depth and rate of water infiltration into the aquifer below.

**7.5.55.** A small number of respondents supported the concept of borrow pits and stockpiles, on the basis that they will reduce traffic on the roads around the site. One respondent supported the proposal on economic grounds.

### Proposed approach

**7.5.56.** We have discounted the potential option to ship material to Wallasea Island because we are now satisfied that retaining the material on-site is the most appropriate and sustainable option.

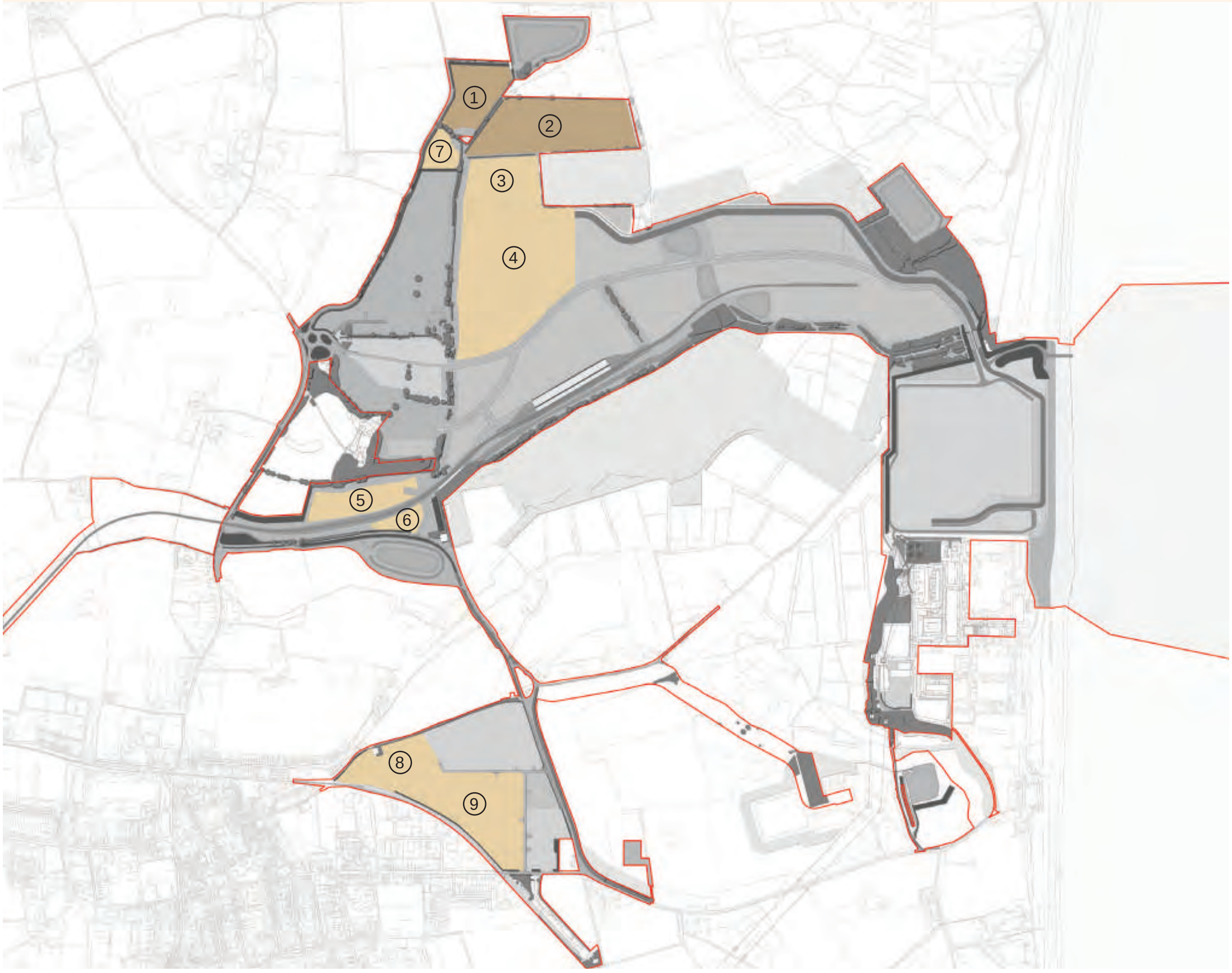
**7.5.57.** We are also now able to discount the need for field one at this stage, which is the most visually exposed of the four fields. It is visible from the north including from the PRoW south of Eastbridge and has intermittent views from Eastbridge Road. Potters Farm, Eastbridge Farm and Leiston Abbey are also nearby and may have had direct views of this borrow pit if it was progressed. Field one would also have required large construction vehicles to cross Eastbridge Road. Whilst it is the only borrow pit option that is not in the AONB, we consider that use of this field is the least appropriate solution for borrow pit construction works.

**7.5.58.** Whilst at Stage 2 we presented options and identified that two borrow pit fields are likely to be required, we now consider on a precautionary basis that the remaining three borrow pit fields should be included in the application for development consent to ensure that sufficient suitable material is available for the main platform.

**7.5.59.** Further details on the borrow pits and stockpiles are indicatively set out below and illustrated on **Figure 7.42**.

1. Borrow pit field two, located east of Eastbridge Road, is retained as a borrow pit site (borrow pit field one has been discounted for the reasons set out above).
2. Borrow pit field three, located north of Ash Wood, is retained as a borrow pit site. Once borrow-pit works are complete, the site would then be used to store material excavated during the marine tunnelling work with a peak height of approximately five metres. The material would ultimately then be used as fill across the temporary construction area.
3. Borrow pit field four, located west of Ash Wood, is retained as a borrow pit site. This area would then become part of the main stockpile area as described below.
4. Land east of Bridleway 19 would continue to be used as the main stockpile area and would mostly be used to store backfill material intended for use on the main platform. The area would be actively used throughout the construction phase and is likely to be at peak height (approximately

**Figure 7.42** Borrow pit and stockpile location plan



35m) a few years after works commence and is then likely to significantly reduce thereafter. **Figure 7.43** indicatively shows how this stockpile area is likely to be operated at peak height, with four independent stockpile areas, access ramps at a gradient of approximately 1:8 and a plateaued working area at the top.

5. Land north of Lover's Lane and north of the green rail route would continue to be used as a topsoil storage area for the main platform and temporary construction area. The height of the stockpile is likely to be up to approximately 15m. Works would be completed early in the construction programme and remain in place until required for the final landscape restoration.

6. Land north of Lover's Lane and south of the green rail route would continue to be used as a stockpile. It would contain material excavated from the main platform that would ultimately then be distributed across the temporary construction area as part of the restoration works. The height of the stockpile is likely to be up to approximately 11m.

7. Land north of the accommodation campus would also still be used as a stockpile area, comprising marine arisings that cannot be stored as part of the stockpile on borrow pit field three.

8. Land in the north-west corner of the LEEIE (immediately south of Valley Road) would be used as a stockpile area to temporarily store topsoil removed from this site. The height of the topsoil stockpile is likely to be up to approximately 3.5m.

9. The main stockpile within LEEIE and the stockpile north of King George's Avenue would continue to be used to store material imported by rail, prior to it being transported to the main stockpile area east of Bridleway 19. The height of the stockpile is likely to be up to approximately 15m and peak volumes are expected within the first few years of construction. Material would be transported between these two stockpiles by HGV via Lover's Lane.

## **Figure 7.43** Stockpile typical concept plan

### Borrow pit and stockpile typical phasing

**7.5.60.** The status of the borrow pits would go through multiple stages during the construction phase. These are indicatively set out below:

- Stage one: A perimeter bund or acoustic fencing would be installed. The topsoil and subsoil would then be stripped and separated.
- Stage two: The overburden, which is the spoil located between the subsoil and the material that we require for the main platform area, would then be excavated and transported to the relevant stockpile area.
- Stage three: The material we require, which is the crag sands and gravels, would be excavated to no deeper than 2m above the water table. This material would then be transported to the relevant stockpile area, ready for use on the main platform. This stage is indicatively shown in **Figure 7.44**.
- Stage four: At this point the clay, peat and 'peaty clay' material removed from the main platform would be placed into the borrow pit and stabilised, through measures such as lime treatment.
- Stage five: Earthworks such as the crag material would then be stockpiled on the borrow pits as necessary up to a height of approximately 5m, until they are required.
- Stage six: Once stockpiled material has been re-used then the borrow pits land would be restored to their pre-construction use.

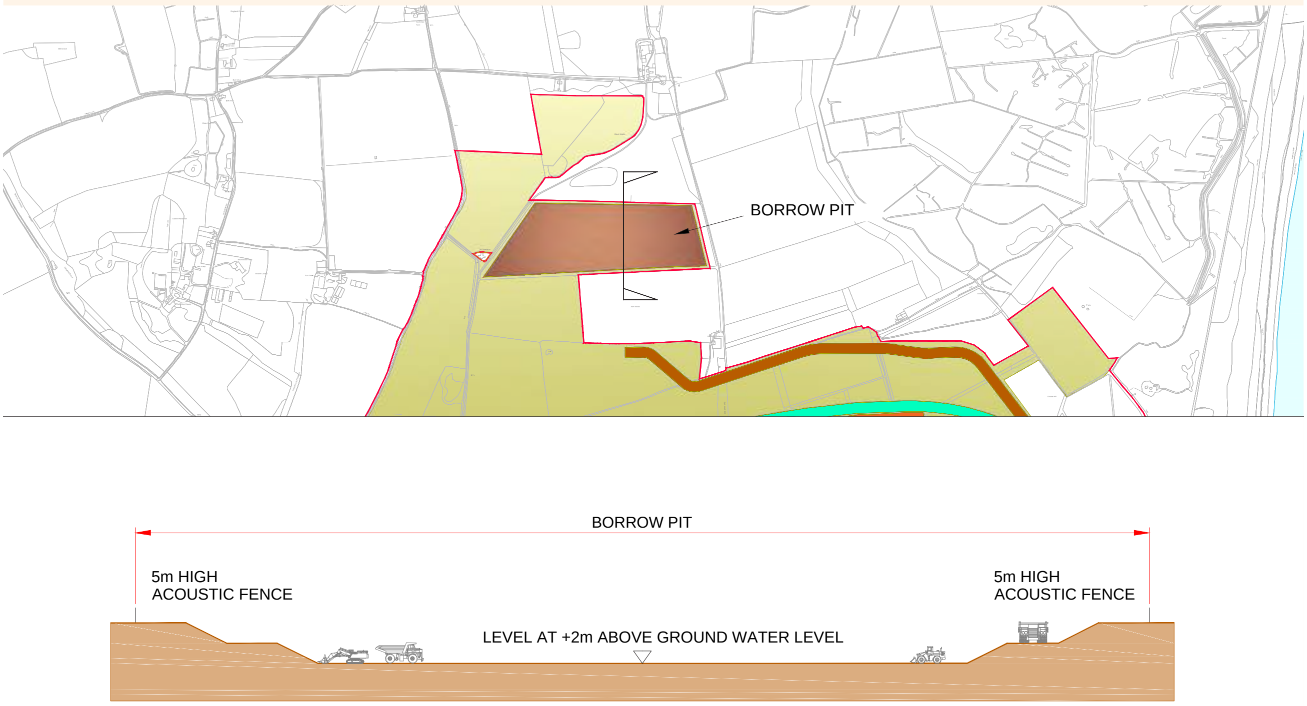
### Common user facilities and contractors' compounds

**7.5.61.** Common user facilities are those elements which need to be close to the main platform. These include concrete production and the prefabrication of components prior to installation within the main platform. The green rail route would terminate within the common user facilities area under the rail-led strategy.

**7.5.62.** Land is required to accommodate the range of contractors needed to build the new power station in compounds. To maximise logistical efficiency, these compound areas are proposed to be located as near to the main platform and the common user facilities area as possible. An indicative total of approximately 43ha is required for activities in this area.

**7.5.63.** There have been no significant changes to these areas since the Stage 2 consultation.

**Figure 7.44** Borrow pit typical cross section

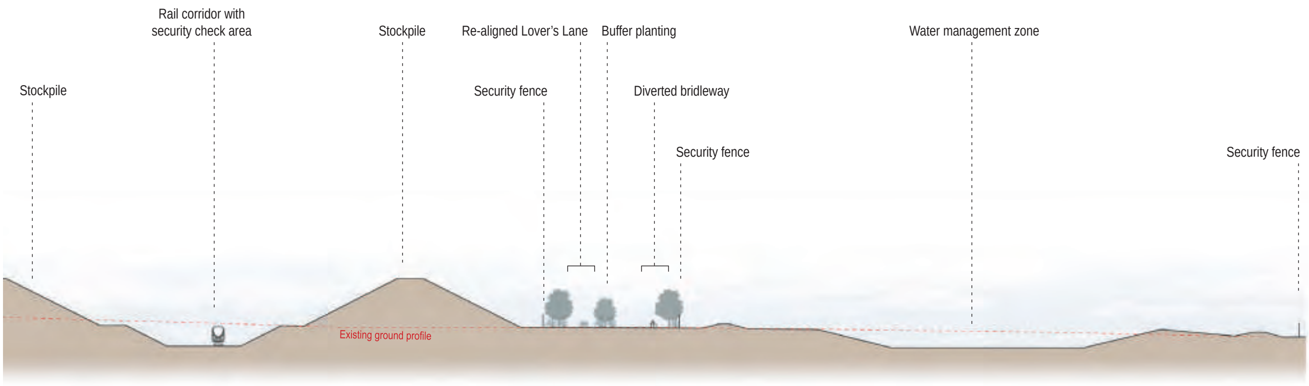


## Boundary treatments

**7.5.64.** During the construction phase, certain parts of the site would require temporary boundaries to help mitigate the environmental effects of construction work on the public or, in the case of the accommodation campus, on the construction workers.

**7.5.65.** **Figure 7.45** illustrates the re-aligned Lover's Lane and bridleway flanked by a stockpile area straddling the proposed rail corridor to the north and attenuation pond to the south, adjoining the recently created habitat at Aldhurst Farm. Planting is proposed on either side of Lover's Lane and the diverted bridleway to provide an attractive route and enhance existing screening vegetation. Security fences would be located on the edges of the construction site and set behind the existing and proposed planting.

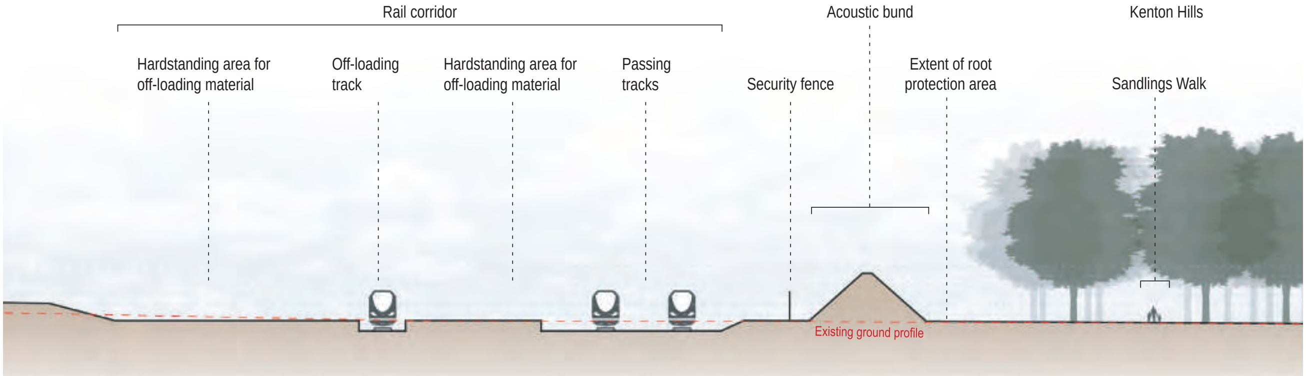
**Figure 7.45** Illustrative cross section showing the boundary treatments between Lover's Lane, the re-aligned bridleway and the adjacent stockpile area.




**7.5.66. Figure 7.46** illustrates the boundary of the main construction compound area and associated railhead. The compound and railhead are offset from retained mature trees along the edge of Kenton Hills plantation. A 5m acoustic bund is proposed along the construction boundary to screen views from the permissive footpath within Kenton Hills (Sandlings Walk) screening views of the railhead and associated off-loading area within the compound. The main security fence would be set behind the bund and screened from view.

**7.5.67. Figure 7.47** illustrates the proposal to screen construction stockpile areas and worker accommodation (caravans) in LEEIE from views along Valley Road and adjoining properties. Security fencing and/or acoustic fencing would also be incorporated along this boundary and would be located behind the proposed and existing boundary planting.

**Figure 7.46** Illustrative cross section showing the boundary treatment between Kenton Hills and the temporary construction area.



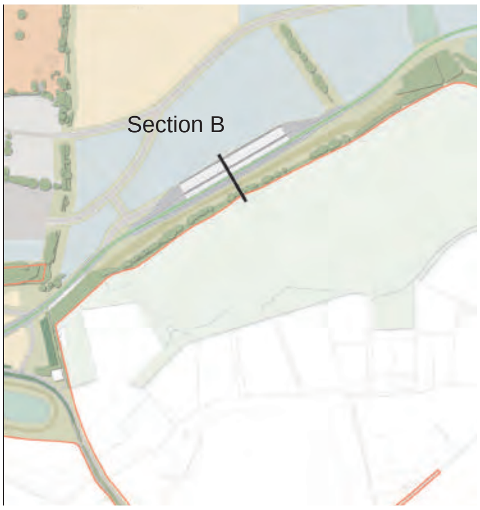
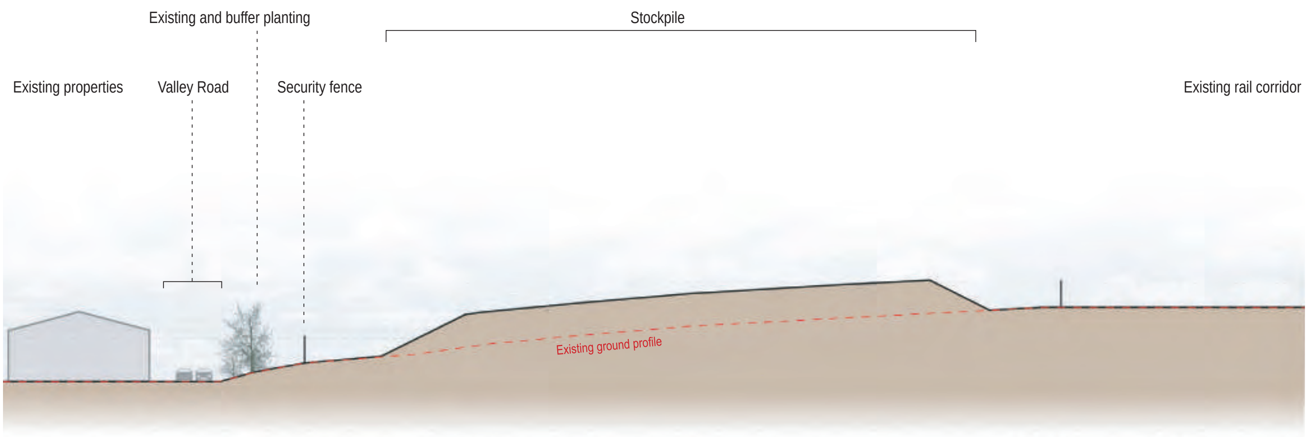
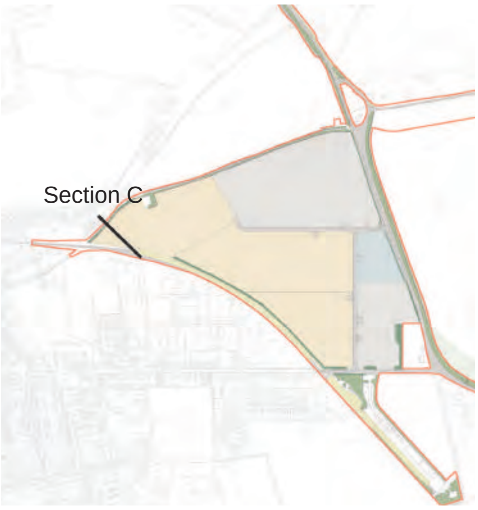



**Figure 7.47** Illustrative cross-section showing the boundary treatment between residential properties on Valley Road and the adjacent stockpile area.



### g) North of Sizewell Gap

#### New electricity supply cable and substation

**7.5.68.** New cables are required to complete the electrical connection between the Leiston 132kV substation at Sizewell Wents and a new substation to be located east of Old Abbey Farm. This is required to reduce reliance on diesel generators at the earliest opportunity during construction.

**7.5.69.** The preferred decision is for the cables to exit the Leiston 132kV substation and travel underground through proposed reptile mitigation land up to Sandy Lane as shown on **Figure 7.48**. At Sandy Lane the cables would be installed within the verges or within the carriageway of Lover's Lane before then continuing underground into the proposed substation. We consider this is possible without harming protected species.

**7.5.70.** The preferred option has many advantages over potential alternatives, including:

- no impact on the existing utilities in and around Sizewell Gap road;
- minimal impact on the existing utilities within Lover's Lane;
- minimal interference with the proposed plan for the environmental planting and reception;
- relatively short route;
- minimal impact on the existing Leiston 132kV Substation and the new Galloper Substation; and,
- straight forward construction methods can be used.

### h) West of Bridleway 19 and east of Abbey Road

#### Site entrance hub

**7.5.71.** The main entrance hub would be located east of the new access junction off the B1122, west of Upper Abbey Farm and south of the accommodation campus. This area would be the location of a number of site facilities during construction, including:

- main site offices and induction facilities;
- site canteen;
- bus and car parking areas;
- freight areas; and
- security facilities.

**7.5.72.** The main entrance hub brings together the offsite and onsite transport, office and welfare, security and access to the accommodation campus. It operates outside the main security fence to allow more flexibility in operation. As shown on **Figure 7.49**.

**7.5.73.** Once operational it would act as the primary site access point for HGV and LGV deliveries, works and visitor vehicles and external bus connections. The main entrance hub also hosts one of the principal office and welfare hubs as well as connection to the workers' accommodation to the north. The hub would be decommissioned at the end of the construction phase, although the main site access road will remain as a permanent access route.

**7.5.74.** It is essential that the main entrance hub is designed to maintain security and operational requirements whilst maintaining the flow of people and resources into the site. The hub area therefore features a number of buildings and facilities, designed to enable the flow of people and vehicles in an efficient manner.

**7.5.75.** A roundabout is proposed at the junction with the B1122 to facilitate the main access to Sizewell C on a temporary and permanent basis. The roundabout is proposed to be located in the southern part of the field between the existing Eastbridge Road and Greenhouse Plantation. The roundabout would therefore be located slightly eastwards of the existing alignment of the B1122.

**7.5.76.** The area proposed for the roundabout is indicated on the construction masterplan. However, through further design development and traffic safety assessment the final form of the junction may differ.

**7.5.77.** A secondary access road would be required to connect the main development site from Lover's Lane to the LEEIE. This is required to facilitate the early delivery of materials from the existing and (if selected) proposed rail infrastructure to the east of Leiston, avoiding the need for additional construction traffic crossing the B1122. This access would also serve as an emergency access point in the event of an obstruction at the main development site entrance. Some permanent realignment to the existing highway would be required to ensure safe operation of the junction.

**7.5.78.** The secondary entrance junction is proposed to be situated a short distance west of the survey laboratory, off Lover's Lane. The location of the secondary entrance for HGV access is shown in the construction masterplan **(Figures 7.31 and 7.32).**

**7.5.79.** Details of the accommodation campus, which is adjacent to the site entrance, are set out later in this chapter.

**Figure 7.48** Illustrative route of construction electricity supply cable

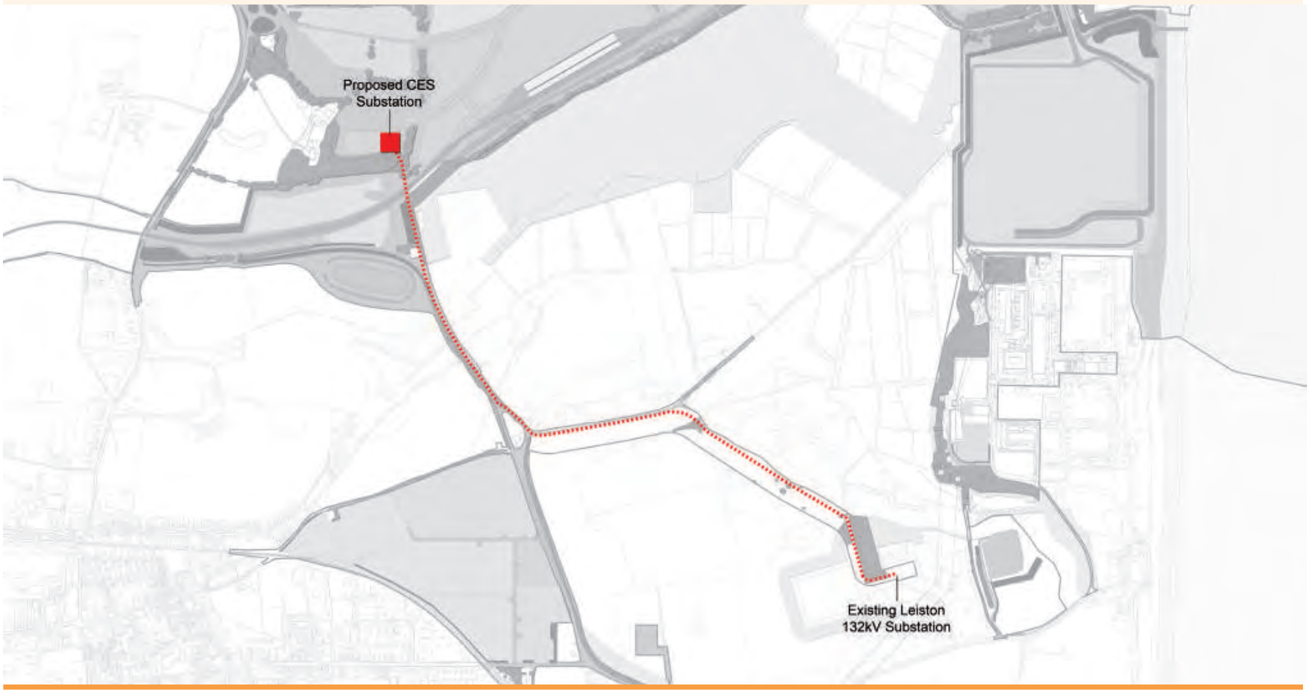



**Figure 7.49** Site entrance hub, illustrative layout

## i) Suffolk coast

### Sea defences and rights of way

**7.5.80.** We have now considered in more detail how the sea defences would need to evolve throughout the construction phase and further details are provided below.

**7.5.81.** The first phase of the Sizewell C sea defence would be provided early in the construction phase and would coincide with the removal of the current Sizewell B coastal earth mounds. This would include the installation of a 7m AOD sea defence and provision of a temporary construction route for heavy earthmoving plant only along the eastern edge of the main platform. As shown on **Figure 7.40**, the footprint of the new sea defence would be located closer to the shoreline than the current earth mounds.

**7.5.82.** The Suffolk Coast Path and Sandlings Walk would be diverted towards the existing 5m bund while the initial sea defence is being constructed. Open access to the coastline would be retained as much as possible during the construction phase, however, some areas would need to be closed for parts or all of this phase.

**7.5.83.** The second phase of the Sizewell C sea defence would be provided as works intensify on the main development site. A 10m AOD temporary earth bund would be created on the coastal side of the initial sea defence to provide further protection to the main platform and help to screen construction activity along the adjoining construction route. Restoration works to the beach itself would also take place during this phase, including infilling the area of low lying ground between the new sea defence and the 5m bund to create a raised platform at approximately 5m AOD. This would ensure an appropriate tie-in to the existing 5m bund and allow for a wider recreation corridor in keeping with the current situation.

**7.5.84.** The Suffolk Coast Path and Sandlings Walk would be diverted along this raised area of ground during the second phase of construction.

**7.5.85.** The final phase of the Sizewell C sea defence would comprise removing the construction route and raising the sea defence to 10.2m AOD. At this point the side slopes of the sea defence would also be reduced in gradient and soft landscaping provided for a more natural appearance that better suits the context. The outer security fence would be relocated to the west of the new sea defence and the Suffolk Coast Path and Sandlings Walk would be reinstated along the 5.2m AOD access route that runs along the coastal edge of the sea defence.

**7.5.86.** As set out in the previous consultation, the sea defence has been designed to allow its height to be raised to approximately 14m AOD later in the power station's life should the monitoring of trends in sea level rise and nearshore waves suggest that this is necessary.

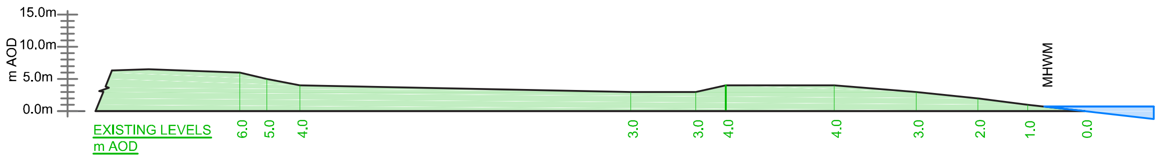
**7.5.87.** The existing secondary Sizewell B sea defence which is located on the coastal side of the main sea defences would be realigned to maximise the available recreational space. It will retain its relatively low height compared with the main defences.

**7.5.88.** An inland diversion would be provided for the Suffolk Coast Path, Sandlings Walk and England Coast Path to allow for the closure of the coast path, during essential construction works and for large deliveries (See **Chapter 17** of this volume for more details). The operational phase would allow all existing permissive footpaths and definitive rights of way to substantially revert to their original alignment and condition.

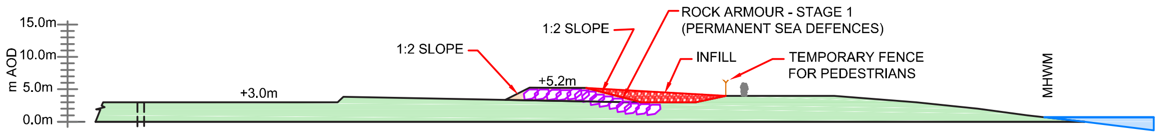
**7.5.89.** The temporary diversions of the Suffolk Coast Path, Sandlings Walk and England Coast Path along the coast would have the same quality and accessibility as the current coast path, and the standards for the England Coast Path will be agreed with Natural England. All diversions would be above the mean high water level.

**7.5.90.** **Figure 7.50** illustrates how the sea defences could evolve throughout the construction phase.

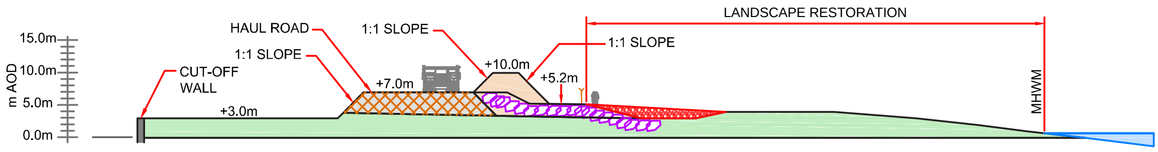
**Figure 7.50** Typical cross sections of sea defences, existing and during construction




EXISTING SITE - PRIOR TO START OF CONSTRUCTION




CONSTRUCTION SITE -
DURING CONSTRUCTION OF INITIAL SEA DEFENCE & BLF




CONSTRUCTION SITE -
DURING CONSTRUCTION OF MAIN DEVELOPMENT SITE

### Beach landing facility (BLF)

**7.5.91.** In the Stage 2 consultation we consulted on three options for the delivery of certain construction materials by sea during the construction stage as well as during the operational stage:

- **Option 1** (wide jetty) was designed for the marine-maximised scenario. It comprised a temporary wide jetty for the delivery of bulk materials and AILs by sea during the construction phase. It would need to be approximately 800m in length with two berths on the north side and one on the south. The jetty would be constructed with piling into the seabed and would allow vessels to berth offshore.
- **Option 2** (narrow jetty) was designed for the rail-maximised scenario. It comprised a temporary narrow jetty for the delivery of AILs only during the construction phase. It would only have berths on the south side. The jetty's simplified structure and reduced functionality allow it to be narrower in width. The jetty would also have been constructed with piles into the seabed and would have allowed vessels to berth offshore.
- **Option 3** (BLF, our final choice) was designed at Stage 2 for the delivery of AILs during the operational phase and potentially the construction phase. Our strategy at Stage 3 is for the BLF to be used in both the construction and operational phases. It would be used to deliver large deliveries into Sizewell C by barge. The barge would be loaded with large deliveries at a transhipment port, towed to the shore, moored in position and the barge beached. Large deliveries would then be transported to site along the BLF access road. To support the overall construction schedule, the BLF would need to be constructed and in operation early for the delivery of large deliveries to enable construction of the initial sea defence.

#### Stage 2 consultation feedback

**7.5.92.** The majority of respondents preferred Option 1 (wide jetty), mainly because it was considered capable of processing the greatest quantity of material and therefore would potentially have the greatest effect on reducing road and rail traffic. Option 3 (BLF) received support from a minority of respondents. Option 2 (narrow jetty) was the least favoured option.

**7.5.93.** Many respondents who commented on the transportation of goods by sea were concerned about the effect of construction on coastal processes and the potential for the infrastructure to alter tidal flows and the shape of the coastline. The second-most commonly expressed concern was the likely impact on ecology, including porpoises, red-throated divers and kittiwakes. This led a minority of respondents to oppose the transportation of goods by sea altogether.

**7.5.94.** Several respondents were concerned about the potential impact that any of the facilities would have on the surrounding community. A few were concerned about their ability to access the beach or swim, as well as potential pollution which may adversely affect tourism.

#### Preferred approach

**7.5.95.** We have chosen not to proceed with the two jetty options for the following principal reasons, which are informed by design development and environmental work since Stage 2 and EDF Energy's experiences from the construction of Hinkley Point C:

- Both jetty options would result in severe underwater noise during construction as a result of the nature of the construction works and the significant amount of time required to construct the jetty. This noise would likely extend to a radius of several kilometres. This would cause significant adverse effects on marine ecology and fisheries, which could only be limited but not removed by extensive seasonal controls on construction activity and would thereby greatly extend the construction programme and the commencement of operation of the power station.
- The jetty options would result in greater habitat loss associated with the footprint of the piles. The BLF also requires piling but to a greatly reduced extent and only in shallow waters which greatly attenuates the radius of underwater noise.
- The BLF is predicted to have a more limited impact on shipping and navigation activities compared with either of the jetty options. This is largely due to additional disruption caused during the jetty construction and decommissioning periods caused by the jetty options. This would not apply to the BLF as it would be retained for use during the operation of the power station.

**7.5.96.** Whilst the jetty options would not have caused any permanent change to the shoreline alignment, they would likely have caused greater temporary effects such as a reduced wave height at the shore and associated short-term changes to the alignment of the shore line.

**Figure 7.51** Example of a Beach Landing Facility

**7.5.97.** A key lesson learned from Hinkley Point C is the benefit of locating the BLF in close proximity to the main platform. Deliveries can then be made directly to the construction site, thereby avoiding the need to make the final journey to the main development site under escort via local roads.

**7.5.98.** We estimate that the BLF would be used infrequently during operation, approximately every 5-10 years for a few weeks at a time, during which we would endeavour to keep any beach closures to a minimum, publicising in advance where possible.

### j) Site-wide infrastructure

**7.5.99.** This section describes the infrastructure and common services required across the main development site that are needed to facilitate the construction of the power station.

#### Drainage

##### Foul water drainage

**7.5.100.** The construction stage foul water drainage network for Sizewell C would be sited within the temporary construction area to the north of the Leiston Drain and would be served by a dedicated sewage treatment plant, prior to this being discharged to sea via the combined drainage outfall (see below).

**7.5.101.** There would be no foul water interface between Sizewell B and Sizewell C.

##### Surface water drainage

**7.5.102.** Work activities undertaken during the construction phase would increase surface water run-off, predominantly due to land use changes and the creation of semi-permeable and impermeable surfaces. Sustainable Urban Drainage Systems (SuDS) would be used, where possible, to manage surface water. The term SuDS covers a variety of potential drainage systems that seek to mimic natural drainage. The key benefits of SuDS over traditional drainage methods include:

- the attenuation of surface water run-off, thereby limiting the potential for flooding and impacts on natural flow regimes;
- the potential infiltration of water back into the ground to recharge groundwater; and
- the control of pollution caused by surface water run-off.

**7.5.103.** Water management zones are commonly used as part of SuDS. A number of water management zones would be created within the main development site, in which surface water run-off would be attenuated, treated (if required) and monitored before being infiltrated back into the groundwater system or discharged to local watercourses under the relevant environmental permit.

**7.5.104.** In order to prevent pollution within the construction areas, features such as oil separators and filters would be used to remove hydrocarbons. For sustainability, water or dewatered groundwater, instead of potable water, may be re-used for construction activities (e.g. dust suppression).

### Combined drainage outfall

**7.5.105.** It is intended that the combined drainage outfall would discharge treated foul water, treated surface water run-off, treated groundwater and dewatering water from the main platform. This outfall is therefore required at an early stage of construction. The outfall is likely to be approximately 1.2m in diameter and will discharge to sea approximately 400m offshore. A plan showing the illustrative route of the outfall is shown in **Figure 7.52.**

## Lighting

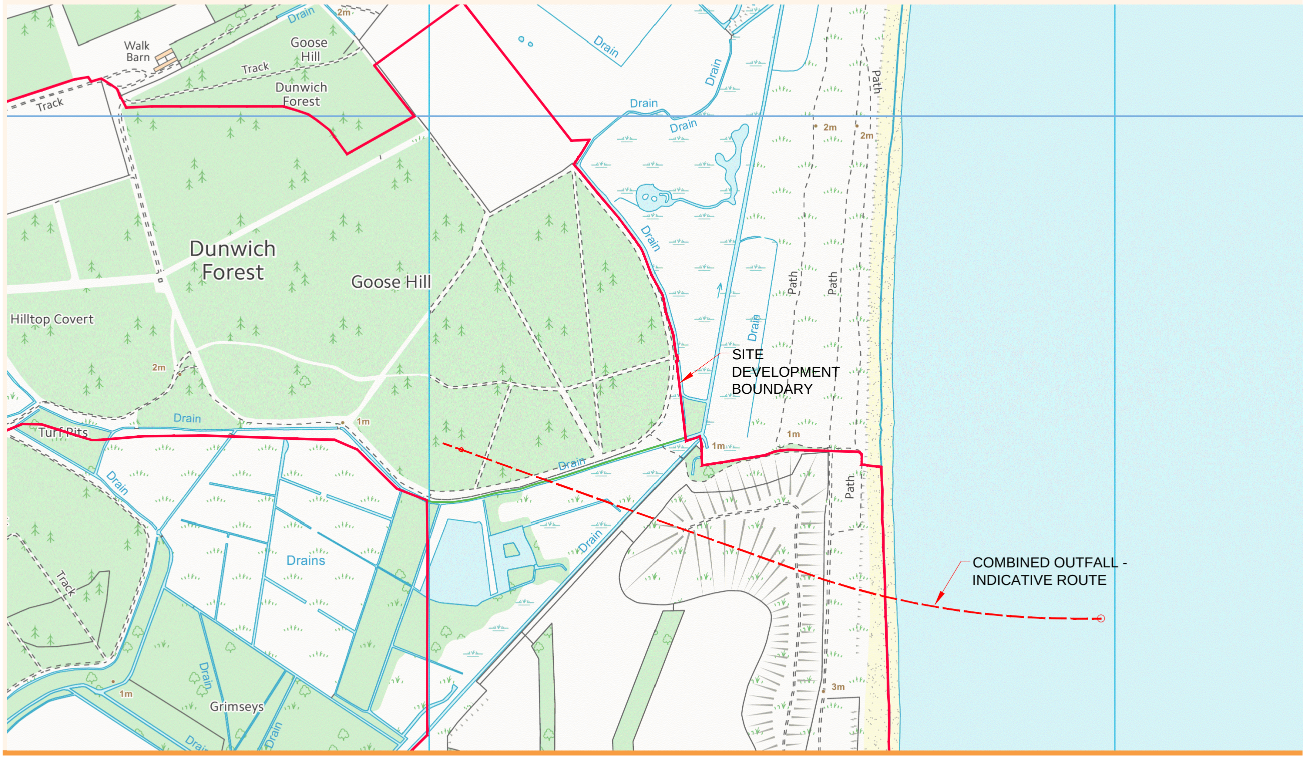
**7.5.106.** The following lighting objectives would be adhered to during the construction phase:

- provide a safe working environment;
- target lighting at where it is required;
- avoid over illumination;
- minimise upwards lighting;
- minimise light spill to neighbouring areas;
- minimise energy consumption; and
- minimise disruption to bats and other species.

**7.5.107.** We recognise that there is a need for a sensitive balance between safety requirements and the potential impacts of light spill on habitats and the wider landscape. As part of the design, the height of lighting columns would be carefully considered in addition to the level of illumination and the use of directional lighting.

**7.5.108.** For some areas of the site, different levels of illuminance will be required for ambient and task lighting. Ambient lighting would typically be provided by fixed lighting installations such as street lighting columns for roads, footpaths and car parks, plus luminaires mounted on buildings to ensure the buildings can be safely accessed and maintained. This level of illumination would be required at all times when natural light levels are insufficient.

**Figure 7.52** Combined drainage outfall, illustrative route



**7.5.109.** Task lighting would typically be provided by portable or fixed switchable lighting installations, which provide a localised increase in illumination to enable specific tasks to be performed safely. Examples include security inspection areas, building sites, fabrication yards, and material handling areas. Construction work would be carried out 24 hours a day on parts of the construction site, such as marine tunnelling works, requiring significant task lighting.

**7.5.110.** Lighting levels will vary across the site and are currently considered to typically comprise the following during the construction stage:

- The main platform, the common user facilities and contractors' compound areas would be lit at all times (up to approximately 200 lux). This includes those facilities located on LEEIE.
- The ecological buffer areas around the majority of the site would not be lit.
- There is unlikely to be ambient lighting in stockpile areas, as they are expected to be used infrequently during hours of darkness. Fixed road lighting should only operate when there is a requirement to access the area. Task lighting would be required exceptionally when there is a requirement to carry out material movements or essential maintenance in hours of darkness (between approximately 5 and 50 lux).
- The accommodation campus (up to 75 lux) and site entrance (up to 50 lux) area would have levels of lighting necessary for safety. Certain parts of the site entrance may require lighting for specific tasks (up to approximately 100 lux).

### Main site access road from B1122 to the main platform

**7.5.111.** As set out in previous consultations, a new main access road would be required during the whole of the construction phase for general construction traffic including HGVs, light goods vehicles, site vehicles (4x4, cars, etc.) and buses to transport workers around the site. This would be a hard surfaced road.

**7.5.112.** Additional access roads, would be constructed to connect compound areas with the main access road, and would consist of narrower hard surface roads.

### Haul roads

**7.5.113.** Haul roads, made of stone or other surface materials, would be required primarily for the movement of heavy earthmoving vehicles transporting earth to/from the main platform to the stockpile areas. In some instances, the haul roads may not be required for the full duration of the construction phase; they might be adapted as necessary to allow use as an access road for general construction traffic.

**7.5.114.** The haul roads need to safely accommodate the movement of the largest excavation haulage vehicles known as CAT 777s, typically 6.5m wide. The haul roads need to be approximately 30m wide in total, including safety bunds and drainage ditches.

### Service roads

**7.5.115.** Service roads would comprise of unsurfaced tracks running along/near the construction fence, to allow for security control and inspection/maintenance of the fence line. A corridor of approximately 4m, with designated passing points at regular intervals, would allow two small security/service vehicles to pass each other. Larger vehicles would also need to utilise the designated passing points.

### k) Parameters during the construction phase

**7.5.116.** In the same manner as for the operational phase, the scale and complexity of the construction process means that there is inherent benefit in providing flexibility within controlled parameters (known as a "Rochdale Envelope" approach) where the environmental effects of doing so are within permissible limits.

**7.5.117.** We are therefore proposing to set maximum heights for construction activities within specific zones of the main development site.

### l) Temporary impact on Sizewell Marshes SSSI

**7.5.118.** The proposed scheme seeks to minimise the temporary use of land within the SSSI for construction purposes. Essential requirements mean that a small proportion of the SSSI needs to be temporarily used to construct permanent features within or adjacent to the SSSI as detailed below.

### Works associated with the main platform and SSSI crossing

**7.5.119.** At Stage 2 we identified that SSSI land would be temporarily required to: construct the north-western edge of the main platform; construct the SSSI crossing; and, divert the Sizewell Drain to maintain the drainage of water to the north. This would result in the temporary use of 2.03ha of SSSI land, which has not changed since Stage 2.

### National Grid works

**7.5.120.** Whilst we identified at Stage 2 that National Grid need to relocate one of its pylons and realign the overhead lines so they can connect to proposed 400kV sub-station, we were unaware that they may require direct access to the SSSI in order to do so. For the overhead power lines to cross the SSSI, as is already the case immediately south of Coronation Wood, we understand that National Grid may need to undertake some ground clearance works within the SSSI along the cable route during its construction. During operation, some trees may need to be pollarded to maintain minimum clearances from the power lines. We will continue to work closely with National Grid to confirm the construction methodology and management plan at the earliest opportunity, with the aim of minimising effects on this part of the SSSI. We have assumed on a precautionary basis that 1ha of SSSI land would be temporarily used.

### Works associated with the temporary construction area

**7.5.121.** Further earthworks modelling has identified that the temporary construction area platform would need to be higher in the area south of Goose Hill and adjacent to Sandlings Walk than previously envisaged. This would be necessary in order to provide a reasonably flat platform between the green rail route and surrounding uses, including the site access road and common user facilities. It is likely that a retaining structure would be required during the construction phase, located immediately on the edge of the temporary construction area and adjacent to the SSSI. In order to build this retaining structure we would need to temporarily use 0.61ha of SSSI land as construction working space, as shown on **Figure 7.29.** This SSSI land comprises fen meadow habitat.

**7.5.122.** Under the road-led strategy the green rail route would not be necessary. A retaining structure would still be likely on the edge of this part of the temporary construction area, but as there are less demands on the platform level the extent of temporary use of SSSI land is likely to be reduced.

**7.5.123.** To provide compensation for these losses EDF Energy has developed a habitat creation scheme at Aldhurst Farm, which is upstream and contiguous with the Sizewell Marshes SSSI. This would provide a series of extensive reed beds with interconnecting ditch habitat within a surrounding matrix of semi-natural acid grassland/heath. Studies are ongoing to also compensate for the loss of the small area of fen meadow. For preliminary environmental information see **Volume 2A, Chapter 2**.

**7.5.124.** Essential requirements mean that a small proportion of the SSSI would also be permanently lost. Further details are set out in **section 7.4 (Figure 7.29).**

## 7.6. Accommodation Campus

### a) Introduction

**7.6.1.** EDF Energy's strategy for accommodating its construction workforce is detailed in **Chapter 4** of this volume. That chapter explains the approach taken in seeking a balance between the provision of temporary worker accommodation (TWA) and the use of existing local accommodation. This section describes the requirements for the accommodation campus, feedback gained from previous stages of consultation and the way in which we have amended our proposals in response.

**7.6.2.** At the Stage 1 consultation, EDF Energy proposed a 2,000 to 3,000 bed single site accommodation campus and consulted on three potential site options:

- **Option 1:** Main development site (EDF Energy's preferred option);
- **Option 2:** Sizewell Gap; and
- **Option 3:** Leiston East.

**7.6.3.** At the Stage 2 consultation, we explained that the main development site had been chosen for the accommodation campus (Option 1 at Stage 1) and that this had been the site considered appropriate by the highest proportion of respondents at Stage 1. Two potential masterplan layout options were consulted on at Stage 2:

- **Option 1:** three and four storey accommodation blocks east and west of Eastbridge Road and sports facilities on-site. This option required a realignment of Eastbridge Road.
- **Option 2:** three, four and five storey accommodation blocks east of Eastbridge Road only with sub-options:
  - Option 2i: sport facilities to the west of Eastbridge Road; and
  - Option 2ii: sports facilities located remotely, with respondents asked to suggest possible locations.

**7.6.4.** Following the Stage 2 consultation, and in consultation with key stakeholders, EDF Energy has assessed the accommodation campus site options against the following considerations:

- feedback to consultation;
- environmental considerations;
- construction and operational requirements;

- transport;
- socio-economics; and
- planning policy.

**7.6.5.** Our preferred location for the accommodation campus continues to be at the main development site. We have however reconsidered the layout of the site to address concerns raised at Stage 2, particularly in relation to massing and 5-storey buildings. **Figure 7.53** shows the preferred site location at this Stage 3 consultation.

**7.6.6.** This is closest in layout to Option 2ii at Stage 2, which had accommodation to the east of Eastbridge Road only and sports facilities off-site. At Stage 3 we are proposing that these are located off-site at Leiston, at a site adjacent to the Leisure Centre and Alde Valley Academy (see **Figure 7.55** below). They will comprise a full size 3G artificial football pitch and 1-2 Multi Use Games Areas (MUGAs).

## b) Site requirements

**7.6.7.** EDF Energy has been considering options for the preferred accommodation campus site and these have been influenced by the following siting considerations:

- accommodate the required bed space numbers, amenity hub, infrastructure and associated parking required;
- provide an attractive and practical environment for the workforce;
- accommodate the realigned Bridleway 19 and retain its rural character as far as possible;
- be sympathetic to the relationship and compatibility with adjoining land uses (existing and proposed);
- consider the design of the proposals in relation to the proximity to the AONB; impact on key viewpoints e.g. Whin Hill and impact on the setting of important buildings e.g. Leiston Abbey;

**Figure 7.53** Plan view of the proposed Campus layout

- take into account the character of the existing natural environment and built environment e.g. Upper Abbey Farm;
- retain existing landscape features within the site where possible and provide a bat corridor along the eastern edge; and
- to ensure safe pedestrian and vehicular movement.

### c) Overview of Stage 2 feedback and response to consultation

**7.6.8.** Option 1 (development to the east and west of Eastbridge Road) was the least preferred of the three options, with Options 2(i) and 2(ii) receiving similar levels of support from the minority of those in the villages of Theberton, Leiston, Middleton and Yoxford. Respondents from the village of Eastbridge were the most consistently opposed to all three options. Respondents from Pro Corda (Leiston Abbey second site), Theberton and Eastbridge however generally described Option 2ii as least worst. Several respondents suggested alternative sites for the campus.

**7.6.9.** Prior to Stage 1, EDF Energy conducted a site selection process. This involved screening sites against a range of criteria including site size, location, potential for legacy uses, environmental considerations (including ecology, landscape designations, flood zones, historic environment) access, land interests, community, planning policy and construction and operational considerations. Consultation with SCC and SCDC was undertaken throughout the site selection process. As a result of this process, the site proposed for the accommodation campus in this Stage 3 consultation was chosen as the most suitable. Co-locating the campus with the construction area would provide benefits not achievable on any other site, including a reduction in traffic commuting daily to site and project efficiencies.

**7.6.10.** Concerns were raised at the Stage 2 consultation regarding environmental matters such as the impact on designated areas, impact on landscape, including the AONB and visibility from Whin Hill, concerns regarding the setting and use of Leiston Abbey, opposition to the site's location, size and design, opposition to the scheme as a whole and to nuclear power. However, the most common reason for opposition to the proposals is the perceived impact they would have on residents of the neighbouring villages and towns (for example, negative social impacts, pressure on local services, and discouraging tourism).

**7.6.11.** With regard to the proposed sports facilities, respondents to the Stage 2 consultation generally considered that the facilities should be suitable for local use, should be close to the accommodation site to limit traffic impact and should avoid creating excessive light pollution. Significant support was received for locating off-site sports facilities in Leiston where they could provide a legacy use.

**7.6.12.** Since Stage 2 we have considered a number of layouts to deliver the required number of bed spaces at the accommodation campus and to respond to the feedback we received. **Table 7.9** provides the key project and design changes that are proposed for this Stage 3 consultation and which now form part of our preferred proposed development.

### d) Site description and proposed development

**7.6.13.** The proposed site for the accommodation campus lies wholly outside of the AONB and away from European designated sites. Impacts on the setting of the AONB are important but would be temporary and would take place in the context of the adjoining construction area.

**7.6.14.** **Figure 7.53** illustrates the illustrative layout of our proposed accommodation campus, with the built form of the accommodation campus sited on the east side of the Eastbridge Road only. This has been achieved through the relocation of the recreation facilities, more efficient planning for the car parking, the filling in of the pit and the re-configuration of the campus amenity and entrance hub facilities. Two storey car parking is proposed and the accommodation buildings are now proposed over three to four (four storey buildings would be approximately 14m in height) storeys. Under this arrangement the three storey buildings would be located nearest to the Eastbridge Road, the four storey buildings near to Bridleway 19. There would be a separation distance between habitable rooms of typically 17m between blocks north and south and 9m between blocks east and west. **Figure 7.54** shows a 3D sketch of the proposed campus layout.

## **Table 7.9** Key project and design changes since the Stage 2 consultation

| Change | Rationale |
|---|---|
| Three layout options were proposed for the accommodation campus at Stage 2. We are now proposing to proceed with Option 2ii with a layout revised to address Stage 2 feedback shown in Figure 7.53. | The key benefit of this change is that it keeps the built development to the east side of Eastbridge Road. This limits impacts on heritage features and the landscape and limits impacts on the approach to Eastbridge. |
| As an option, sports pitches were previously proposed at the accommodation campus site. At Stage 3 we are now proposing that these are located off-site at Leiston, at a site adjacent to the Leisure Centre and Alde Valley Academy. They will comprise a full size 3G artificial football pitch and 1-2 MUGAs.<br>A shuttle bus would provide access for campus workers. | The location of these facilities has the following benefits:<br>• it reduces the scale of land take and visual/lighting effects at the accommodation campus site;<br>• it provides a community asset that can be more easily accessed by the School/ Leisure Centre and members of the public during the construction phase; and<br>• facilities would remain as a legacy for the community following the construction phase. |
| Indicative positioning of car parking on the site has changed so that the majority of parking is no longer located adjacent to rooms on access streets and is instead located in a two storey car park at the northern end of the site and surface level car parking to the south of the accommodation. | To reduce disturbance for workers. The two storey car park would reduce the land take of the car parking so that a more efficient layout can be achieved. |
| Extension of the accommodation campus site approximately 35m north compared to that proposed in the Stage 2 consultation and the infilling of the pit at the northern end of the site. | To allow a reduction in development heights across the site. Utilising the land occupied by the pit results in less landscape and visual impacts compared to the options presented at Stage 2. The accommodation campus is considered to be optimally sized for our accommodation strategy. |
| Option 2ii presented at Stage 2 would have required a range of three to five storey accommodation buildings. We now currently propose three to four storey accommodation buildings stepping up from west to east. | The removal of five storey buildings helps to reduce impacts on Leiston Abbey / the AONB and views, for example, from Leiston Abbey, the footpath north of Leiston Abbey and Whin Hill. |
| Amenity hub reconfigured. | This allows retention of the current access road to Upper Abbey Farm and helps to define a focal space within the campus. |

## **Figure 7.54** 3D sketch of the proposed Campus layout

**7.6.15.** The 2,400 bed accommodation campus would comprise:

- modular buildings with self-contained rooms and en-suite facilities;
- car parking for residents (ratio of one parking space per 1.6 bedspaces, equating to approximately 1,500 parking spaces);
- a canteen/restaurant and kitchen facilities;
- bars and recreational areas;
- central administration offices;
- a gym (on-site);
- waste recycling and facilities to supply energy to the site;
- site security area including fencing;
- perimeter road and appropriate lighting to ensure the safe and secure operation of the site;
- a shop;
- laundry service;
- refuse stores for each block; and
- other utilities and services, including a foul water pump station.

**7.6.16.** The car parking for accommodation campus residents would be provided at the northern end of the site on two levels.  There would also be additional surface level car parking to the south of the accommodation blocks.

**Figure 7.55** Proposed Location of Off-Site Sports Facilities

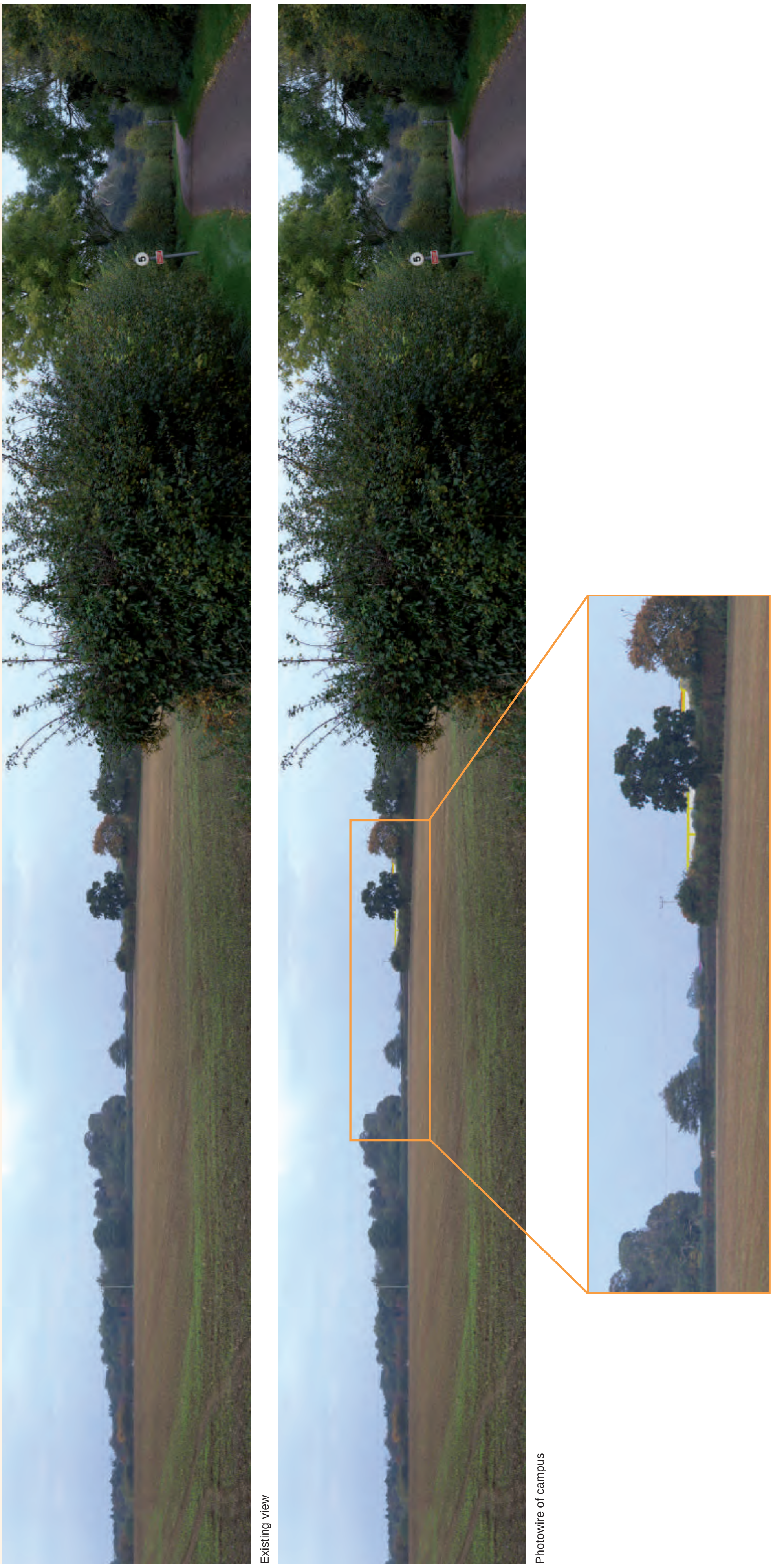
**7.6.17.** The majority of hedgerows and trees around the perimeter of the site would be retained along with two central category B trees. The hedgerows adjacent to the existing bridleway, access road to Upper Abbey Farm and Eastbridge Road would all be retained. In order to help retain the rural character of Eastbridge Road and the realigned bridleway and to minimise views to the campus, the proposals would:

- supplement the existing hedgerow east of Eastbridge Road;
- provide a landscape buffer between the realigned bridleway and the security buffer; and
- provide an additional buffer between the security zone and the campus access road.

**7.6.18.** Off-site sports facilities would be in Leiston, at a site adjacent to the Leisure Centre and Alde Valley Academy (see **Figure 7.55**). They are proposed to comprise a full size 3G artificial surface football pitch and 1-2 MUGAs. Consent would likely be sought through a Town and County Planning Act (Ref. 7.6) application with funding secured through the s106 agreement for Sizewell C and we are working with SCDC and their partners to define management and access arrangements. Use of the facilities would be shared between the school, the local community and the workforce.

**7.6.19.** Photomontages from three viewpoints are provided below in **Figures 7.56, 7.57** and **7.58.**

**Figure 7.56** Photomontage from viewpoint at Leiston Abbey car park



Existing view

Photowire of campus

**Figure 7.57** Photomontage from viewpoint at the footpath north of Leiston Abbey

Existing view

Photowire of campus

**Figure 7.58** Photomontage from viewpoint at RSPB Minsmere Whin Hill

Existing view

Photowire of campus

# 8. Rail

## 8.1. Introduction

**8.1.1.** This chapter provides information on EDF Energy's proposals for the use of rail in the delivery of freight during the construction of the Sizewell C project. Freight deliveries would include a range of materials such as aggregates, cement and reinforced steel, as well as containerised goods.

### a) Stage 2 consultation

**8.1.2.** In our Stage 2 consultation, we explained that if a rail-led freight transport strategy were to be pursued, we would use the existing Sizewell Halt rail terminal at Leiston (located south of King George's Avenue, at the end of the Saxmundham to Leiston branch line) in the early years of construction. This would enable up to two freight trains to be operated by EDF Energy per day (four movements).

**8.1.3.** After the early years of construction, under a rail-led strategy there would be a need for a greater number of freight deliveries per day than can be accommodated at Sizewell Halt. In our Stage 2 consultation we consulted on two alternative options to meet this need, which would allow up to five freight trains per day (ten movements):

- the green rail route option for a rail extension which would branch off the existing Saxmundham to Leiston line into the main construction area on a temporary basis; or
- a new rail terminal on land east of Eastlands Industrial Estate (LEEIE).

**8.1.4.** Our Stage 2 consultation also explained that rail improvements would be required to the East Suffolk line and the Saxmundham to Leiston branch line to support the use of these lines by EDF Energy for freight.

### b) Stage 3 consultation

**8.1.5.** In **section 8.4** we explain how feedback from the Stage 2 consultation has led us to select the green rail route as our preferred proposal if a rail-led strategy is pursued. Once available, the green rail route would be used for up to five freight trains per day (ten movements).

**8.1.6.** Prior to the availability of the green rail route, one of the following options would be used for up to two trains per day (four movements):

- use of the existing Sizewell Halt rail terminal with reconfiguration of the existing railhead required in order to accommodate longer trains and provision of an overhead conveyor to transfer freight material back into the LEEIE (Option 1); or
- construction of a new rail siding adjacent to the existing branch line on the LEEIE (Option 2).

**8.1.7.** Under the rail-led strategy, the requirement for five freight trains per day (ten movements) would necessitate some upgrade works to the East Suffolk line to ensure that there is sufficient capacity for freight deliveries and passenger services to operate without impeding one another. In addition, a series of branch upgrades would be carried out on the Saxmundham to Leiston line.

**8.1.8.** As explained in **Chapter 1** of this volume, EDF Energy is also considering a road-led strategy for freight delivery as an alternative to a rail-led strategy. The road-led strategy would not require the green rail route to be constructed. Instead, throughout the duration of the construction, either Option 1 or Option 2 as described above would be used for up to two trains per day (four movements). Subject to further work by Network Rail, all of the upgrade works to the East Suffolk line are not expected to be required under the road-led strategy, but the branch upgrades on the Saxmundham to Leiston line would be provided.

**8.1.9.** The proposed works are informed by EDF Energy's ongoing work with Network Rail and, in particular, the findings of Network Rail's feasibility study, which has provisionally identified the works required to the East Suffolk line and to the Saxmundham to Leiston branch line in order to support up to two freight trains per day or up to five freight trains per day.

**8.1.10.** The preliminary environmental information presented in **Volume 2A, Chapter 3** (which deals with the green rail route) and **Volume 2A, Chapter 4** (which deals with other rail improvements) provides detail on how EDF Energy is taking potential environmental effects into account.

**8.1.11. Table 8.1** summarises the nature of the rail works which would be required under the rail-led and road-led strategies.

## Table 8.1 Rail works required under rail-led and road-led strategies

| Rail works required for a rail-led strategy | Rail works required for a road-led strategy |
|---|---|
| Two alternative options which would be used in the early years of construction (prior to completion of the green rail route) for up to two freight deliveries per day (four movements):<br>**Option 1: Sizewell Halt**<br>Use of the existing Sizewell Halt rail terminal located south of King George's Avenue.<br>Reconfiguration of the existing railhead in order to accommodate longer trains.<br>An overhead conveyor to transfer freight material back into the LEEIE.<br>OR<br>**Option 2: New rail siding**<br>Construction of a new rail siding adjacent to the existing branch line on the LEEIE.<br>See **section 8.3.** | Two alternative options which would be used throughout the construction period for up to two freight deliveries per day (four movements):<br>**Option 1: Sizewell Halt**<br>Use of the existing Sizewell Halt rail terminal located south of King George's Avenue.<br>Reconfiguration of the existing railhead in order to accommodate longer trains.<br>An overhead conveyor to transfer freight material back into the LEEIE.<br>OR<br>**Option 2: New rail siding**<br>Construction of a new rail siding adjacent to the existing branch line on the LEEIE.<br>See **section 8.3.** |
| **Green rail route:** Once constructed, this new rail line branching off the existing Saxmundham to Leiston line would be used to support up to five freight deliveries per day (ten movements).<br>It would run from Saxmundham Road to Buckleswood Road; Buckleswood Road to B1122 (Abbey Road); and B1122 (Abbey Road) into the main construction area.<br>It would require:<br>• part of Buckleswood Road to be stopped up to vehicular traffic and the construction of a new footbridge connecting the intersected parts of Buckleswood Road (Option 1) OR a new level crossing on Buckleswood Road (Option 2);<br>• the north-south footpath between Saxmundham Road and Abbey Lane (E-363/003/0) to be diverted across the new railway line via the new Buck-leswood Road level crossing or footbridge;<br>• the construction of a new level crossing where the new railway line crosses the B1122 (Abbey Road);<br>• the north-south footpath linking Abbey Lane and Westward Ho (E-363/006/0) to be diverted across the new railway line via the new level crossing on the B1122 (Abbey Road);<br>• the north-south footpath linking Abbey Lane to the B1122 (Abbey Road) (E-363/010/0) to be diverted across the new railway line via the new level crossing on the B1122 (Abbey Road); and<br>• the relocation of the junction of the B1122 (Abbey Road) and Lover's Lane.<br>See **section 8.4.** | **Green rail route:** Not required. |
| **East Suffolk line upgrades:** Infrastructure upgrades on the East Suffolk line would be required in order to accommodate up to five freight trains per day once the green rail route is operational. These upgrades would include:<br>• a passing loop at a location between Ipswich and Saxmundham;<br>• signalling upgrades;<br>• a track crossover at Saxmundham;<br>• up to 45 level crossings to be upgraded or closed, and rights of way to be diverted; and<br>• strengthening works to six bridges.<br>See **section 8.5.** Further details of our level crossing proposals are set out in **Chapter 9** of this volume. | **East Suffolk line upgrades:** EDF Energy does not expect that any upgrades to this line would be required. However, Network Rail is carrying out further assessments and it is possible that some of the infrastructure upgrades required under the rail-led strategy may also be required under the road-led strategy.<br>See **Section 8.7**. |

| Rail works required for a rail-led strategy | Rail works required for a road-led strategy |
|---|---|
| **Saxmundham to Leiston branch upgrades:**<br>• the existing track would be repaired or replaced to the standard required for freight transport; and<br>• nine level crossings would be upgraded.<br>See **section 8.6**. | **Saxmundham to Leiston branch upgrades:**<br>• the existing track would be repaired or replaced to the standard required for freight transport; and<br>• nine level crossings would be upgraded.<br>See **section 8.7.** |

## 8.2. Summary of rail proposals (rail-led strategy)

### a) Early years

**8.2.1.** We explained in our Stage 2 consultation that if a rail-led freight transport strategy were to be pursued, we would use the existing Sizewell Halt rail terminal at Leiston in the early years of construction.

**8.2.2.** However, we are now consulting at this Stage 3 consultation on two alternative options for the transport of freight during the early years of construction of Sizewell C prior to completion of the green rail route:

- **Option 1:** EDF Energy would make use of the existing Sizewell Halt rail terminal located south of King George's Avenue to accommodate up to two freight deliveries per day (four movements). Some potential amendments to the Sizewell Halt layout may be required to facilitate deliveries. This includes reconfiguration of the existing railhead required in order to accommodate longer trains and provision of an overhead conveyor to transfer freight material back into the LEEIE; or
- **Option 2:** EDF Energy would construct a new rail siding adjacent to the existing branch line on the LEEIE for use by up to two freight deliveries per day (four movements).

### b) Main construction phase

**8.2.3.** We explained in our Stage 2 consultation that our freight management strategy envisaged that up to five freight trains (ten movements) per day would be required during the peak construction phase. EDF Energy consulted at Stage 2 on two options to meet this need:

- **the green rail route:** the construction of a rail extension which would branch off the existing Saxmundham to Leiston line into the main construction area on a temporary basis; or
- **new rail terminal on LEEIE:** the use of the existing Saxmundham to Leiston branch line and construction of a new rail terminal and freight laydown area on LEEIE, with onward delivery to the main construction area by Heavy Goods Vehicles (HGV) via Lover's Lane.

**8.2.4.** For the reasons explained in **section 8.4(a),** we have decided to take forward the green rail route as our preferred proposal in a rail-led scenario in this Stage 3 consultation. The green rail route as now proposed is described in **section 8.4(c).**

### c) Other rail improvements

**8.2.5.** The requirements for other supporting rail improvements proposed in this Stage 3 consultation include the construction of a 'passing loop' (a section of double track) on the East Suffolk line between Ipswich and Saxmundham. Additional signalling would be required between Ipswich and Saxmundham to enable trains to be dispatched more efficiently along this section of line and a track crossover might also be required at Saxmundham to avoid a capacity constraint at the point where the track joins the Saxmundham to Leiston branch line. In addition, Network Rail have confirmed that 45 level crossings along the route from Ipswich to the Saxmundham junction may require upgrading or closure. Strengthening works to six bridges may also be required. We provide an update on those proposals in **sections 8.5** and **8.6.**

**8.2.6. Figure 8.1** shows a summary of the rail proposals for a rail-led strategy.

## Figure 8.1 Summary of rail proposals for rail-led strategy


### d) Post-operation

**8.2.7.** Following completion of construction of Sizewell C, the following would be removed and the land restored to its previous condition:

- if Option 1 (Sizewell Halt) is progressed, the overhead conveyor at Sizewell Halt (the reconfigured rail head would remain);
- if Option 2 (new rail siding) is progressed, the rail siding adjacent to the existing branch line on the LEEIE; and
- the green rail route.

**8.2.8.** Following removal of the green rail route, any highway that had been diverted or stopped up as a requirement of the green rail route would be reinstated and the footbridge (if provided) and level crossings removed. The relocated junction of the B1122 and Lover's Lane would remain in place.

**8.2.9.** All of the other rail upgrades and improvements would be retained.

## 8.3. Sizewell Halt or new siding (rail-led strategy)

### a) Option 1: Sizewell Halt

**8.3.1.** Sizewell Halt is located on the branch line that formerly ran from Saxmundham as far as Aldeburgh. It is owned and operated partly by EDF Energy and partly by Direct Rail Services Limited (DRS), a wholly owned subsidiary of the Nuclear Decommissioning Authority (NDA). More recently it has been used only for infrequent freight trains associated with the transport of spent fuel from the decommissioning of the Sizewell A power station.

**8.3.2.** The current rail terminal has insufficient capacity to fully meet the requirements for rail-delivered freight during the whole period of the construction phase, as it can only serve a maximum of two trains per day, and at peak construction up to five freight trains per day would be required under the rail-led strategy.

**8.3.3.** Under the rail-led strategy, Sizewell Halt would be used only during the early years of construction prior to the availability of the green rail route. Once the green rail route became operational, it would be more efficient for trains to use that route directly into the main development site.

**8.3.4.** Freight delivered to Sizewell Halt would be transferred by HGV along Lover's Lane to the main development site.

**8.3.5.** DRS supplies transport and associated services to the nuclear industry, supporting the NDA's decommissioning activities, as well as offering services in other sectors of the rail market. DRS expressed their support for the project in response to our Stage 2 consultation, but requested more detailed discussions with EDF Energy in order to identify opportunities for EDF Energy and DRS to work together during the construction and operational phases of the project. DRS highlighted its duties to fulfil contractual commitments to provide rail transportation to Magnox Limited, and potential future need to use Sizewell Halt in connection with the decommissioning of Sizewell A and B, as well as for other commercial opportunities outside of the nuclear sector. EDF Energy continues to engage with DRS, and is confident that use of Sizewell Halt for the project would be compatible with DRS's needs.

**8.3.6.** In addition, following the Stage 2 consultation, EDF Energy has undertaken work to plan the optimisation of the layout of the Sizewell Halt to enable it to accommodate longer trains as shown in **Figure 8.2.**

**8.3.7.** EDF Energy proposes to:

- run two freight trains on the East Suffolk line between Ipswich and the Saxmundham junction outside of the passenger timetable (between approximately 23.00 and 06.00);
- stable those trains on the Saxmundham to Leiston branch line at the two locations shown in **Figure 8.3**); and
- only allow them to depart along the Saxmundham to Leiston branch (towards the Sizewell Halt) between approximately 06.00 and 23.00.

**8.3.8.** For return journeys from Sizewell Halt, it is anticipated that the trains would leave during the evening and stable on the Saxmundham to Leiston branch line at the locations shown in **Figure 8.3** in readiness to access the East Suffolk line towards Ipswich after the last passenger train at approximately 23.00.

**8.3.9.** Network Rail has also identified that in order to support use of the Leiston to Saxmundham line for two freight trains, upgrades would be needed to the nine level crossings on this line. There are nine operational level crossings on the Saxmundham to Leiston branch line between the Saxmundham junction and Sizewell Halt that will be subject to upgrade works (see **Chapter 9** of this volume for details of the upgrade works):

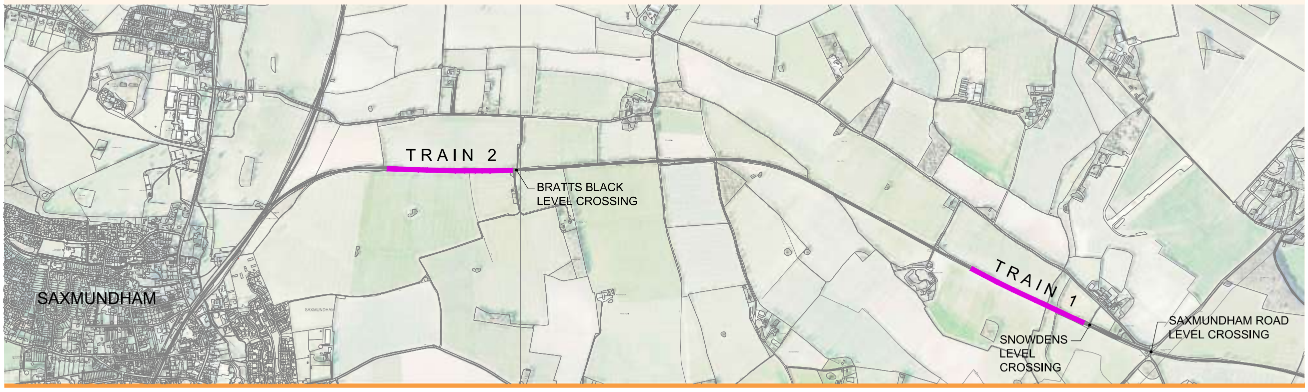
- Bratts Black House;
- Knodishall;
- Westhouse;
- Snowdens;
- Saxmundham Road;
- Buckles Wood;
- Summerhill;
- Leiston; and
- Sizewell.

## Figure 8.2 Land east of Eastlands Industrial Estate: Option 1 Sizewell Halt


KEY

- Stage 3 Consultation Boundary
- Access Road
- Buffer Zone (faded aerial)
- Existing Public Right of Way
- Off-Road Cycle/Bridleway
- Logistics Compound
- Topsoil Stockpile
- Materials Storage Areas
- Reconfigured rail head
- Aggregate Conveyors

## **Figure 8.3** Stabling locations on the Leiston branch line




### b) Option 2: New rail siding

**8.3.10.** An alternative to the use of Sizewell Halt during the early years of construction is for EDF Energy to construct a new rail siding adjacent to the existing branch line on the LEEIE. This location would offer more efficient discharge of materials and a reduced impact on King George's Avenue.

**8.3.11.** This would be used for up to two freight deliveries per day (four movements).

**8.3.12.** Freight delivered to the new rail siding would be transferred by HGV along Lover's Lane to the main development site.

**8.3.13.** Under the rail-led strategy, this new rail siding would be used only during the early years of construction prior to the availability of the green rail route. Once the green rail route became operational, it would be more efficient for trains to use that route directly into the main development site.

**8.3.14.** **Figure 8.4** shows the proposed layout for this alternative option.

**8.3.15.** **Chapter 7** of this volume provides further information on these proposals.

## **Figure 8.4** Land east of Eastlands Industrial Estate: Option 2 rail siding


KEY

- Stage 3 Consultation Boundary
- Access Road
- Buffer Zone (faded aerial)
- Existing Public Right of Way
- Off-Road Cycle/Bridleway
- Logistics Compound
- Topsoil Stockpile
- Materials Storage Areas
- Reconfigured rail head
- Aggregate Conveyors

## 8.4. Green rail route (rail-led strategy)

### a) Consultation response and rationale for selection

**8.4.1.** Most respondents were supportive of rail transport as a means of reducing construction traffic on local roads, and the majority saw the green rail route as the best way to meet this goal. Many respondents felt that the green rail route was more appropriate than the provision of a new rail terminal on LEEIE because the latter would require road transport of freight from the new terminal to the main construction area, whereas the former would not. Respondents in Leiston, Middleton, Saxmundham, Woodbridge, Aldeburgh, Sizewell and Melton were particularly supportive of the green rail route. This was in many cases because they believed it would have less impact on their villages and communities. Respondents noted that a new rail terminal on LEEIE would require trains to run along the full length of the branch line through Leiston, which would have a greater impact on residents. By routing a new rail line away from more populated areas, many respondents hoped to reduce the intrusion that the development would bring.

**8.4.2.** While most respondents were supportive of the green rail route because of the reduced road traffic associated with it, some local concerns were raised in relation to:

- the potential for the proposed level crossing on the B1122 (Abbey Road) to disrupt local traffic, and the police stated that they would like to understand the impact of the level crossing in more detail;
- the noise impact of any increase in rail traffic, particularly if trains were to use the line at night;
- the air quality impacts to those living closest to the proposed line, especially if trains were to be stationary for long periods or if stationary traffic were to build at the level crossing;
- the closure of Buckleswood Road – safety concerns were raised in particular by Summerhill School, who stated that the road was a vital route for the emergency services when travelling between the school and Ipswich Hospital;
- the impact on local businesses;
- the visual impact of the proposed footbridge connecting the two parts of Buckleswood Road intersected by the new railway line;
- the visual and noise impact on local buildings such as Leiston Abbey, which houses a music school (Pro Corda Inspirational Ensemble Training), and Historic England in particular expressed concern about the green rail route due to its impact on the setting of Leiston Abbey;
- the environmental impact on local woodland, which is registered as a Site of Special Scientific Interest. This concern was expressed in particular by Suffolk Coastal Friends of the Earth. Concern was also expressed over the impact of rail movements on rare and protected species of bats who make their homes in the woods of Goose Hill, Kenton Hill and Buckle's Wood, as well as other species;
- the impact on the surrounding agricultural land – many felt that good agricultural land should not be sacrificed and that this could have an impact on the survival of farms in the area; and
- the potential impact on archaeology in an area.

**8.4.3.** Despite these potential impacts, the majority of respondents felt that the impacts on traffic, local residents and the environment would be better if the green rail route were selected rather than a new rail terminal on LEEIE. A small number of respondents suggested alternative relief road options, including a direct link road to the A12, a road previously conceived to alleviate the effects of Sizewell B construction. However, given the overwhelming support for the green rail route over a new rail terminal on LEEIE or any other proposals, EDF Energy has decided to take forward the green rail route as its preferred proposal for the main construction phase under the rail-led strategy in this Stage 3 consultation.

**8.4.4.** **Section c)** below describes the green rail route as proposed in this Stage 3 consultation. In order to provide context, we also describe in **section b)** the land in which the green rail route is proposed to be located.

### b) Site description

**8.4.5.** The proposed green rail route extends in a north-easterly direction from the existing Saxmundham to Leiston branch line, approximately 1.5 kilometres west of Leiston, into the main development site.

**8.4.6.** **Figure 8.5** shows an indicative sketch of the green rail route viewed from Leiston Abbey.

**8.4.7.** There are a number of small settlements, individual properties and isolated farmsteads near to the green rail route. The land within and around the green rail route is predominantly arable farmland (Grades 2 and 3) interspersed with scattered woodlands, copses and hedgerows. The route lies within two landscape character areas, the 'ancient estate claylands' and the 'estate sandlands'. The former is characterised by features such as an organic pattern of field enclosures, straight boundaries, where the influence of privately owned estates is strongest, and blocks of ancient semi-natural woodland. The latter is described as a flat, or very gently rolling, plateau of free-draining sandy soils with extensive areas of heathland or acid grassland, strongly geometric structure of fields enclosed in the 18th and 19th centuries, and large continuous blocks of commercial woodland.

**8.4.8.** Buckle's Wood, an Ancient Woodland, lies 100 metres (m) north-west of the green rail route alignment, with the fields on either side of Buckleswood Road described as pre-18th century enclosures. Two cropmark features, of possible prehistoric date, have been identified from aerial photographs in the fields to the north-east of Buckleswood Road, on either side of the route corridor. Various archaeology finds have been recorded along the route corridor, including those dating from the Bronze Age, Romano-British and Medieval periods.

**8.4.9.** The route is within Flood Zone 1. The nearest watercourse is Leiston Beck, which would be crossed to the west of Abbey Road, and is essentially a small agricultural ditch. The route corridor is mainly underlain by the Lowestoft Diamicton (boulder clay, Unproductive Strata) along the western and central sections and by the Lowestoft Sand and Gravels (Secondary A Aquifer) in the east. These superficial deposits overlie the Crag Group, comprising sands, gravels, silts and clays (Principal Aquifer). The westernmost part of the route, where it joins the existing rail line, crosses Source Protection Zone 3 of a groundwater abstraction.

**8.4.10.** Along the route corridor, there are various local 'B' and other minor roads. From west to east these are: Buckleswood Road; Abbey Lane; the B1122 (also called Abbey Road near Leiston and Leiston Road near Theberton); and Lover's Lane.

**8.4.11.** The green rail route would cross a number of footpaths and recreational routes, which from west to east include:

- Sustrans Regional Cycle Route 42 along Abbey Lane until a point south of the second Leiston Abbey site;
- footpath between Saxmundham Road and Abbey Lane (E-363/003/0);
- footpath between Westward Ho (road) and Abbey Lane (E-363/006/0);
- footpath between B1122 (Abbey Road) and Abbey Lane (E-363/010/0);
- Bridleway 19 on Lover's Lane (E-363/013/0); and
- Sandlings Walk, a long distance route between Eastbridge Road and the Suffolk Coast Path (another long distance route following the coastline and passes through the main development site).

### c) Proposals

**8.4.12.** Our proposed design for the green rail route remains largely as described in our Stage 2 consultation, except that either:

- part of Buckleswood Road would be stopped up and a new footbridge would be constructed (Option 1) (refer to **Figure 8.6**); or
- a new level crossing would be provided on Buckleswood Road (Option 2) (refer to **Figure 8.7**).

**8.4.13.** The proposal is described, running from west to east, for the following sections of the route:

- Saxmundham Road to Buckleswood Road;
- Buckleswood Road to B1122 (Abbey Road); and
- B1122 (Abbey Road) to the main development site.

#### Saxmundham Road to Buckleswood Road

**8.4.14.** The green rail route would connect to the existing railway line via a new rail junction approximately 500m east of the Saxmundham Road level crossing and 230m south of Buckle's Wood.

**8.4.15.** It is anticipated that the construction of the rail extension would start from the eastern end of the route and work west along the route corridor. Some limited access may be required at the western end, around Buckleswood Road. An area of land has been identified in this location for use as a temporary contractors' laydown area. This area is bounded to the east by Buckleswood Road, to the south by the existing rail line, and to the north by the proposed rail

**Figure 8.5** Green rail route indicative sketch

extension. Vehicular access to the area would be provided off Buckleswood Road. An area of landscaped spoil bunding is proposed along the western boundary of the rail line to screen the development from residential properties on the opposite side of the road.

**8.4.16.** Leiston House (Grade II* listed) lies to the south of the proposed rail junction and south-west of the contractors' compound. However, the existing rail line provides a degree of shielding and little, or no, impact to the setting of this listed building is envisaged.

**8.4.17.** The route would extend in a north-eastwards direction running across an existing public footpath (E-363/003/0), which links Saxmundham Road and Abbey Lane, before crossing Buckleswood Road to the west of Wood Farm. It is proposed either:

- to stop up and close Buckleswood Road either side of the rail line extension for the duration of the construction works and to construct a new footbridge connecting the intersected parts of Buckleswood Road (Option 1); or
- to provide a new level crossing on Buckleswood Road (Option 2).

**8.4.18.** At present a relatively low volume of traffic uses Buckleswood Road, with an average daily two-way traffic flow of around 300 vehicles. There are also a number of local alternative routes.

**8.4.19.** If EDF Energy were to progress with the option of stopping up part of Buckleswood Road, it is proposed to provide a footbridge, with ramped access over the rail line, to retain the route for pedestrians and cyclists. This footbridge would also allow the existing north-south footpath between Saxmundham Road and Abbey Lane (E-363/003/0) to be diverted across the railway at this location. Approaching from the south, users would pass along the eastern side of the new rail line before crossing the footbridge. They would then walk or cycle westwards along Buckleswood Road, which would be stopped up to vehicular traffic, as far as the point where it meets the original footpath. The proposed arrangements at this location are shown in **Figure 8.6**. Once construction is complete the rail line would be removed and the highway reinstated.

**8.4.20.** It is recognised that there is local concern about the closure of Buckleswood Road. EDF Energy is therefore proposing at this Stage 3 consultation an alternative option of providing a new level crossing on Buckleswood Road (see **Figure 8.7**). Further work will need to be undertaken in consultation with the Office of Rail Regulation (ORR) to explore this further.

**8.4.21.** As explained in our Stage 2 consultation, consideration has also been given to a road bridge to carry Buckleswood Road over the rail line at this location. However, the embankments required to raise the road would be likely to result in significant visual impact, particularly since the close proximity to the railway junction restricts the possibilities for lowering the railway line in cutting within an acceptable gradient.

### Buckleswood to the B1122 (Abbey Road)

**8.4.22.** From Buckleswood Road, the green rail route continues further north-eastwards through open countryside and farmland to the south of Abbey Lane. There is some potential for indirect impacts to the setting of Grade II listed Fisher's Farm House, north-west of the route.

**8.4.23.** Where the rail line extension would meet the B1122 (Abbey Road) a level crossing is proposed to accommodate pedestrians, cyclists and equestrians as well as motor vehicles, similar to the arrangements at the existing Saxmundham railway station level crossing, as shown in **Figure 8.8**. On each side of the railway, adjacent waiting areas for pedestrians/cyclists and equestrians would be provided.

**8.4.24.** To provide the necessary amount of space between the level crossing and other road junctions, the junction of the B1122 (Abbey Road) and Lover's Lane would need to be moved approximately 100m to the south. It is proposed that this would be a permanent re-alignment of Lover's Lane, to improve visibility at this junction for all road users. The old alignment of Lover's Lane would be partially reused as an off-road route for pedestrians, cyclists and equestrians.

**8.4.25.** The B1122 (Abbey Road) would be temporarily realigned to enable the construction of the level crossing. The diversionary route for pedestrians, cyclists and

## **Figure 8.6** Green rail route masterplan: Option 1 closure of Buckleswood Road


KEY

- Stage 3 Consultation Boundary
- Green Rail Route
- Temporary Contractor Compound
- Grassed Spoil Bund
- Grassed Areas
- Proposed / Existing Planting
- Existing Public Right of Way
- Proposed Diverted Public Right of Way

## **Figure 8.7** Green rail route masterplan: Option 2 proposed level crossing


KEY

- Stage 3 Consultation Boundary
- Green Rail Route
- Temporary Contractor Compound
- Grassed Spoil Bund
- Grassed Areas
- Proposed / Existing Planting
- Existing Public Right of Way
- Proposed Diverted Public Right of Way

equestrians would run alongside the eastern kerb of this temporary road. Once the level crossing is complete, the B1122 would return to its original alignment and pedestrians, cyclists and equestrians would be accommodated along its eastern side.

**8.4.26.** The realignment of Lover's Lane at its junction with the B1122 (Abbey Road) would remain in place once the railway line is removed; the B1122 would continue to run north-south across the location of the former level crossing. The old alignment of Lover's Lane would remain in place as a route for pedestrians, cyclists and equestrians.

**8.4.27.** The level crossing is anticipated to be closed to road users no more than ten times per day, and on many days less frequently than this. Each closure would last around three minutes and therefore any delays to traffic would be minimal.

**8.4.28.** EDF Energy has held initial discussions with the ORR on this issue, who has confirmed the potential acceptability of a new temporary level crossing given the considerations set out above.

**8.4.29.** For these reasons, EDF Energy considers that the provision of a level crossing at Abbey Road, on a temporary basis during the construction of the project, is the most appropriate option given the issues associated with the alternatives.

**8.4.30.** To the west of the B1122 the route cuts across two public footpaths, both of which run in a north-south alignment (refer to **Figure 8.6**). The western footpath links Westward Ho and Abbey Lane (E-363/006/0) and the eastern one passes alongside the second Leiston Abbey site linking the B1122 (Abbey Road) and Abbey Lane (E-363/010/0).

**8.4.31.** It is proposed to divert both of these footpaths eastwards to the proposed B1122 (Abbey Road) level crossing before heading back westwards and re-joining the original alignment. Pedestrians would be able to cross the railway line safely, without having to cross the B1122.

**8.4.32.** It would be possible to provide a single pedestrian bridge across the rail line for these two existing public footpaths. However, a bridge and associated embankments would add to the visual impact of the rail line extension in the landscape in the proximity of Leiston Abbey. A level crossing for pedestrians is not considered appropriate in line with guidance from the ORR.

### B1122 (Abbey Road) to the main development site

**8.4.33.** East of B1122 (Abbey Road), the rail line would run broadly parallel with Lover's Lane for approximately 800m. Along this section of the line a security area is proposed, allowing trains to stop and be searched prior to entry or exit from the main development site. The land to the north of Lover's Lane currently follows a steeper slope, so a railway cutting approximately 5m deep would be required. This cutting would reduce the visual impact of the proposal as viewed from Leiston Abbey, since the track (and passing trains) would be partially obscured by the embankment and associated bunding to the north.

**8.4.34.** The rail line would then turn north-eastwards, passing close to Fiscal Policy woodland where it would run parallel with the northern edge of Kenton Hills. A rail terminal and handling area would be provided in this location. The route would then turn to the south-east for a short distance before continuing eastwards into the Goose Hill area, terminating north of the main platform. Further details of the easternmost section of the green rail route, within the main development site, are provided in **Chapter 7** of this volume.

### d) Construction and operational considerations

**8.4.35.** It is anticipated that the green rail route line would be privately owned and operated by EDF Energy, with its construction, operation and maintenance being EDF Energy's responsibility.

**8.4.36.** The rail line would be designed and constructed to Network Rail's standards. A maximum train speed of 25 miles per hour (mph) has been assumed along the length of the route, although trains would run at lower speeds on certain sections.

**8.4.37.** The railway line would be constructed early in the construction phase of the project. It is envisaged that construction of the rail infrastructure itself would start at the eastern end and progress westwards, with the main contractor's compound situated at the eastern end (within the main construction area) and a smaller one at the western end (shown on **Figure 8.6**).

## **Figure 8.8** Level crossing at B1122 Abbey Road

## 8.5. Upgrades to the East Suffolk line (rail-led strategy)

**8.5.1.** Under the rail-led strategy, all trains bringing materials for the construction of Sizewell C would travel along the East Suffolk line as far as Saxmundham and then along the branch line towards Leiston.

**8.5.2.** At the Stage 2 consultation, we explained that due to the hourly passenger service operating between Ipswich and Lowestoft, combined with the existing sections of single track, there is very limited capacity on the line to accommodate the additional freight services required for the project. We explained that we were working closely with Network Rail to establish the upgrades required to increase the track capacity to accommodate the additional five freight trains a day, over and above the existing passenger timetable, and to identify the precise location of a 'passing loop' (a section of double track) on the East Suffolk line between Ipswich and Saxmundham in order to increase the capacity of the existing single track.

**8.5.3.** At Stage 2, we also noted that additional signalling would be required between Ipswich and Saxmundham to enable trains to be dispatched more efficiently along this section of line, and that a track crossover might also be required at Saxmundham to avoid a capacity constraint at the point where the track joins the Saxmundham to Leiston branch line.

**8.5.4.** The feasibility study carried out by Network Rail since the Stage 2 consultation has confirmed that all of the infrastructure upgrades described above would be required in order to support use of the East Suffolk line for up to five freight trains per day. In addition, the feasibility study confirmed that 45 level crossings along the route from Ipswich to the Saxmundham junction may require upgrading or closure and six bridges would potentially require strengthening.

**8.5.5.** Each of these infrastructure upgrade works is described in more detail below. It is intended that all of the proposed works on the East Suffolk line would be carried out by Network Rail.

### a) Passing loop

**8.5.6.** The Network Rail feasibility study identified three options for the location of a passing loop between Ipswich and Saxmundham:

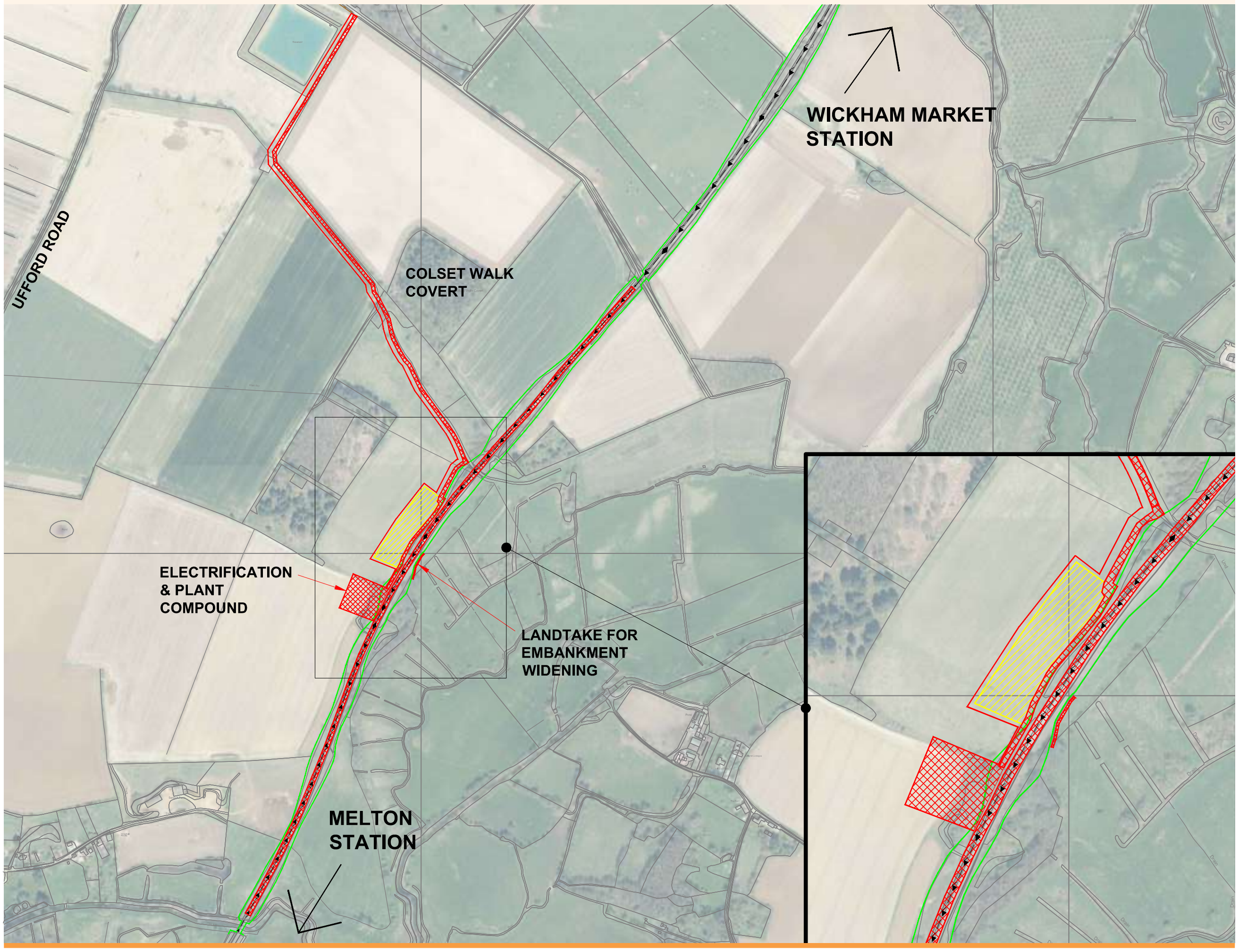
- Option 1: Between Wickham Market Station and the Orchard Level Crossing.
- Option 2: Between the Orchard Level Crossing and the Pettistree Level Crossing.
- Option 3: Between the Pettistree Level Crossing and the Uffold Level Crossing.

**8.5.7.** EDF Energy has discounted Option 1 in response to feedback from the Stage 1 consultation, where concerns were expressed about the proximity of a passing loop in this area to existing housing at Campsea Ashe. EDF Energy has also discounted Option 2 due to the complexity of construction at this location.

**8.5.8.** In this Stage 3 consultation we are therefore taking forward and seeking views on Option 3, details of which are set out below.

**8.5.9.** This option would involve creating a passing loop (a double section of track) between the points shown in **Figure 8.9.** The total length of the loop would be 896m. A permanent compact principal supply point compound and new distribution network operator connection midway along the proposed loop would be required. Some permanent land take would be required, subject to further design. The access road would be improved for the construction compound. The proposed loop requires additional signals, the positions of which have been assessed by Network Rail and are all within its current land boundary.

## **Figure 8.9** Proposed passing loop




KEY:

- EXISTING RAIL ROUTE
- TEMPORARY CONSTRUCTION COMPOUND
- PERMANENT WORKS
- NETWORK RAIL BOUNDARY
- SITE BOUNDARY

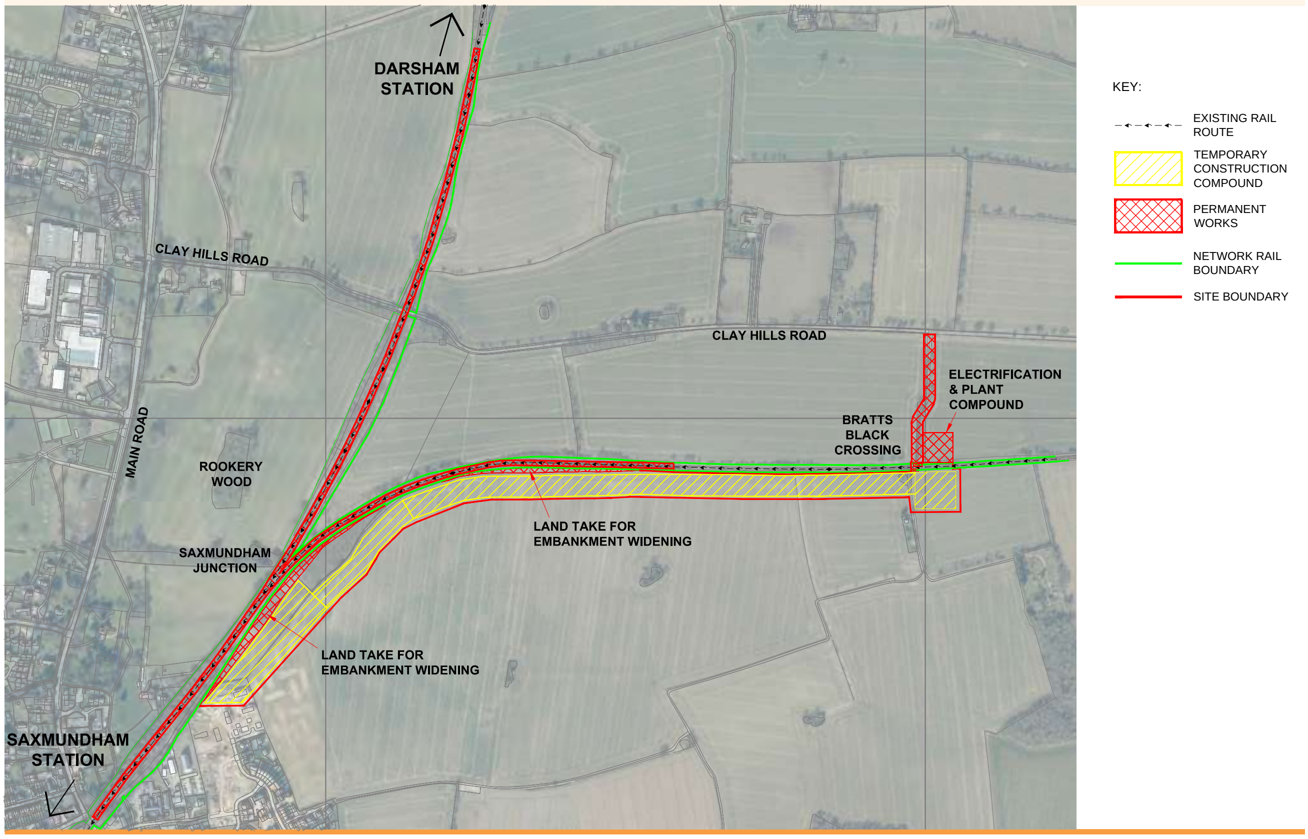
## b) Saxmundham crossover

**8.5.10.** The Network Rail feasibility study confirmed that the current junction of the East Suffolk line with the Saxmundham to Leiston branch line does not have the necessary capacity to allow the operation of five freight trains per day. The current arrangements require freight trains to stop three times at the junction (in either direction). Options to improve the junction have been assessed by Network Rail. EDF Energy's preferred option on which it is consulting in this Stage 3 consultation is a junction within the area shown in **Figure 8.10.**

**8.5.11.** The proposed layout would achieve all of the operational requirements necessary for the project. It would increase capacity and operational flexibility of rail deliveries between the East Suffolk line and the main construction area. It would also allow freight trains to pass at the Saxmundham junction with neither of the trains blocking the Albion Street level crossing. If an inbound freight train were to be detained at the revised Saxmundham junction, it could be routed onto the new double track section of the line clear of the mainline. This creates a buffer zone between the Saxmundham to Leiston branch line and the East Suffolk line so that delays on one are less likely to affect the other.

**8.5.12.** Although the proposed track would be positioned entirely within Network Rail's land, significant earthworks on both lines would be necessary and would require land to be acquired as shown in **Figure 8.10.**

### Figure 8.10 Proposed junction at the Saxmundham crossover



### c) Signalling

**8.5.13.** The Network Rail feasibility study has identified that the proposed passing loop would require eight signals, two point operating equipment units and one signalling lock out. An interlocking data change and screen data change would also be required at the Saxmundham Signal Box. The Saxmundham crossover and proposed changes to level crossings would also require a number of new signalling assets.

### d) Level crossings

**8.5.14.** The Network Rail feasibility study found that in order to ensure a viable timetable is maintained for the passenger service using this line, freight trains would need to operate at 40mph rather than the 20mph at which freight trains using this line are currently authorised to operate (speed restrictions for passenger trains would not be impacted). The impact of this speed increase for freight trains, together with an increase in the frequency of freight trains using the line, would be to raise the risk categorisation of 47 level crossings along the route from Ipswich to the Saxmundham junction. As a result of the increased risk categorisation, it is proposed either to upgrade or close 45 level crossings along this route.

**8.5.15.** **Chapter 9** of this volume sets out EDF Energy's proposals with regard to each of the relevant level crossings, identifying where additional land is proposed to be acquired or temporarily used in accordance with powers to be sought in the application for development consent, and where any rights of way are proposed to be stopped up or diverted by the development consent order.

### e) Bridge strengthening

**8.5.16.** The Network Rail feasibility study also identified six bridges on the East Suffolk line which would potentially require strengthening in order to accommodate up to five freight trains per day used by EDF Energy. These bridges are located at Bramford Road (B1067), Norwich Road, River Flynn Viaduct, two on the River Debden (Ufford), and Abbey Bridge. Further survey work is required to determine whether any works would be required.

## 8.6. Upgrades to the Saxmundham to Leiston branch line (rail-led strategy)

**8.6.1.** In our Stage 2 consultation, we explained that the branch line between Saxmundham and Leiston might require a significant upgrade to be in a condition to handle the freight trains required for the project, and that it might be necessary to modify some level crossings. The details of the required works have been studied in further detail in Network Rail's feasibility study, and are described below.

### a) Track repairs or replacement

**8.6.2.** The Network Rail feasibility study assessed the condition of the track on the Saxmundham to Leiston branch line. It was found that the overall condition was inadequate for use by freight trains proposed by EDF Energy. The report identified three options for upgrading the track:

- Option 1: Renewal of the entire track on the branch using new ballast, flat bottom continuously welded rail on concrete sleepers;
- Option 2: Condition based track renewal of components only, including re-sleepering and re-railing based on-site inspection; and
- Option 3: A mixture of Options 1 and 2. Full track renewal where the ballast is in poor condition, but where ballast is in good condition, component refurbishment (spot re-sleepering etc.) would be used.

**8.6.3.** Option 2 has the lowest initial cost but potentially the highest cost of maintenance as fault frequency is likely to be high. Option 2 would not be a robust operational solution and therefore EDF Energy has discounted Option 2. EDF Energy will continue to consider, with Network Rail's assistance, whether Option 1 or Option 3 is most appropriate in terms of cost, programme and environmental impact. Further work will be undertaken to inform the application for development consent.

### b) Level crossings

**8.6.4.** There are 9 operational level crossings on the Saxmundham to Leiston branch line between the Saxmundham junction and the Sizewell Halt. In order to use the line for freight deliveries upgrades would be required to each of these crossings.

**8.6.5.** **Chapter 9** of this volume sets out EDF Energy's proposals with regard to each of the relevant level crossings, identifying where additional land is proposed to be acquired or temporarily used in accordance with powers to be sought in the development consent order, and where any rights of way are proposed to be stopped up or diverted by the development consent order.

## 8.7. Rail works required for a road-led strategy

### a) Option 1: Sizewell Halt (road-led strategy)

**8.7.1.** If this Option 1 is selected, then works to the Sizewell Halt in a road-led strategy would be the same as the works which would be carried out to the Sizewell Halt for a rail-led strategy.

### b) Option 2: New rail siding on land east of the Eastlands Industrial Estate (road-led strategy)

**8.7.2.** If this Option 2 is selected, then works to construct the new rail siding on the LEEIE in a road-led strategy would be the same as the works which would be carried out for a rail-led strategy.

### c) Upgrades to the East Suffolk line (road-led strategy)

**8.7.3.** If the road-led strategy is adopted, there would only be two freight deliveries (four movements) along the East Suffolk line daily, and those movements would be restricted to night-time (between approximately 23.00 and 06.00 along the East Suffolk line).

**8.7.4.** EDF Energy does not expect it would be necessary to carry out any upgrade works to level crossings along the East Suffolk line if the road-led strategy is pursued.

**8.7.5.** However, Network Rail is carrying out further assessments and it is possible that some of the infrastructure upgrades required under the rail-led strategy may also be required under the road-led strategy.

### d) Upgrades to the Saxmundham to Leiston branch line (road-led strategy)

**8.7.6.** If the road-led strategy is adopted, the track would need to be upgraded or replaced in accordance with one of the options set out in **section 8.6(a).**

**8.7.7.** In order to use the line for freight deliveries the changes to level crossings along the Saxmundham to Leiston branch would be the same as those described in **section 8.6(b)**.

### e) Post-operation (road-led strategy)

**8.7.8.** Following completion of construction of Sizewell C, the following would be removed and the land restored to its previous condition:

- if Option 1 (Sizewell Halt) is progressed, the overhead conveyor at Sizewell Halt (the reconfigured rail head would remain); and
- if Option 2 (new rail siding) is progressed, the rail siding adjacent to the existing branch line on the LEEIE.

**8.7.9.** All of the other rail upgrades and improvements would be retained.

## 8.8. Consenting strategy

**8.8.1.** As explained in **Chapter 1** of this volume, we have yet to decide whether EDF Energy will take forward a rail-led or a road-led strategy in our application for development consent. The rail works required to support each of the strategies are different (see summary in **Table 8.1**). However, to the extent that the works identified in **Table 8.1** form part of our final proposals, consent will be sought for them as part of the application for development consent. Any minor or ancillary works which have not been identified as necessary at the time the application for development consent is made are expected to be carried out under Network Rail's permitted development rights under The Town and Country Planning (General Permitted Development) (England) Order 2015 (Ref. 8.1).

**8.8.2.** In addition, EDF Energy is aware that in order to deliver the works, a number of other consents, licenses and approvals may be required, including:

- level crossing orders;
- network change consent under Part G of the Network Code (23 May 2018) (Ref. 8.2);
- a network licence under section 8 of the Railways Act 1993 (Ref. 8.3) (appointing EDF Energy as the operator of the green rail route) or an exemption from such licensing;
- safety authorisation from the ORR under the Railway and Other Guided Transport (Safety) Regulations 2006 (Ref. 8.4) in respect of the operation of the green rail route; and
- an access agreement under the Railways Act 1993 (Ref. 8.5), authorising EDF Energy to connect the green rail route to the Saxmundham to Leiston branch line.

**8.8.3.** We are considering our strategy for obtaining all of the above consents and will provide further information when the application for development consent is made.

# 9. Level Crossings

## 9.1. Introduction

**9.1.1.** Network Rail has identified that a number of level crossings would need to be closed or upgraded as part of EDF Energy's use of rail in the delivery of freight during the construction of the Sizewell C Project in both the rail-led and road-led strategies.

**9.1.2.** This chapter sets out our proposals with regard to each of the relevant level crossings, identifying where additional land is proposed to be acquired or temporarily used, and where any rights of way are proposed to be stopped up or diverted by the powers provided through the application for development consent.

**9.1.3.** Where proposals for upgrading a level crossing would require works outside of the Network Rail boundary, we have included a figure to show the extent of the proposed works. Each of the figures shows the existing rail route as a black dashed line and the Network Rail boundary is marked by green lines. The construction area required for the proposed works is shown as a solid red boundary with the area for the level crossing works shown hatched in red. Where a temporary construction area is required for the level crossing works, it is shown hatched yellow.

**9.1.4.** Where the proposed works to a level crossing would require diversion of Public Rights of Way (PRoW), we have included a plan that shows the existing route and the proposed route or routes. Existing PRoWs are shown in purple with proposed closure routes shown in light blue. The route of the proposed diversion(s) are shown in orange. In some cases, several options of the route for the diversion of the PRoW have been presented and we would welcome your views on these options.

## 9.2. Types of level crossings

**9.2.1.** Where Network Rail has identified level crossings that require upgrade works, we have described the existing type of level crossing and the type of level crossing that is being proposed at that location. In **Table 9.1** we have listed the various types of level crossings and explained how each would operate.

**Table 9.1** Types of level crossing

| Type of Crossing | Description |
|---|---|
| Automatic barrier crossing locally monitored (ABCL) | Automatic barrier crossing with wig-wags and half barriers locally monitored by train crew or other staff to check if it is working, that is activated by approaching trains. |
| Automatic open crossing locally monitored with barriers (AOCL+B) | Automatic open crossing with wig-wags locally monitored by train crew or other staff to check if it is working, that is activated by approaching trains. |
| Manually controlled barriers with CCTV (MCB-CCTV) | Manually controlled crossing with full barriers and wig-wags operated by a signaller via closed circuit television to check that it clear. |
| Manually controlled barrier with obstacle detection (MCB-OD) | Manually controlled crossing with full barriers and wig-wags operated by a signaller via an obstacle detection system. Light Detection and Ranging (LiDAR) and radar scan the crossing and check it is clear. |
| Miniature stop light (MSL) | A red/green light is located on both sides of the track and operated by approaching trains. The light indicates if it is safe for a pedestrian to cross the railway. |
| Train crew operated crossing (TOG) | The crossing is operated by a member of train crew with the train required to stop short of the crossing to allow the person to close the gates to road traffic. The train may then only proceed over the crossing when the train driver receives the authority from the person operating the gates. |
| Train crew operated barrier with assistance (TOB) | The train is forced to stop short of the crossing and the train crew operate it from a local control unit or plunger. Correct operation of the crossing and permission to pass over it is indicated to the driver by a flashing signal. |
| User worked crossing (UWC) | Manually controlled crossing where the user opens and shuts a gate to the crossing. The user must check that there is no train coming and the exit is clear before crossing. |
| User worked crossing with telephone (UWC+T) | Manually controlled crossing where the user opens and shuts a gate to the crossing. A telephone is provided in order that users can contact the signaller to check if it is safe to cross. |

## 9.3. Level crossing works required for a rail-led strategy

**9.3.1.** Under the rail-led strategy, all trains bringing materials for the construction of Sizewell C, whether serving Sizewell Halt during the early years of construction or using the green rail route following its construction, would travel along the East Suffolk line as far as Saxmundham and then along the branch line towards Leiston.

**9.3.2.** Works would be required to the level crossings on both the East Suffolk line and the Saxmundham to Leiston branch line as part of the rail-led strategy. **Table 9.2** provides details of the level crossings that would be either closed or upgraded along with details of their current daily usage by both pedestrians and cyclists and by trains.

**9.3.3.** We have provided further details below of the crossings that are proposed to be closed along the East Suffolk line and Saxmundham to Leiston branch line under the rail-led strategy, along with information on the proposed diversions of PRoWs.

### a) East Suffolk line

**9.3.4.** The feasibility study carried out by Network Rail since the Stage 2 consultation found that in order to ensure a viable timetable is maintained for the passenger service using the East Suffolk line, freight trains would need to operate at 40 miles per hour (mph) rather than the 20mph at which freight trains using this line are currently authorised to operate. The impact of this speed increase was to raise the risk categorisation of up to 47 level crossings along the route from Ipswich to the Saxmundham junction.

**9.3.5.** EDF Energy has been working with Network Rail and has established that closure or upgrade works are likely to be required to 45 level crossings along the East Suffolk line in view of the higher risk categorisation.

### b) Proposed closures along the East Suffolk line

**9.3.6.** We have provided details below of the crossings that are proposed to be closed along the East Suffolk line under the rail-led strategy, along with information on the proposed diversions of PRoWs.

**9.3.7.** Where crossings are proposed to be closed, it is expected that the associated works to remove the crossing infrastructure can be undertaken within the boundary of land under the control of Network Rail. Welfare facilities to support construction workers would be located at the primary construction compounds at Westerfield Station, the passing loop primary compound and the Saxmundham crossover primary compound.

**Table 9.2** Level crossing usage and proposed closures and upgrades

| Crossing ID | Crossing Name | Crossing Type | Trains per day | Usage per day | Proposed Change |
|---|---|---|---|---|---|
| SWC01 | Westerfield Footpath | Footpath | 133 | 7 Pedestrians or Cyclists | Closure and diversion |
| SWC02 | Westerfield Station AHB | AHB | 133 | 118 Vehicles, 54 Pedestrians or Cyclists | Upgrade to MCB-CCTV |
| SWC03 | Lacy's Footpath | Footpath | 35 | 5 Pedestrians or Cyclists | Closure and diversion |
| SWC04 | Stennetts 1 | Footpath | 35 | Less than 5 Pedestrians or Cyclists | Closure and diversion |
| SWC05 | Stennetts 2 | Footpath | 35 | Less than 5 Pedestrians or Cyclists | Closure and diversion |
| SWC06 | Gamekeepers | Footpath | 35 | Less than 5 Pedestrians or Cyclists | Closure and diversion |
| SWC07 | Lox Farm | Footpath | 35 | 9 Pedestrians or Cyclists | Upgrade to MSL |
| SWC08 | Bealings | ABCL | 35 | 99 Vehicles, 81 Pedestrians or Cyclists | Upgrade to MCB-OD |

| | | | | | |
|---|---|---|---|---|---|
| SWC09 | Martlesham | Footpath | 37 | 7 Pedestrians or Cyclists | Closure and diversion |
| SWC10 | Notcutts Nursery | Footpath | 34 | Private unused crossing | Upgrade to MSL |
| SWC11 | Kingston Farm | Footpath | 35 | 4 Pedestrians or Cyclists | Upgrade to MSL |
| SWC12 | Kingston Farm | UWC | 35 | Vehicles 226 Pedestrians or Cyclists | Upgrade to MSL |
| SWC13 | Jetty Avenue | Footpath | 35 | 219 Pedestrians or Cyclists | Upgrade to MSL |
| SWC14 | Jetty Avenue | UWC | 35 | 9 Vehicles, 98 Pedestrians or Cyclists | Upgrade to MSL |
| SWC15 | Ferry Quay | AOCL+B | 35 | 62 Vehicles, 216 Pedestrians or Cyclists | Upgrade to MCB-OD |
| SWC16 | Haywards/Tide Mill Way | AOCL+B | 35 | 78 Vehicles, 297 Pedestrians or Cyclists | Upgrade to MCB-OD |
| SWC17 | Lime Kiln Quay | AOCL+B | 35 | 32 Vehicles, 211 Pedestrians or Cyclists | Upgrade to MCB-OD |
| SWC18 | Sun Wharf | AOCL+B | 35 | 7 Vehicles, 199 Pedestrians or Cyclists | Upgrade to MCB-OD |
| SWC19 | Maltings | UWC | 35 | 6 Vehicles, 36 Pedestrians or Cyclists | Upgrade to MSL |
| SWC20 | Melton Sewage | UWC | 35 | 1 Vehicle, 7 Pedestrians or Cyclists | Upgrade to MSL |
| SWC21 | Dock Lane | Footpath | 35 | 87 Pedestrians or Cyclists | Upgrade to MSL |
| SWC22 | Dock Lane | UWC | 35 | 0 Vehicles, 16 Pedestrians or Cyclists | Upgrade to MSL |
| SWC23 | Bloss | UWC | 35 | 0 Vehicles, Infrequent Pedestrian use | Upgrade to MSL |
| SWC24 | Melton Station | AOCL+B | 35 | 561 Vehicles, 339 Pedestrians or Cyclists | Upgrade to MCB-OD |
| SWC25 | Ellingers | Footpath | 35 | 7 Pedestrians or Cyclists | Upgrade to MSL |
| SWC26 | Ellingers | UWC | 35 | 0 Vehicles, 3 Pedestrians or Cyclists | Upgrade to MSL |
| SWC27 | Melton Bromswell | Footpath | 34 | 6 Pedestrians or Cyclists | Closure and diversion |
| SWC28 | Ufford | ABCL | 35 | 94 Vehicles, Infrequent Pedestrian use | Upgrade to MCB-OD/CCTV |
| SWC29 | Uffold | UWC | 35 | Infrequent vehicular use, Infrequent Pedestrian use | Upgrade to MSL |
| SWC30 | Pettistree | Footpath | 35 | Less than 5 Pedestrians or Cyclists | Closure and diversion |
| SWC31 | Orchard | Footpath | 35 | Less than 5 Pedestrians or Cyclists | Closure and diversion |
| SWC32 | Wickham Market | Footpath | 35 | Less than 5 Pedestrians or Cyclists | Closure and diversion |
| SWC33 | Blackstock | Footpath | 35 | Infrequent Pedestrian use | Upgrade to MSL |
| SWC34 | Blackstock | UWC | 35 | Unspecified | Upgrade to MSL |
| SWC35 | Red House Farm | UWC | 34 | Unspecified | Upgrade to MSL |
| SWC36 | Blaxhall | AOCL+B | 35 | 6 Vehicles, 15 Pedestrians or Cyclists | Upgrade to MCB-OD |
| SWC37 | Blaxhall | Footpath | 34 | 8 Pedestrians or Cyclists | Closure and diversion |
| SWC38 | Beversham | ABCL | 35 | 24 Vehicles, 14 Pedestrians or Cyclists | Upgrade to MCB-OD |
| SWC39 | Snape | Footpath | 35 | Infrequent Pedestrian use | Upgrade to MSL |
| SWC40 | Snape | UWC | 35 | 3 Vehicles, 17 Pedestrians or Cyclists | Upgrade to MSL |
| SWC41 | Farnham | Footpath | 35 | Less than 5 Pedestrians or Cyclists | Upgrade to MSL |
| SWC42 | Benhall/Grays Lane | Footpath | 32 | Unspecified | Upgrade to bridleway with MSL |
| SWC43 | Brick Kiln | Footpath | 34 | 10 Pedestrians or Cyclists | Upgrade to MSL |
| SWC44 | Brick Kiln | UWC | 35 | 10 Vehicles, 243 Pedestrians or Cyclists | Upgrade to MSL |
| SWC47 | Saxmundham | Footpath | 33 | Less than 5 Pedestrians or Cyclists | Closure and diversion |

[1] Train count at the time of the most recent survey for this crossing
[2] Based on recent census data

## Westerfield Footpath

**Figure 9.1** Current Westfield footpath level crossing (ID SWC01)


**9.3.8.** Westerfield Footpath Level Crossing (ID SWC01) is a footpath crossing located on Footpath No.18 (E-014/018/0). It is shown in **Figure 9.1**. It is accessed from a higher elevation via a stile and steps down leading straight onto the track on either side of the track. Census information from 2016 (Ref. 9.1) shows an average daily usage of seven pedestrians. There are plans for two new residential developments on both sides of the crossing which would be expected to increase the usage.

**9.3.9.** There are three options for diverting Footpath No.18. In each of the diversion options, the new proposed PRoW would cross third party land.

## Diversion Option 1

**9.3.10.** As shown in **Figure 9.2,** users of Footpath No.18 approaching from the south would be diverted along Network Rail land to reach Westerfield Station. From the station, users would use the existing pavements to continue in a northern direction until they reach a private track on the left. Users would then use this private track to link back to their original route.

## Diversion Option 2

**9.3.11.** As shown on **Figure 9.3,** users of Footpath No.18 approaching from the south would be diverted along Network Rail land to reach Westerfield Station. From the station, users would use the existing pavements to continue north over the level crossing and then turn left onto a new proposed footpath adjacent to the railway boundary. Once beyond the back gardens of properties to the north, the footpath would link back to the original route over Network Rail land.

## Diversion Option 3

**9.3.12.** As shown on **Figure 9.4,** users of Footpath No.18 approaching from the south would be diverted along the field boundary before being diverted onto Network Rail land to reach Westerfield Road. From the road, pedestrians would use the existing pavements to continue in a northern direction until they reach a private track on the left. Users would then use this private track to link back to their original route.

**Figure 9.2** Westerfield footpath level crossing diversion Option 1


**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.3** Westerfield footpath level crossing diversion Option 2


**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.4** Westerfield footpath level crossing diversion Option 3


**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## Lacy's Footpath

**Figure 9.5** Current Lacy's footpath level crossing (ID SWC03)

**9.3.13.** Lacy's Footpath Level Crossing (ID SWC03) is a footpath crossing located on Footpath No.15A (E-456/009/0). It is shown in **Figure 9.5**. It is accessed from a high elevation via a stile and steps on both sides of the track. Census information from 2016 (Ref. 9.2) shows an average daily usage of five pedestrians.

**9.3.14.** As shown on **Figure 9.6,** users of Footpath No.15A approaching from the south would be diverted to the west along a new field boundary footpath. This would connect with an existing public bridleway to the west which crosses the railway via an over bridge. From here, users would continue along the bridleway to the north to the point that Footpath No.15A joins the bridleway. The new proposed PRoW would cross some third party land.

**Figure 9.6** Lacy's footpath level crossing diversion route


KEY

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M

PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)

- FOOTPATH
- BRIDLEWAY

## Stennetts 1

**Figure 9.7** Current Stennetts 1 level crossing (ID SWC04)


**9.3.15.** Stennetts 1 Level Crossing (ID SWC04) is a footpath crossing located on Footpath No. 17 (E-456/012/0). It is shown in **Figure 9.7**. It is accessed from a gate either side of the track that leads straight onto the track. Census information from 2016 (Ref. 9.3) shows an average daily usage of less than five pedestrians.

**9.3.16.** As shown on **Figure 9.8,** users of Footpath No.17 approaching from the south would be diverted along an existing public footpath to an under bridge where they can pass under the railway and use an existing public footpath on the northern side of the railway to connect back to Footpath No.17. The new proposed PRoW would cross third party land.

**Figure 9.8** Stennetts 1 level crossing diversion route


KEY

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH
- BRIDLEWAY

## Stennetts 2

**Figure 9.9** Current Stennetts 2 level crossing (ID SWC05)

**9.3.17.** Stennetts 2 Level Crossing (ID SWC05) is a footpath crossing located on Footpath No.13 (E-431/013/0). It is shown in **Figure 9.9**. It is accessed via a stile either side of the track that leads straight on to the track. Census information from 2016 (Ref. 9.4) shows an average daily usage of less than five pedestrians.

**9.3.18.** There are three options for diverting Footpath No.13. In each of the diversion options, the new proposed PRoW would cross third party land.

### Diversion Option 1

**9.3.19.** As shown on **Figure 9.10,** users of Footpath No.13 approaching from the south would be diverted via a field edge footpath through the woods and to a road over bridge. Users would walk over the bridge and then along the road verge to re-join Footpath No.13.

### Diversion Option 2

**9.3.20.** As shown on **Figure 9.11,** users of Footpath No.13 approaching from the south would be diverted via a field edge footpath around the woods to the south and back to a road over bridge. Users would walk over the bridge and then along the road verge to re-join Footpath No.13.

### Diversion Option 3

**9.3.21.** As shown on **Figure 9.12,** users of Footpath No.13 approaching from the south would utilise a new footpath created adjacent to an existing farm access track heading in a westerly direction. Users would cross Butt's Road and continue on a new footpath adjacent to an existing farm track up to the byway that runs south to north. At this point, users would utilise the byway to cross the railway (via the over bridge) and northward to Playford.

**Figure 9.10** Stennetts 2 level crossing diversion Option 1

## **Figure 9.11** Stennetts 2 level crossing diversion Option 2


KEY

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH
- BRIDLEWAY

## **Figure 9.12** Stennetts 2 level crossing diversion Option 3


KEY

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH
- BRIDLEWAY

## Gamekeepers

**Figure 9.13** Current Gamekeepers level crossing (ID SWC06)

**9.3.22.** Gamekeepers Level Crossing (ID SWC06) is a footpath crossing located on Footpath No.9 (E-431/009/0). It is shown in **Figure 9.13**. It is accessed from the south through a gate that leads straight to the railway track. From the north, it is accessed from a low elevation via a stile with steps leading straight up to the railway track. Estimated census data from 2014 predicted an average daily usage of less than five pedestrians.

**9.3.23.** As shown on **Figure 9.14,** users of Footpath No.9 travelling in a westerly direction from the street would be diverted onto Footpath No. 13 (E-431/013/0) and continue in an easterly directly. The route would continue along a new route to the south of the track and then join the road. The diversion would then cross the track and continue north along the road where it meets the footpath again. The new proposed PRoW would cross third party land.

**Figure 9.14** Gamekeepers level crossing diversion route


**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M

PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)

- FOOTPATH

## Martlesham

**Figure 9.15** Current Martlesham level crossing (ID SWC09)

**9.3.24.** Martlesham Level Crossing (ID SWC09) is a footpath crossing located on Footpath No.9 (E-388/009/0). It is shown in **Figure 9.15**. It is accessed from a low elevation via stiles and steps on either side of the track that lead straight onto the track. Estimated census data from 2014 predicted an average daily usage of seven pedestrians.

**9.3.25.** There are two options for diverting Footpath No.9. In each of the diversion options, the new proposed PRoW would cross third party land.

### Diversion Option 1

**9.3.26.** As shown on **Figure 9.16,** users of Footpath No.9 approaching in a westerly direction would be diverted around the western edge of the field and pass under the railway and join up with public footpath before passing under the A12. From here, users would travel east to meet the point where Footpath No.9 meets the public footpath on the north side of the railway.

### Diversion Option 2

**9.3.27.** As shown on **Figure 9.17,** users of Footpath No.9 approaching in a westerly direction would be diverted around the northern edge of the field and pass under the railway and join up with public footpath before passing under the A12. From here, users would travel east to meet the point where Footpath No.9 meets the public footpath that runs to the north of the railway.

**Figure 9.16** Martlesham level crossing diversion Option 1


KEY
- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.17** Martlesham level crossing diversion Option 2


**KEY**

- ● LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## Melton Bromswell

### **Figure 9.18** Current Melton Bromswell level crossing (ID SWC27)

**9.3.28.** Melton Bromswell Level Crossing (ID SWC27) is a footpath crossing located on Footpath No.5A (E-166/005/A). It is shown in **Figure 9.18**. It is accessed via stiles on both sides of the track that lead straight to the track. Census data from 2015 (Ref. 9.5) shows an average daily usage of 17 pedestrians.

**9.3.29.** There are five options for diverting Footpath No.5A. In each of the diversion options, the new proposed PRoW would cross third party land.

## Diversion Option 1

**9.3.30.** As shown on **Figure 9.19,** users would be diverted along the southern railway boundary to use the crossing to the north.

## Diversion Option 2

**9.3.31.** As shown on **Figure 9.20,** users would be diverted along the railway boundary to use the river underbridge to pass under the railway and then return along the railway boundary.

## Diversion Option 3

**9.3.32.** As shown on **Figure 9.21,** users would use a new link that links up a truncated PRoW to the south-west of the level crossing, linking Melton with Bromswell. Also on the northwestern side of the level crossing, it is intended to provide a new link between Ufford and Melton.

## Diversion Option 4

**9.3.33.** As shown at **Figure 9.22,** users would utilise a new link from Summer Lane Farm running in a northern direction, once the new path reaches the railway it would follow the boundary until reaching the active level crossing.

## Diversion Option 5

**9.3.34.** As shown on **Figure 9.23,** users would utilise a new link from Summer Lane Farm running in a northern direction. Once the new path reaches the railway it would follow the boundary until reaching the active level crossing.

**9.3.35.** An additional diversion to the north of the railway line would create a circular walk in the field directly north of the crossing. This would join Footpath No. 12 (E-534/012/0) at the top and the bottom of the field.

## **Figure 9.19** Melton Bromswell level crossing diversion Option 1


**KEY**

- ● LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.20** Melton Bromswell level crossing diversion Option 2


**KEY**

- ● LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.21** Melton Bromswell level crossing diversion Option 3


**KEY**

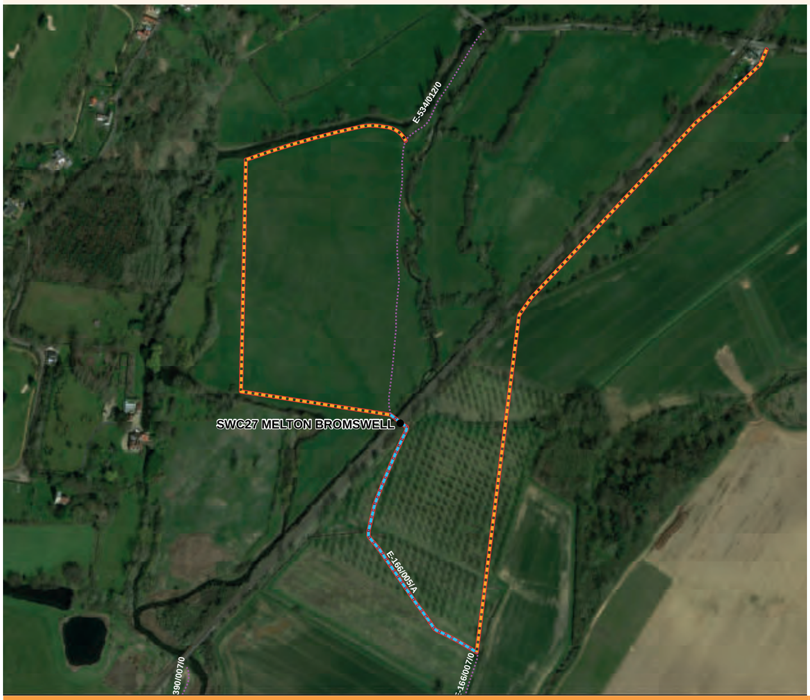
- ● LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.22** Melton Bromswell level crossing diversion Option 4


**KEY**

- ● LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.23** Melton Bromswell level crossing diversion Option 5




**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## Pettistree

**Figure 9.24** Current Pettistree level crossing (ID SWC30)


**9.3.36.** Pettistree level crossing (ID SWC30) is a footpath crossing located on Footpath No.8 (E-430/008/0). It is shown in **Figure 9.24**. It is accessed via stiles leading over uneven ground onto the track. Census data from 2015 (Ref. 9.6) shows an average daily usage of less than five pedestrians.

**9.3.37.** There are two options for diverting Footpath No.8. In each of the diversion options, the new proposed PRoW would cross third party land.

### Diversion Option 1

**9.3.38.** As shown on **Figure 9.25,** users of Footpath No.8 would be diverted to an underbridge to the south of the existing level crossing as the means of crossing the railway. Users would re-join Footpath No.8 before crossing a watercourse. Existing farm tracks and field boundary would be used as the footpath diversion.

### Diversion Option 2

**9.3.39.** As shown on **Figure 9.26,** users of Footpath No.8 would be diverted to an existing underbridge to the north of the existing level crossing as the means of crossing the railway. Once through the underbridge, users would continue south to meet the existing Footpath No.8. The new route would utilise existing farm tracks.

**Figure 9.25** Pettistree level crossing diversion Option 1


KEY

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## **Figure 9.26** Pettistree level crossing diversion Option 2


**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## Orchard

**Figure 9.27** Current Orchard level crossing (ID SWC31)

**9.3.40.** Orchard level crossing (ID SWC31) is a footpath crossing located on Footpath No.8/15 (E-178/008/0 and E-178/015/0). It is shown in **Figure 9.27**. It is accessed via stiles leading over uneven ground onto the track. Census data from 2015 (Ref. 9.7) shows an average daily usage of less than five pedestrians.

**9.3.41.** As shown on **Figure 9.28,** users of Footpath No.8/15 would be diverted to the south to utilise the road underbridge as the means of crossing the railway. From this point, users can utilise the existing bridleway to re-join Footpath 8/15. The proposed PRoW would cross third party land.

**Figure 9.28** Orchard level crossing diversion route


**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M

PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)

- FOOTPATH
- BRIDLEWAY

## Wickham Market

**Figure 9.29** Current Wickham Market level crossing (ID SWC32)


**9.3.42.** Wickham Market level crossing (ID SWC32) is a footpath crossing located on Footpath No.20/22 (E-178/020/0 and E-178/022/0). It is shown in **Figure 9.29**. It is accessed via stiles leading over uneven ground onto the track. Estimated census data from 2015 predicted an average daily usage of less than five pedestrians.

**9.3.43.** There are two options for diverting Footpath No.20/22.

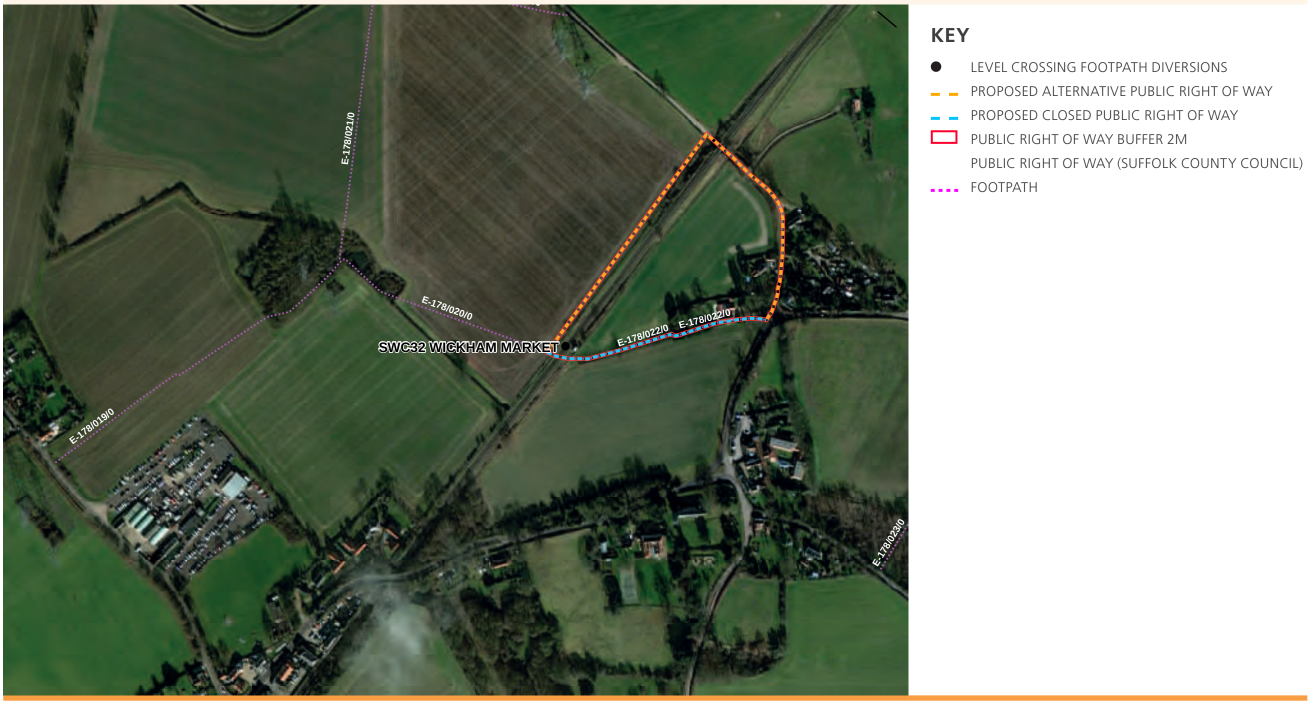
### Diversion Option 1

**9.3.44.** As shown on **Figure 9.30,** users of Footpath 20/22 travelling in an easterly direction would be diverted to an existing underbridge to the north-east of the existing level crossing as the means of crossing the railway. Once through the underbridge, users would utilise on road walking to reach the same point as Footpath 20/22.

### Diversion Option 2

**9.3.45.** As shown on **Figure 9.31,** users travelling in a westerly direction would be diverted to the south-west to utilise the over bridge to the south as the means of crossing the railway. This option would involve some on road walking before reaching pavements. The proposed PRoW would cross third party land.

**Figure 9.30** Wickham Market level crossing diversion Option 1



## **Figure 9.31** Wickham Market level crossing diversion Option 2


**KEY**

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH

## Blaxhall 2

### **Figure 9.32** Current Blaxhall 2 level crossing (ID SWC37)

**9.3.46.** Blaxhall 2 level crossing (ID SWC37) is a footpath crossing located on Footpath No.37 (E-141/037/0). It is shown in **Figure 9.32**. It is accessed via stiles leading over uneven ground onto the track. Census data shows an average daily usage of eight pedestrians and cyclists (Ref. 9.8).

**9.3.47.** There are two options for diverting Footpath No.37.

### Diversion Option 1

**9.3.48.** As shown on **Figure 9.33,** this option involves closing Footpath No.37 and diverting users to the parallel Footpath No.6 to the east. Footpath No.6 crosses the railway at the active level crossing to the east (Beversham ABCL). Once over the railway, users would then utilise a new link path to Footpath No.37.

### Diversion Option 2

**9.3.49.** As shown on **Figure 3.34,** this option involves diverting users to the automatic road level crossing to the east. Users of Footpath No.37 travelling in a northerly direction would utilise a new link to the Beversham ACBL to the east to cross the railway. Once over the railway, users would then utilise a new link to the west to connect with the existing Footpath No.37. The proposed PRoW would cross third party land.

## **Figure 9.33** Blaxhall 2 level crossing diversion Option 1


KEY

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH
- BRIDLEWAY
- RESTRICTED BYWAY

## **Figure 9.34** Blaxhall 2 level crossing diversion Option 2


KEY

- LEVEL CROSSING FOOTPATH DIVERSIONS
- PROPOSED ALTERNATIVE PUBLIC RIGHT OF WAY
- PROPOSED CLOSED PUBLIC RIGHT OF WAY
- PUBLIC RIGHT OF WAY BUFFER 2M
- PUBLIC RIGHT OF WAY (SUFFOLK COUNTY COUNCIL)
- FOOTPATH
- BRIDLEWAY
- RESTRICTED BYWAY

## Saxmundham

**Figure 9.35** Current Saxmundham level crossing (ID SWC47)

**9.3.50.** Saxmundham level crossing (ID SWC47) is a footpath crossing located on Footpath No.1 (E-460/001/0). It is shown in **Figure 9.35**. It is accessed from a level elevation via a stile leading onto the track. Census data from 2015 predicted an average daily usage of less than five pedestrians (Ref. 9.9).

**9.3.51.** As shown on **Figure 9.36,** the proposal is to close this crossing and divert users along the field boundary heading north up to the road bridge. Users would then walk on the carriageway (Clayhills Road) to cross the railway and then walk on the verge to the point at which Footpath No.1 joins the road. The proposed PRoW would cross third party land.

## c) Upgrades along the East Suffolk line

**9.3.52.** We have provided details below of the crossings that would be upgraded along the East Suffolk line under the rail-led strategy, along with further information on the proposed improvement works.

**9.3.53.** For a number of the crossings that would be upgraded, it is anticipated that third party land would be required either during the construction phase or for the siting of new level crossing infrastructure.

**9.3.54.** Where proposals for upgrading a level crossing would require works outside of the Network Rail boundary, we have included a figure to show the extent of the proposed works. Each figure shows the existing rail route as a black dashed line and the Network Rail boundary is marked by green lines. The total construction area required for the proposed works is shown as a solid red boundary with the area for the level crossing works shown hatched in red. Where a temporary construction area is required for the level crossing works it is shown hatched yellow.

**Figure 9.36** Saxmundham level crossing diversion route

## Westerfield Station

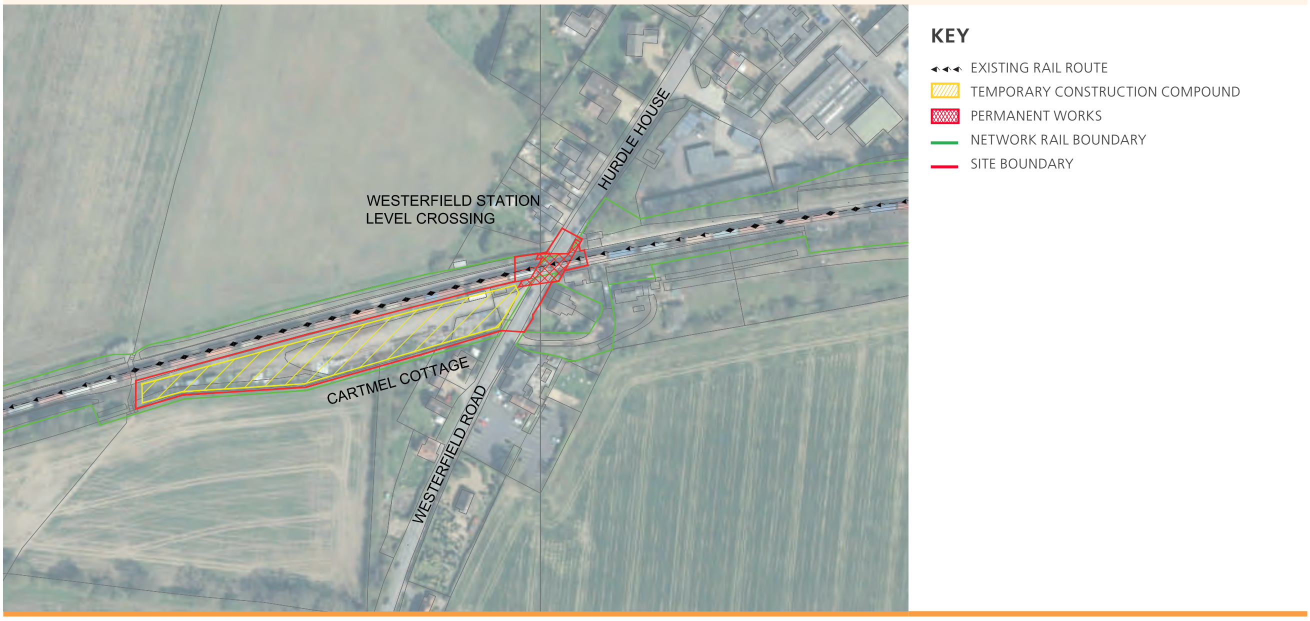
**Figure 9.37** Current Westerfield Station level crossing (ID SWC02)


**9.3.55.** Westerfield Station Level Crossing (ID SWC02) is currently an AHB crossing located approximately 10m to the west of Westerfield Station. It is shown in **Figure 9.37**. As part of the ongoing discussions with Network Rail, the current proposal is to convert this to a MCB-CCTV.

**9.3.56.** Due to the fairly wide carriageway and skew of the crossing, barriers over 6.6m fitted with A-frame supports would need to be used in all four corners of the crossing. The footway on the western side of the crossing would be maintained at 1,500mm. In order for the footway on the eastern (station) side of the crossing to be maintained at 1,500mm, the new barriers would need to be pulled out and rotated slightly from parallel to the running edge, which would also allow continued access to the station. There is sufficient space to accommodate CCTV cameras facing in a northerly direction

**9.3.57.** As shown in **Figure 9.38,** some third party land to the north and south of the existing level crossing would be required in order to install and maintain the new level crossing infrastructure. A temporary construction compound would be located to the south of the railway line on Network Rail land. This temporary construction area would also be utilised as a base for welfare facilities for workers upgrading other level crossings in the vicinity of Westerfield Station.

**Figure 9.38** Westerfield Station level crossing upgrades



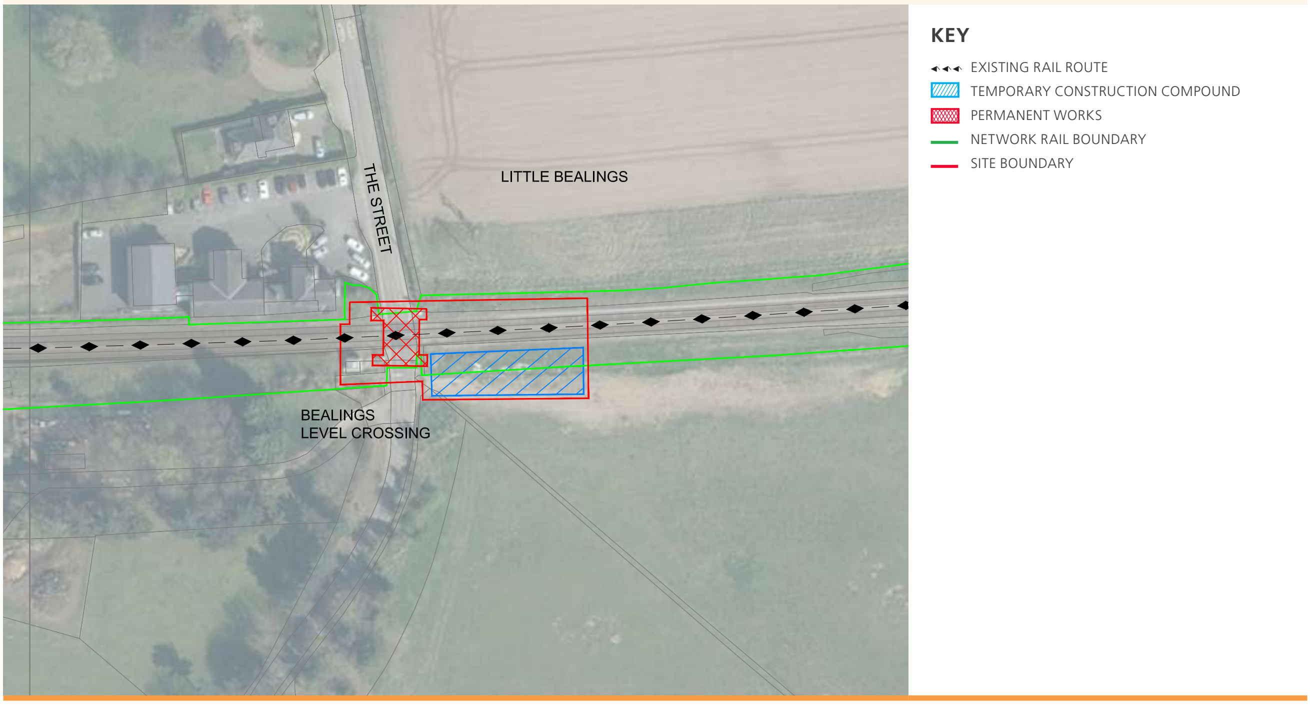
## Bealings

### **Figure 9.39** Current Bealings level crossing (ID SWC08)

**9.3.58.** Bealings Level Crossing (ID SWC08) is an ABCL. It is shown in **Figure 9.39.** As part of the ongoing discussions with Network Rail, the current proposal is to upgrade this level crossing to an MCB-OD.

**9.3.59.** The proposal would involve widening the carriageway to 5.5m to accommodate a centreline and the footways to 1.5m each side. As shown on **Figure 9.40,** there is a relatively sharp curve on the southern approach which would have either countdown sign markers or Vehicle Activated Signs (VAS) to notify the driver of the upcoming crossing. It is expected that the upgrade works could be delivered on Network Rail land.

### **Figure 9.40** Bealings level crossing upgrades



## Ferry Quay

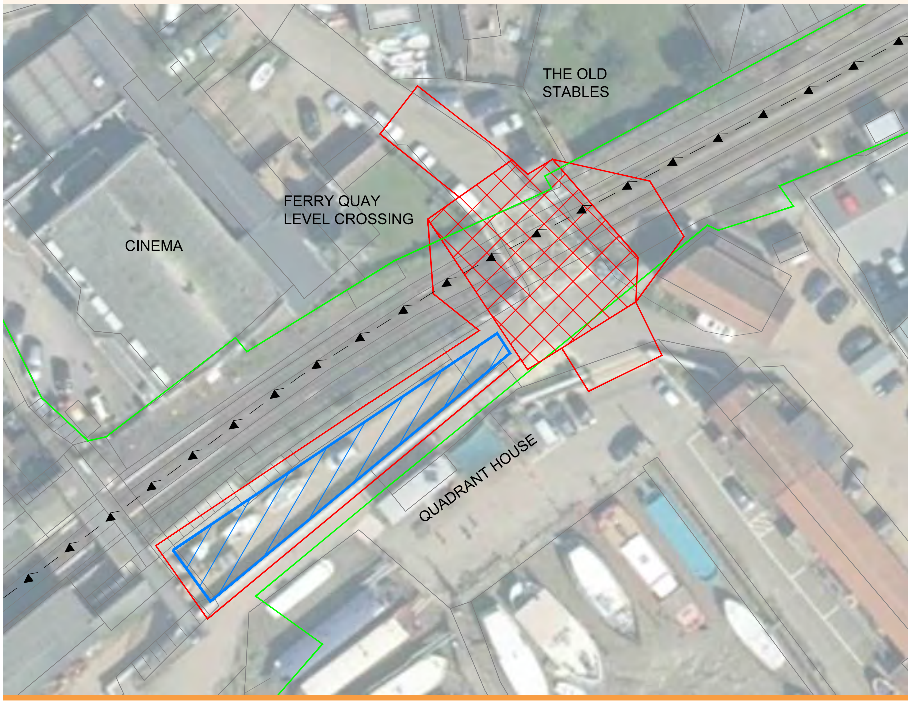
**Figure 9.41** Current Ferry Quay level crossing (ID SWC15)


**9.3.60.** Ferry Quay Level Crossing (ID SWC15) is an ABCL with barriers on both sides of the track. It is shown in **Figure 9.41**. As part of the ongoing discussions with Network Rail, the current proposal is to upgrade this crossing to an MCB-OD.

**9.3.61.** As part of the proposed upgrade works, the road would be gently curved to allow for a 6m wide carriageway and 1.5m footways. This would allow for 3m barrier tip clearance on the exits. A stop line would be moved out to allow access to the side road and an additional flashing light added. A 'keep clear' area and yellow box making should prevent blocking back. Additional kerbing would be added to the corner to guide traffic. There is evidence of cars parking on the exit side of the crossing which may need to be addressed with yellow lines.

**9.3.62.** As shown on **Figure 9.42,** some third party land to the north and south of the existing level crossing would be required in order to install and maintain the new level crossing infrastructure. A temporary construction compound would be located to the south-west of the existing crossing on Network Rail land.

**Figure 9.42** Ferry Quay level crossing upgrades



## Haywards/Tide Mill Way

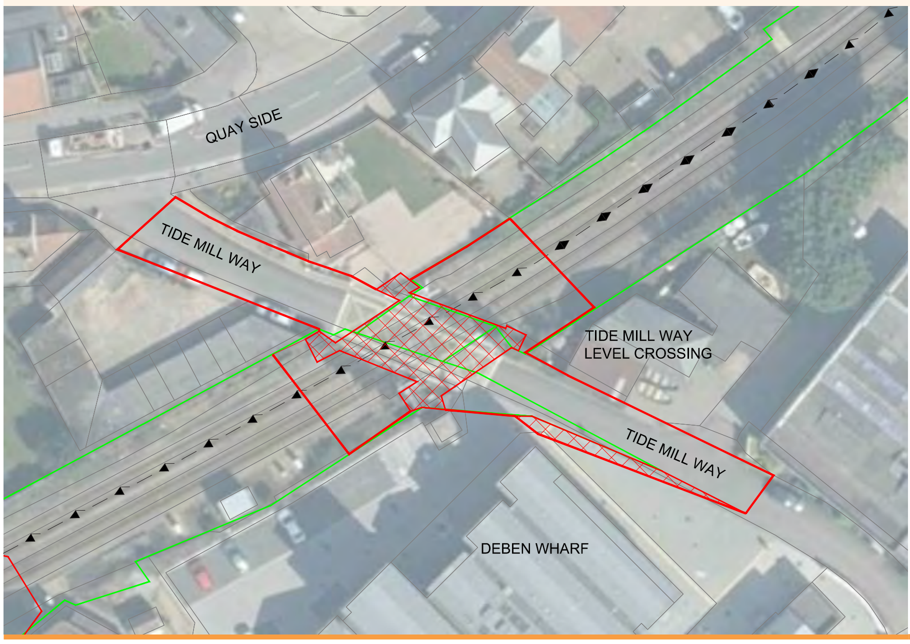
**Figure 9.43** Current Haywards/Tide Mill Way level crossing (ID SWC16)

**9.3.63.** Haywards/Tide Mill Way Level Crossing (ID SWC16) is an AOCL+B on both sides of the railway track. It is shown in **Figure 9.43**. As part of the ongoing discussions with Network Rail, the current proposal is to convert this crossing to an MCB-OD.

**9.3.64.** The proposal would involve widening the carriageway to 5.5m to accommodate a centreline and the footways to 1.5m each side.

**9.3.65.** As shown on **Figure 9.44,** some third party land will be required to the north-east and south-east of the existing level crossing in order to accommodate the new level crossing infrastructure. There is no proposal for a temporary construction compound at the crossing with welfare facilities to be located at the primary construction compound at the passing loop primary compound.

**Figure 9.44** Haywards/Tide Mill Way level crossing upgrades




KEY
EXISTING RAIL ROUTE
PERMANENT WORKS
NETWORK RAIL BOUNDARY
SITE BOUNDARY

## Lime Kiln Quay and Sun Wharf

**Figure 9.45** Current Lime Kiln Quay level crossing (ID SWC17)

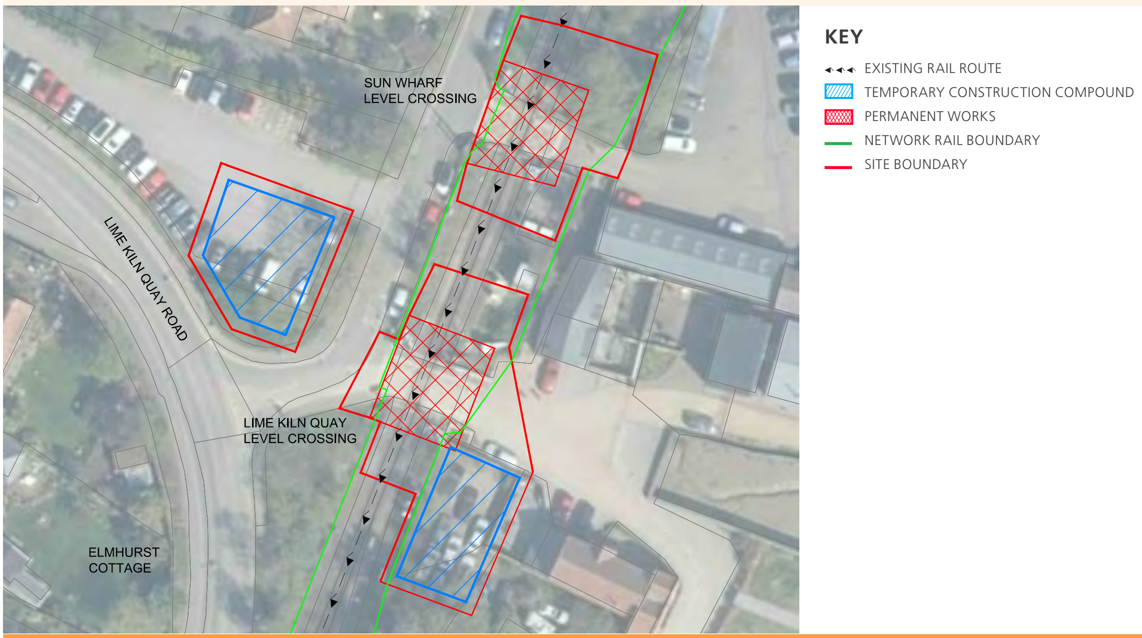
**Figure 9.46** Current Sun Wharf level crossing (ID SWC18)

**9.3.66.** Lime Kiln Quay (ID SWC17) and Sun Wharf (ID SWC18) are ABCLs either side of the railway track. These two level crossings are within close proximity with Lime Kiln Quay located approximately 40m to the south of Sun Wharf and shown in **Figures 9.45** and **9.46.** As part of the ongoing discussions with Network Rail, the current proposal is to convert both crossings to MCB-OD.

**9.3.67.** For both crossings, the proposal would involve widening the carriageway to 5.5m to accommodate a centreline and the footways to 1.5m each side.

**9.3.68.** As shown on **Figure 9.47,** some third party land to the west of the existing Sun Wharf crossing and the east and west of the existing Lime Kiln Quay crossing would be required to install and maintain the new level crossing infrastructure. Temporary construction compounds would be located on third party land to the south-east and west of the crossings.

**Figure 9.47** Lime Kiln Quay and Sun Wharf level crossings upgrades



## Melton Station

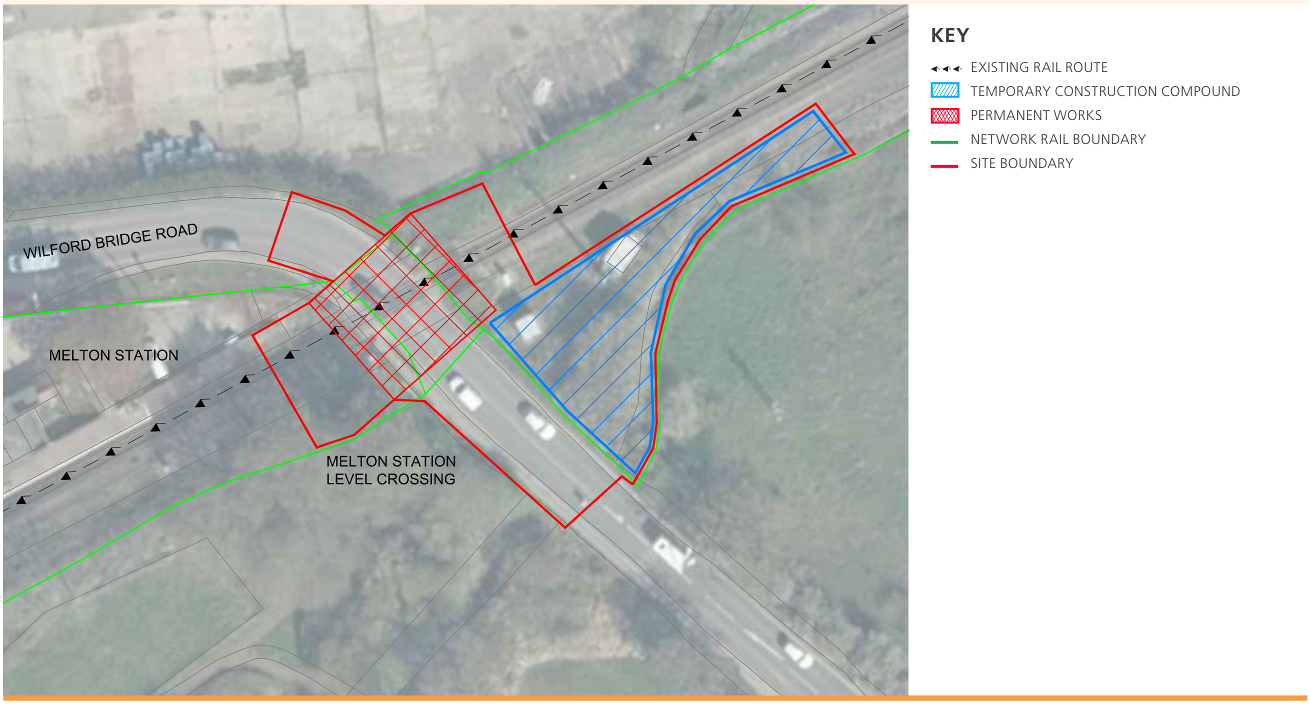
### **Figure 9.48** Current Melton Station crossing (ID SWC24)

**9.3.69.** Melton Station Crossing (ID SWC24) is an AOCL+B on both sides of the track. It is shown in **Figure 9.48**. As part of the ongoing discussions with Network Rail, the current proposal is to convert this crossing to a four barrier MCB-OD.

**9.3.70.** The proposal would involve retaining the width of the carriageway with the footways designed to 1.5m wide each side.

**9.3.71.** As shown on **Figure 9.49,** a small area of third party land to the north of the existing level crossing would be required to install and maintain the new level crossing infrastructure. There is no proposal for a temporary construction compound at the crossing with welfare facilities to be located at the primary construction compound at the passing loop primary compound.

### **Figure 9.49** Melton Station crossing upgrades



## Ufford

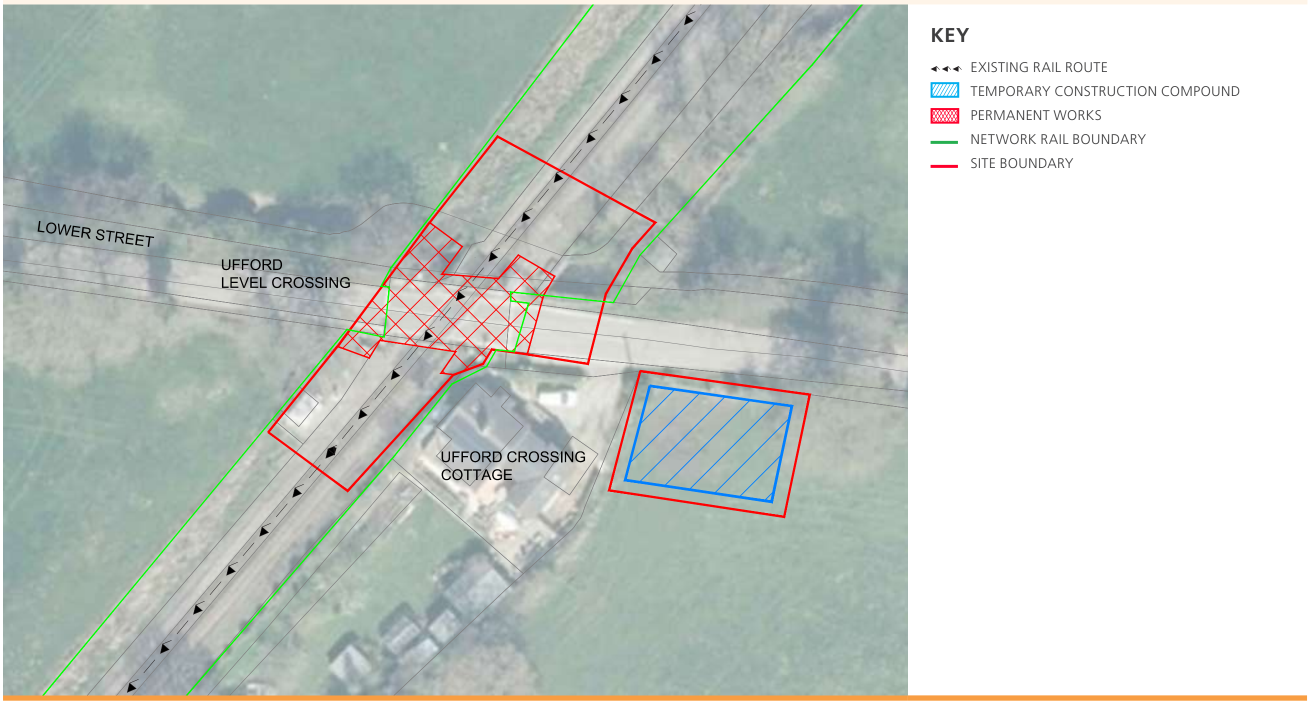
Figure 9.50 Current Ufford level crossing (ID SWC28)

**9.3.72.** Ufford Level Crossing (ID SWC28) is an ABCL located on Lower Street between Wickham Market and Melton Stations. It is shown in **Figure 9.50**. As part of the ongoing discussions with Network Rail, the current proposal is to convert this crossing to four barrier MCB-OD.

**9.3.73.** The proposal would involve retaining the width of the carriageway at 5m but for an extended distance of 22m on each approach to accommodate large vehicles exiting the crossing. The River Deben flows under the crossing. A staging area would be built to accommodate a barrier machine with maintenance access.

**9.3.74.** As shown on **Figure 9.51,** some third party land to the east and west of the existing level crossing would be required to install and maintain the new level crossing infrastructure. An area of land to the south-east would be required for a temporary construction compound.

Figure 9.51 Ufford level crossing upgrades



## Blaxhall 1

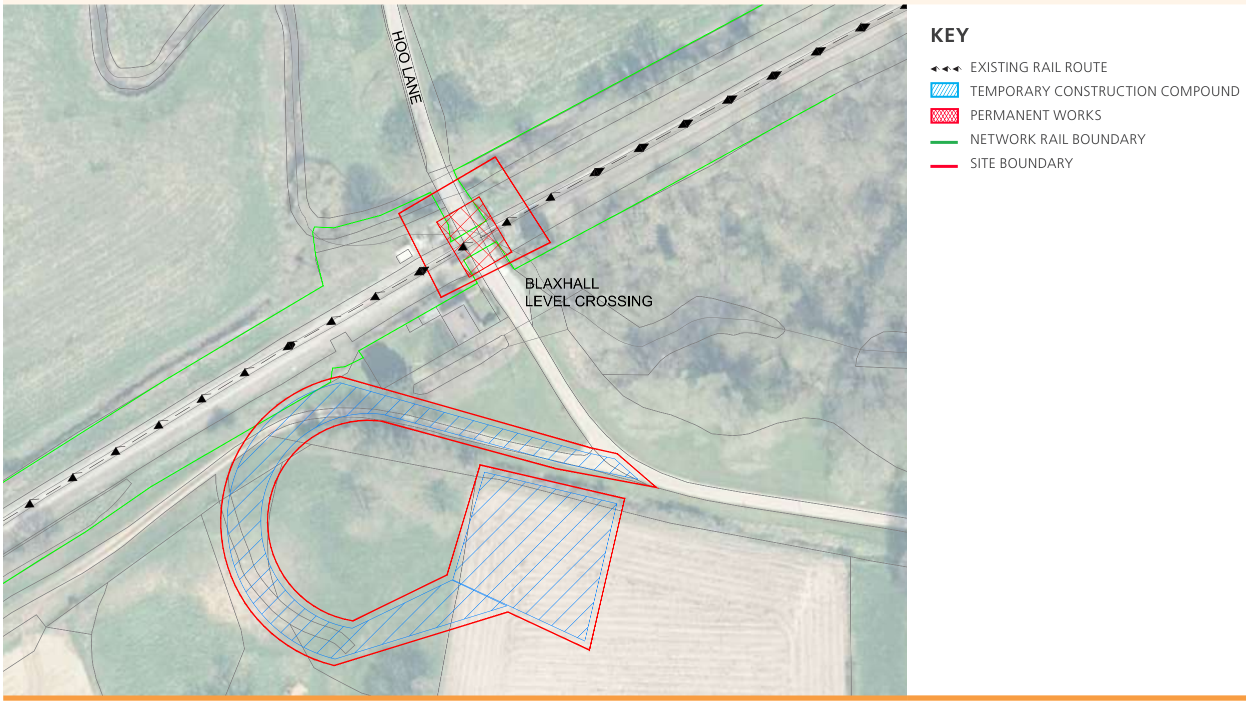
**Figure 9.52** Current Blaxhall 1 level crossing (ID SWC36)

**9.3.75.** Blaxhall level crossing (ID SWC36) is an ABCL located between Saxmundham and Wickham Market stations. It is shown in **Figure 9.52**. As part of the ongoing discussions with Network Rail, the current proposal is to convert the crossing to a four barrier MCB-OD.

**9.3.76.** The proposal would involve widening the carriageway over the crossing slightly. The existing 1.5m footpath widths could be maintained.

**9.3.77.** As shown on **Figure 9.53,** some third party land would be required to both the north and south of the existing level crossing in order to allow for the installation and maintenance of the new barriers. An area for a temporary site compound has also been identified to the south of the crossing, with access from the highway to the south of the crossing.

**Figure 9.53** Blaxhall 1 level crossing upgrades



## Beversham

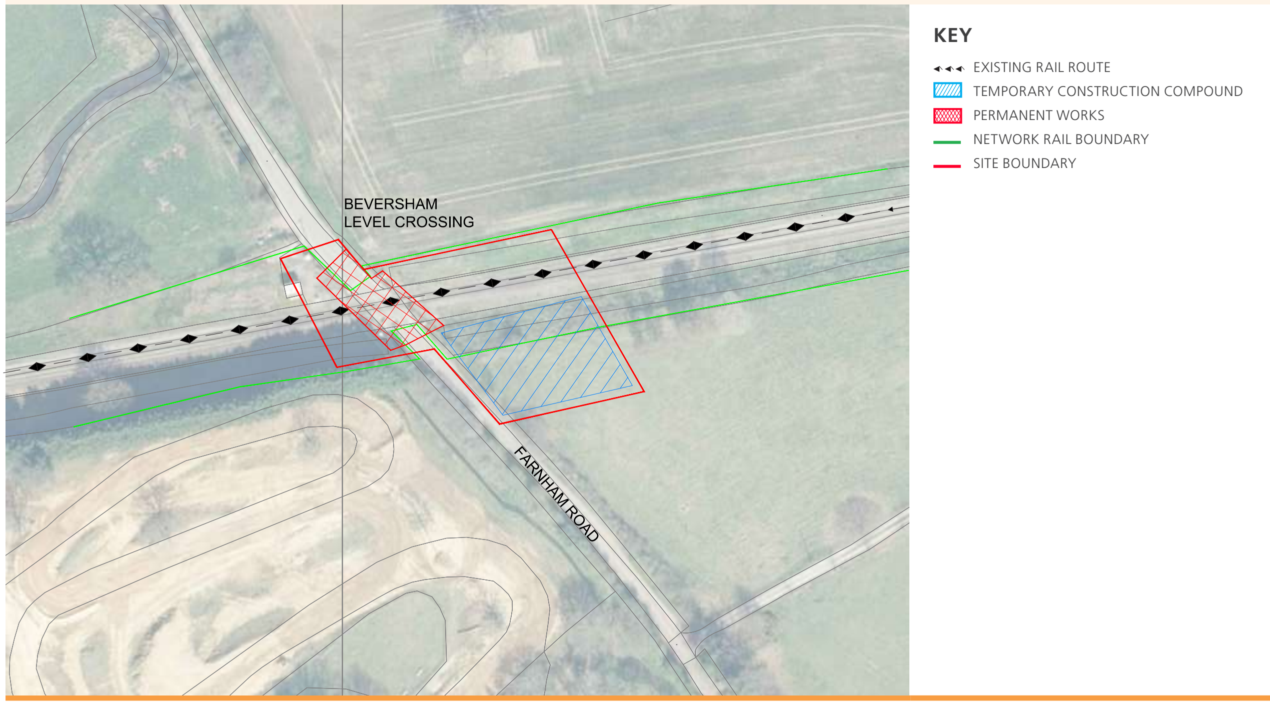
Figure 9.54 Current Beversham level crossing


**9.3.78.** Beversham Level Crossing is an ABCL located on Farnham Road between Saxmundham and Wickham Market stations. It is shown in **Figure 9.54**. As part of the ongoing discussions with Network Rail, the current proposal is to convert the crossing to a four barrier MCB-OD.

**9.3.79.** The proposal would involve retaining the current width of the carriageway and 1m footpath widths could be reinstated given the low pedestrian usage of the crossing.

**9.3.80.** As shown on **Figure 9.55,** third party land would be required to both the north and south of the existing level crossing in order to allow for the installation and maintenance of the new level crossing infrastructure. An area for a temporary construction compound has been identified to the south-east of the crossing that is partially located on third party land.

Figure 9.55 Beversham level crossing upgrades



## d) Miniature stop light upgrades along the East Suffolk line

**9.3.81.** A number of the footpath crossings and UWC along the East Suffolk line would be upgraded to MSL. For each of the following level crossings, the proposal is to install miniature stoplights on the right hand side of each approach and yellow decking panels would be added together with decision point lines and edge of footway white lines. An extended anti-slip surface would be added to enable the pedestrian to stand at the decision point safely and be able to see the miniature lights. Fencing could be installed to guide the pedestrian to a safe place to stand.

**9.3.82.** Most of the upgrade works would only require works within the Network Rail boundary. Below we have included a photograph of the existing crossing along with details of its location. Where works would take place outside of Network Rail land, we have also included a plan showing the location of the land that would be required to upgrade the crossing.

**9.3.83.** As the upgrade works will ensure that the level crossings remain in use, there are no proposals to close or divert any PRoWs.

### Lox Farm

**Figure 9.56** Current Lox Farm level crossing (ID SWC07)

**9.3.84.** Lox Farm Level Crossing (ID SWC07) is a footpath crossing located on Footpath No.18. It is shown in **Figure 9.56**. It is accessed via stiles on either side of the track that lead straight onto the track.

### Notcutts Nursery

**Figure 9.57** Current Notcutts Nursery level crossing (ID SWC10)

**9.3.85.** Notcutts Nursery Level Crossing (ID SWC10) is a private footpath crossing, accessed via stiles on both sides of the track that lead straight onto the track. It is shown in **Figure 9.57**.

### Kingston Farm

**Figure 9.58** Current Kingston Farm level crossing (ID SWC11&12)

**9.3.86.** Kingston Farm Level Crossing (ID SWC11 and 12) is a footpath crossing and UWC. It is shown in **Figure 9.58**. It is accessed via a stile for pedestrians and a user worked gate on both sides of the track.

## Jetty Avenue

**Figure 9.59** Current Jetty Avenue level crossing (ID SWC13&14)

**9.3.87.** Jetty Avenue Level Crossing (ID SWC13 and 14) is a footpath crossing and UWC. It is shown in **Figure 9.59**. It is accessed by a wicket gate for pedestrians and a user worked gate.

**9.3.88.** As shown in **Figure 9.60,** some third party land to the east and west of the existing level crossing would be required to install and maintain the new level crossing infrastructure. A temporary construction compound would be located on the land to the east of the railway.

## Maltings

**Figure 9.61** Current Maltings crossing (ID SWC19)


**9.3.89.** Maltings Crossing (ID SWC19) is a UWC located on an unnamed road which branches off from Old Malting Approach. It is shown in **Figure 9.61**. The crossing leads directly to a boat yard.

**9.3.90.** As shown on **Figure 9.62,** a small area of third party land would be required to install and maintain the new level crossing infrastructure. A temporary construction compound would also be located in the adjacent boatyard.

**Figure 9.60** Jetty Avenue level crossing upgrades

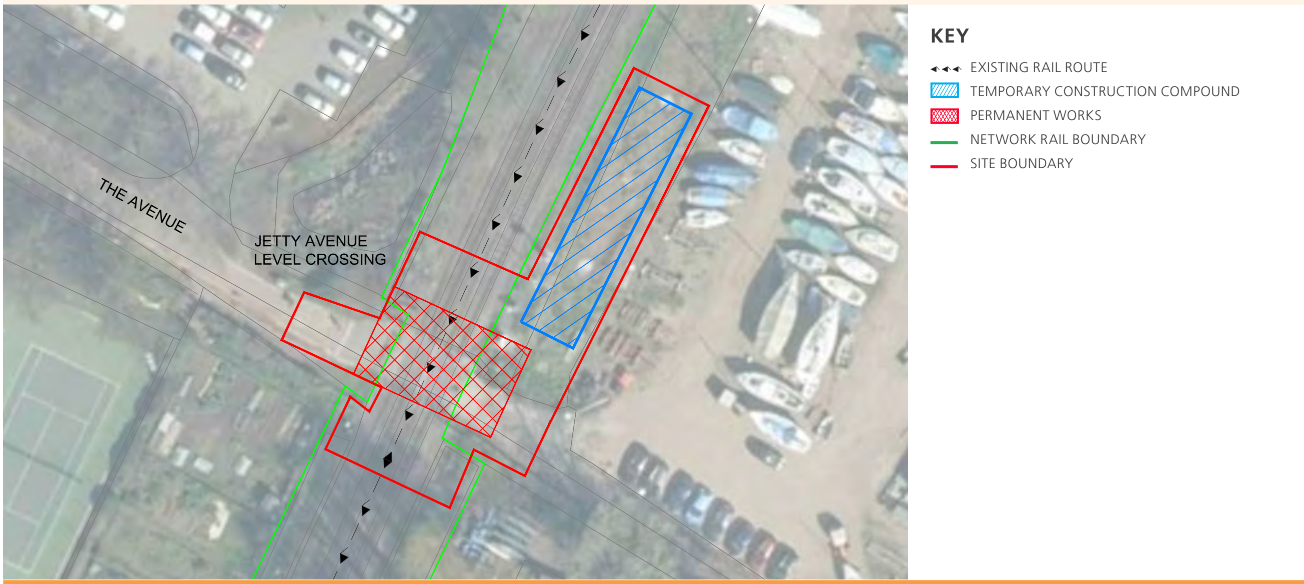


**Figure 9.62** Maltings crossing upgrades


## Melton Sewage

**Figure 9.63** Current Melton Sewage crossing (ID SWC20)

**9.3.91.** Melton Sewage Crossing (ID SWC20) is a UWC located on New Quay Lane off the B1438 (Melton Road) providing access to Melton Sewage Plant. It is shown in **Figure 9.63**.

## Dock Lane

**Figure 9.64** Current Dock Lane level crossing (ID SWC21&22)

**9.3.92.** Dock Lane Level Crossing (ID SWC21 and SWC22) is a UWC and footpath crossing located on Dock Lane off the B1438 providing access to the boat yard. It is shown in **Figure 9.64**.

## Bloss

**Figure 9.65** Current Bloss crossing (ID SWC23)

**9.3.93.** Bloss Crossing (ID SWC23) is a UWC located on Deben Way off the A1152 (Wilford Bridge Road) providing access to the boat yard. It is shown in **Figure 9.65**.

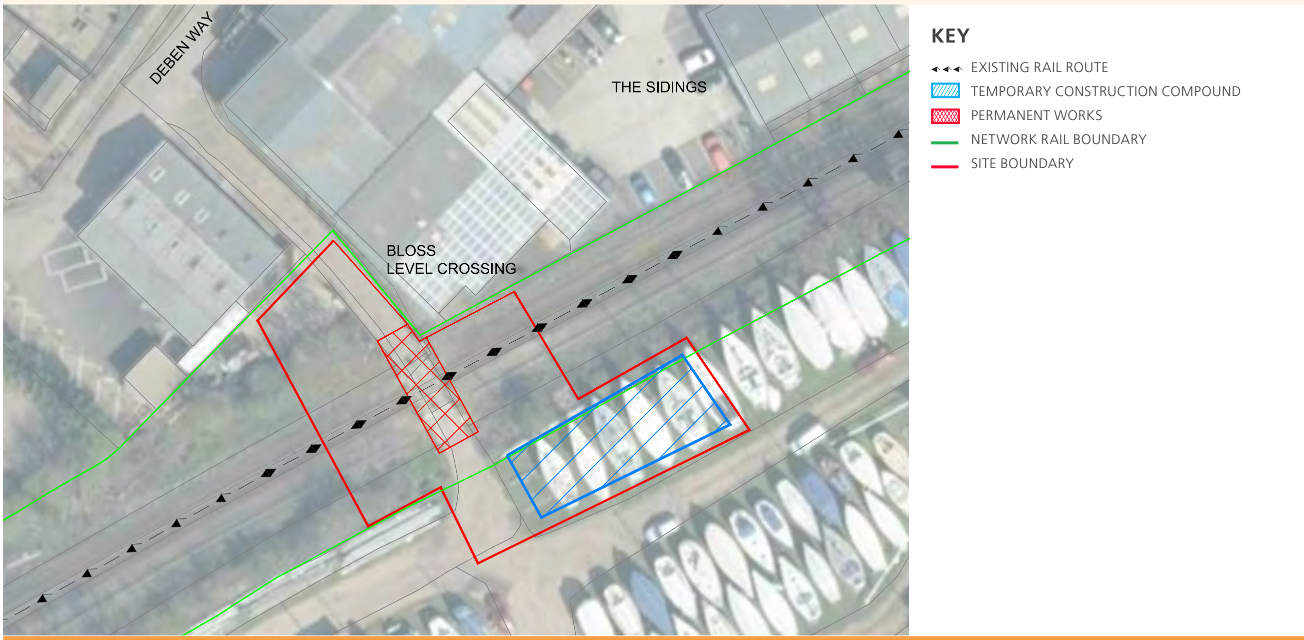
**9.3.94.** With reference to **Figure 9.66,** some third party land to the south-east of the existing level crossing would be required for a temporary construction compound.

## Ellingers

**Figure 9.67** Current Ellingers level crossing (ID SWC25&26)

**9.3.95.** Ellingers level crossing (ID SWC25 and IDSWC26) is a UWC+T and footpath located on Brick Kiln Lane off the A1152 providing access to Brick Kiln Farm Cottages. It is shown in **Figure 9.67**.

**Figure 9.66** Bloss crossing upgrades



## Uffold

**Figure 9.68** Current Uffold level crossing (ID SWC29)

**9.3.96.** Uffold level crossing (ID SWC29) is a UWC+T accessed via East Lane. It is located on farmland used mostly for cattle farming. It is shown in **Figure 9.68**.

## Blackstock

**Figure 9.69** Current Blackstock level crossing (ID SWC33&34)

**9.3.97.** Blackstock level crossing (ID SWC33 and ID SWC34) is a UWC and footpath crossing located on Station Road near Campsea Ashe. It is shown in **Figure 9.69**.

## Red House Farm

**Figure 9.70** Current Red House Farm level crossing (ID SWC35)

**9.3.98.** Red House Farm level crossing (ID SWC35) is a UWC+T accessed via a track branching from Station Road. It is located on farmland. It is shown in **Figure 9.70**.

## Snape

**Figure 9.71** Current Snape level crossing (ID SWC39&40)


**9.3.99.** Snape level crossing (ID SWC39 and SWC40) is a UWC and footpath crossing located on a restricted byway off the A1094 providing access to private properties. It is shown in **Figure 9.71**.

### Farnham

**Figure 9.72** Current Farnham level crossing (ID SWC41)


**9.3.100.** Farnham level crossing (ID SWC41) is a footpath crossing located on Footpath No.13 accessed via stiles leading over uneven ground onto the track. It is shown in **Figure 9.72**.

### Benhall/Grays Lane

**Figure 9.73** Current Benhall/Grays Lane level crossing (ID SWC42)

**9.3.101.** Benhall/Grays Lane level crossing (ID SWC42) is a footpath crossing located on Grays Lane, accessed via a wicket gate leading onto the track. It is shown in **Figure 9.73**.

**9.3.102.** In addition to the standard MSL upgrade works described above, the proposal is to convert this crossing from a footpath to a bridleway. Self-closing wicket gates that are suitable for horse riders would be hung on the left of the crossing as the user approaches.

### Brick Kiln

**Figure 9.74** Current Brick Kiln level crossing

**9.3.103.** Brick Kiln level crossing is a UWC and footpath crossing located on Kiln Lane off the B1121 providing access to Kiln Farm. It is shown in **Figure 9.74**.

**9.3.104.** With reference to **Figure 9.75**, some third party land to the east of the existing level crossing would be required for a temporary construction compound.

### e) Upgrades along the Saxmundham to Leiston branch line

**9.3.105.** There are nine operational level crossings on the Saxmundham to Leiston branch line between the Saxmundham junction and Sizewell Halt. Under the both the rail-led and road-led strategies, upgrades would be required to each of these crossings in order to use the line for freight deliveries (either to Sizewell Halt or to the main construction area via the green rail route). No closures or diversions are proposed.

**9.3.106.** **Table 9.3** provides details of the level crossings that would be upgraded along with details of their current daily usage by both pedestrians and cyclists and by trains.

**9.3.107.** Knodishall level crossing (ID SWC49) is a TOG located on a narrow lane called 'The Green' between the villages of Knodishall Green and East Green. As part of the ongoing discussions with Network Rail, the current proposal is to convert this crossing to an ABCL. It is shown in **Figure 9.76**.

**9.3.108.** As part of the proposed upgrade works, two barriers of 3.6m would need to be installed in the nearside corners. Due to low pedestrian usage of the crossing, the footways on both sides of the crossing could be installed at 1m wide with a minimum 5m wide carriageway.

**Figure 9.75** Brick Kiln level crossing upgrades

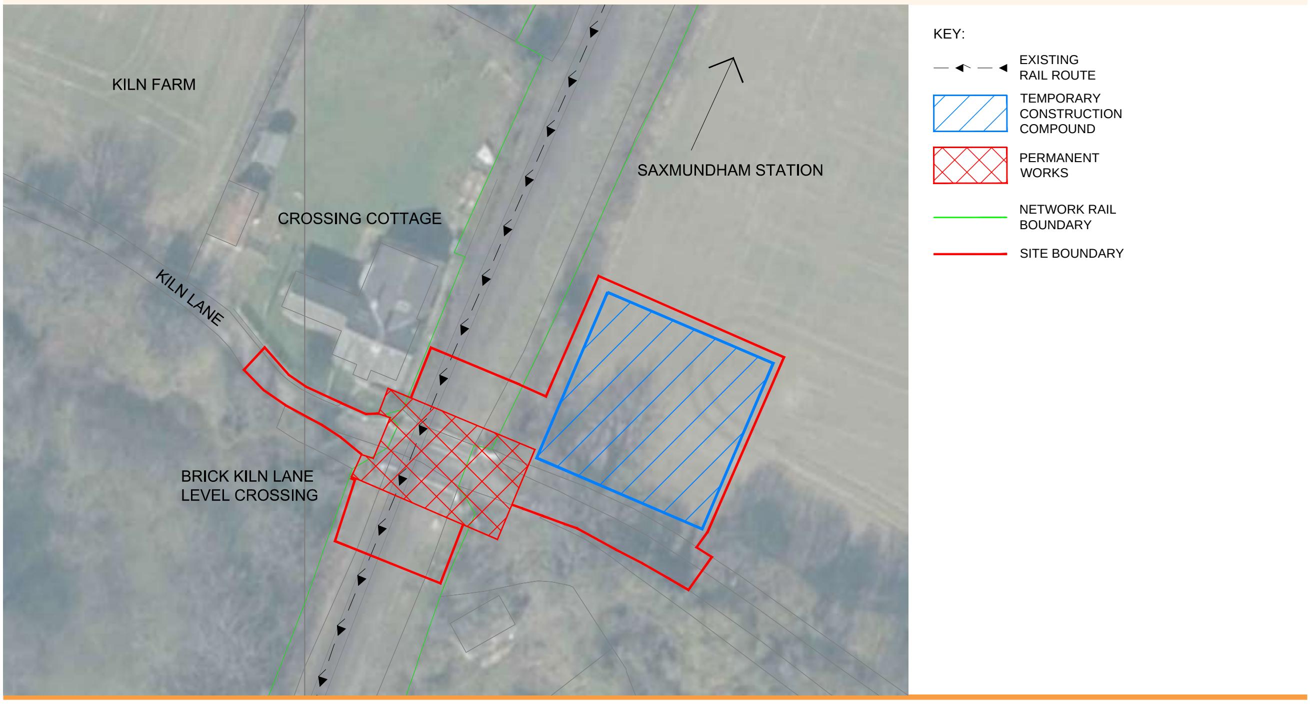



**Table 9.3** Level crossing usage and proposed upgrades along branch line

| Crossing ID | Crossing Name | Crossing Type | Trains per day[3] | Usage per day [4] | Proposed Change |
|---|---|---|---|---|---|
| SWC48 | Bratts Black House | UWC | 2 | 5 Vehicles, 2 Pedestrians or Cyclists | Upgrade to MSL |
| SWC49 | Knodishall | TOG | 2 | 8 Vehicles, 54 Pedestrians or Cyclists | Upgrade to ABCL |
| SWC50 | Westhouse | TOG | 2 | 8 Vehicles, Infrequent Pedestrian use | Upgrade to ABCL |
| SWC51 | Snowdens | UWC | 2 | Infrequent vehicular use, Infrequent Pedestrian use | Upgrade to MSL |
| SWC52 | Saxmundham Road | TOG | 2 | 83 Vehicles, 54 Pedestrians or Cyclists | Upgrade to ABCL |
| SWC53 | Buckles Wood | Footpath | 2 | Unspecified | Upgrade to MSL |
| SWC54 | Summerhill | Footpath | 2 | 6 Pedestrians or Cyclists | Upgrade to MSL |
| SWC55 | Leiston | TOG | 2 | 483 Vehicles, 189 Pedestrians or Cyclists | Upgrade to TOB |
| SWC56 | Sizewell | TOG | 2 | 484 Vehicles, 243 Pedestrians or Cyclists | Upgrade to TOB |

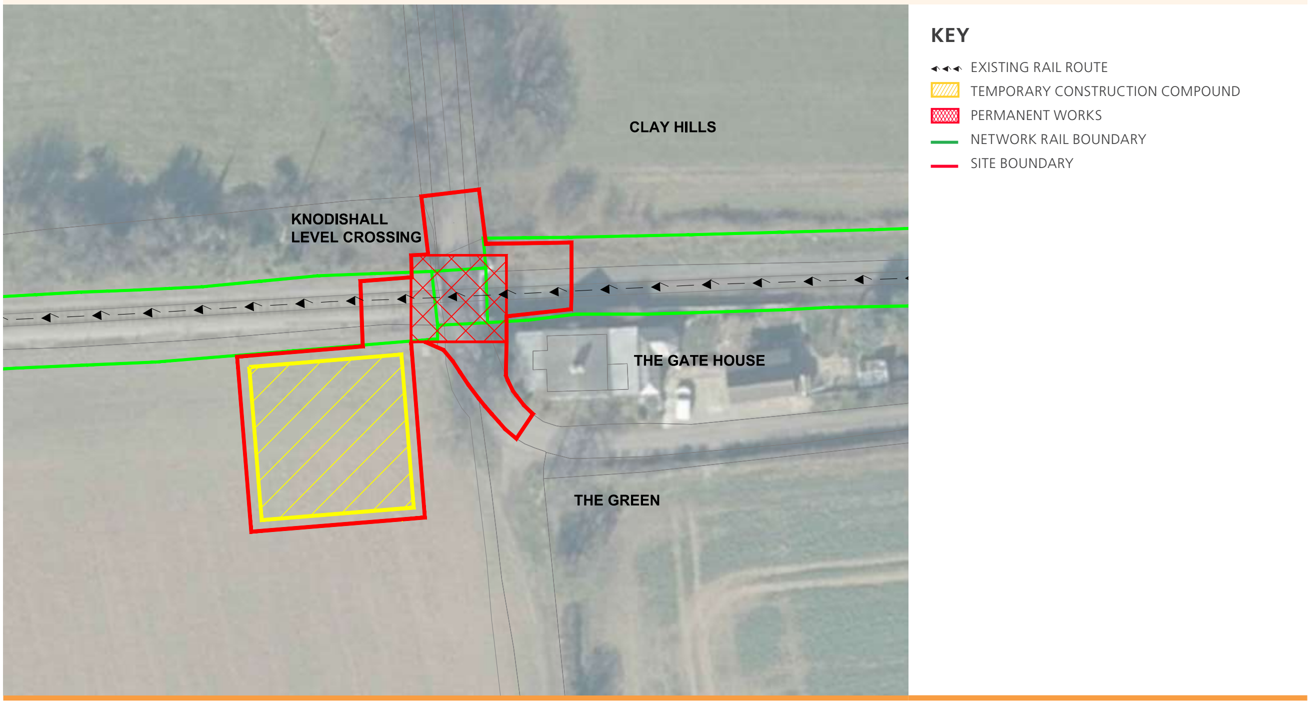
[3] Train count at the time of the most recent survey for this crossing
[4] Based on recent census data

## Knodishall

### Figure 9.76 Current Knodishall level crossing (ID SWC49)


**9.3.109.** As shown on **Figure 9.77,** some third party land to the north and south of the existing level crossing would be required for the installation and maintenance of the new level crossing infrastructure. A temporary construction compound would be located on third party land to the south-west of the crossing.

### Figure 9.77 Knodishall level crossing upgrades



## West House

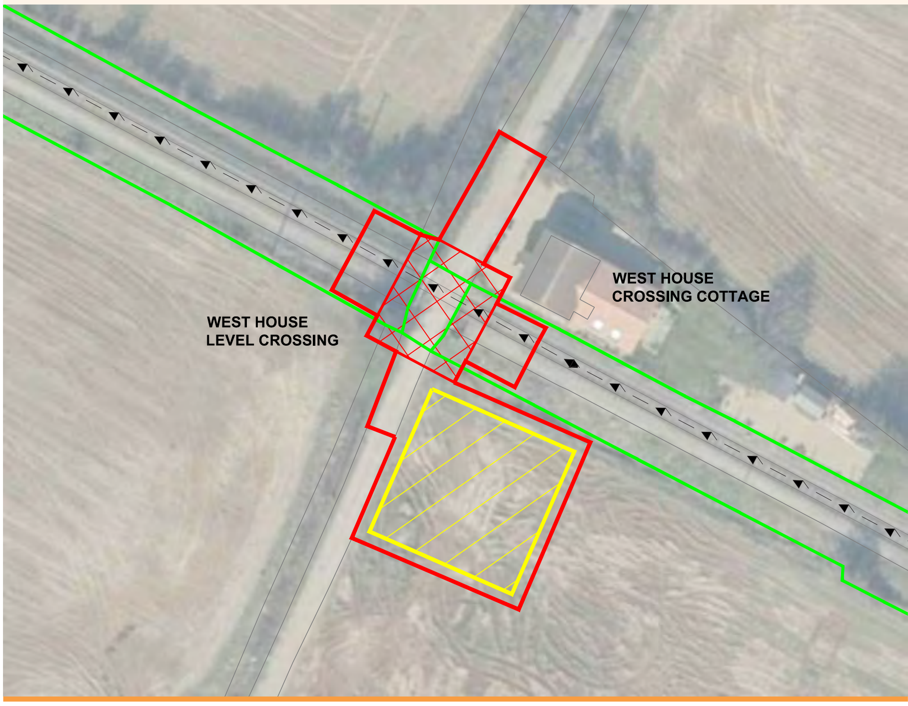
**Figure 9.78** Current West House level crossing (ID SWC50)

**9.3.110.** West House level crossing (ID SWC50) is a TOG crossing located on a narrow access lane to West House Farm off Abbey Lane. As part of the ongoing discussions with Network Rail, the current proposal is to convert this crossing to an ABCL. It is shown in **Figure 9.78**.

**9.3.111.** As part of the proposed upgrade works, two barriers of 3.6m would need to be installed to the south-west and north-east of the crossing. Due to low pedestrian usage of the crossing, the footways on both sides of the crossing could be installed at 1m wide with a minimum 5m wide carriageway.

**9.3.112.** As shown on **Figure 9.79,** some third party land would be required to both the north and south of the existing level crossing for the installation and maintenance of the new level crossing infrastructure. A temporary construction compound would be located on third party land to the south of the crossing.

**Figure 9.79** West House level crossing upgrades




**KEY**

- EXISTING RAIL ROUTE
- TEMPORARY CONSTRUCTION COMPOUND
- PERMANENT WORKS
- NETWORK RAIL BOUNDARY
- SITE BOUNDARY

## Saxmundham Road

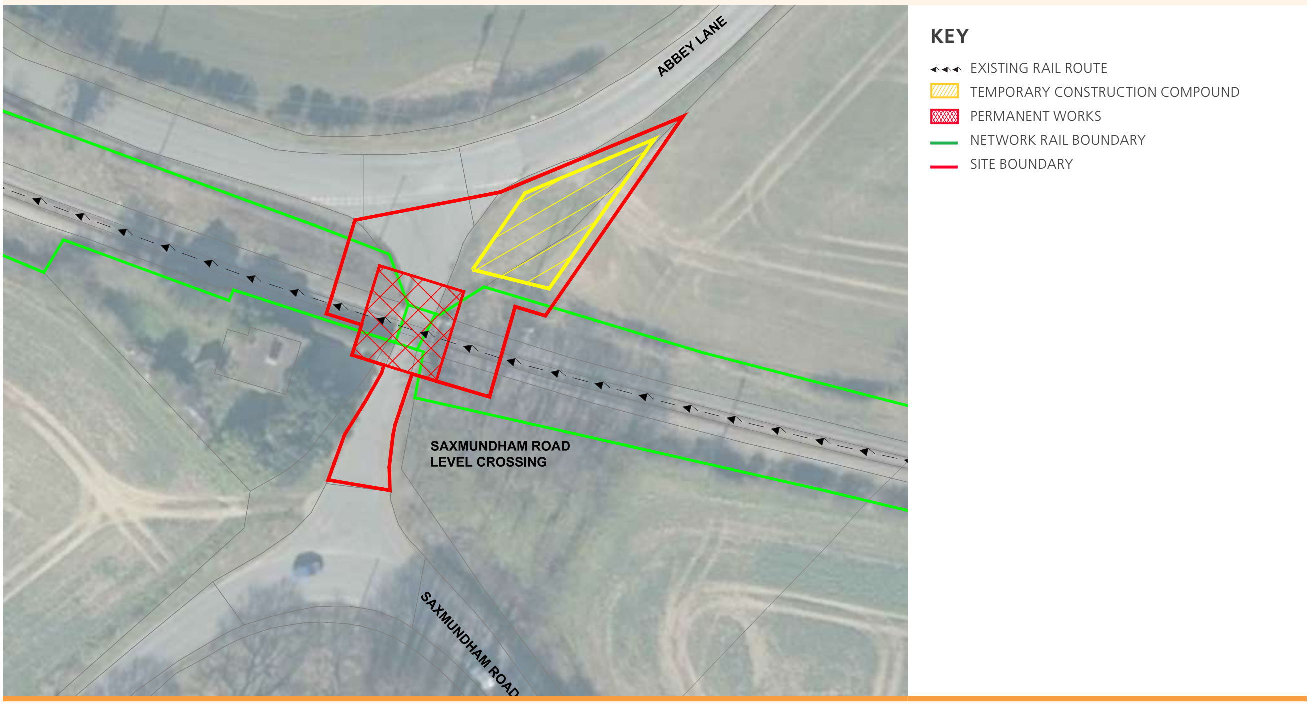
**Figure 9.80** Current Saxmundham Road level crossing (ID SWC52)

**9.3.113.** Saxmundham Road level crossing (ID SWC52) is a TOG crossing located on a short lane between Saxmundham Road and Abbey Lane. As part of the ongoing discussions with Network Rail, the current proposal is to convert this crossing to an ABCL. It is shown in **Figure 9.80.**

**9.3.114.** As part of the proposed upgrade works, two barriers of 4.1m would be installed to the south-west and north-east of the crossing. Due to low pedestrian usage of the crossing, the footways on both sides of the crossing could be installed at 1m wide with a minimum 5m wide carriageway.

**9.3.115.** As shown on **Figure 9.81** some third party land would be required to both the north and south of the existing level crossing in order to allow for the installation and maintenance of the new level crossing infrastructure. A temporary construction compound would be located on third party land to the north-east of the crossing.

**Figure 9.81** Saxmundham Road level crossing upgrades



## Leiston

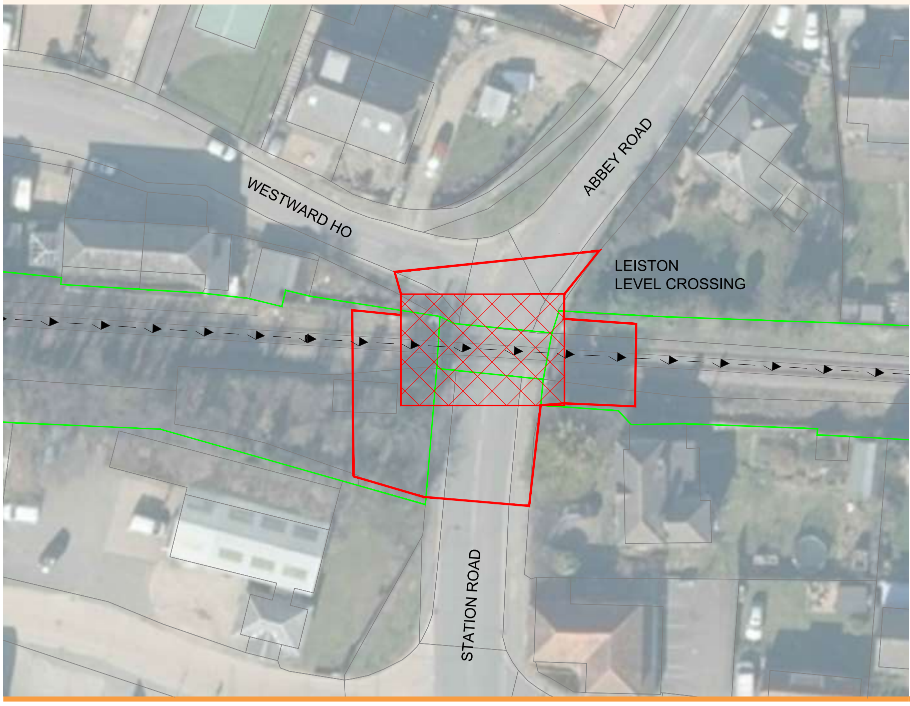
**Figure 9.82** Current Leiston level crossing (ID SWC55)

**9.3.116.** Leiston level crossing (ID SWC55) is a TOG crossing located on Station Road and Abbey Road. As part of the ongoing discussions with Network Rail, the current proposal is to convert this footpath crossing to a TOB. It is shown in **Figure 9.82**.

**9.3.117.** Due to the wide carriageway and adjacent road of Westward Ho, three barriers of 6.6m and one barrier of 8.6m fitted with A-frame support would need to be used in the four corners of the crossing. The footways on both sides of the crossing could be maintained at 1.8m wide.

**9.3.118.** As shown on **Figure 9.83,** some third party land would be required to both the north and south of the existing level crossing in order to allow for the installation and maintenance of the new level crossing infrastructure.

**Figure 9.83** Leiston level crossing upgrades




KEY
- EXISTING RAIL ROUTE
- PERMANENT WORKS
- NETWORK RAIL BOUNDARY
- SITE BOUNDARY

## Sizewell

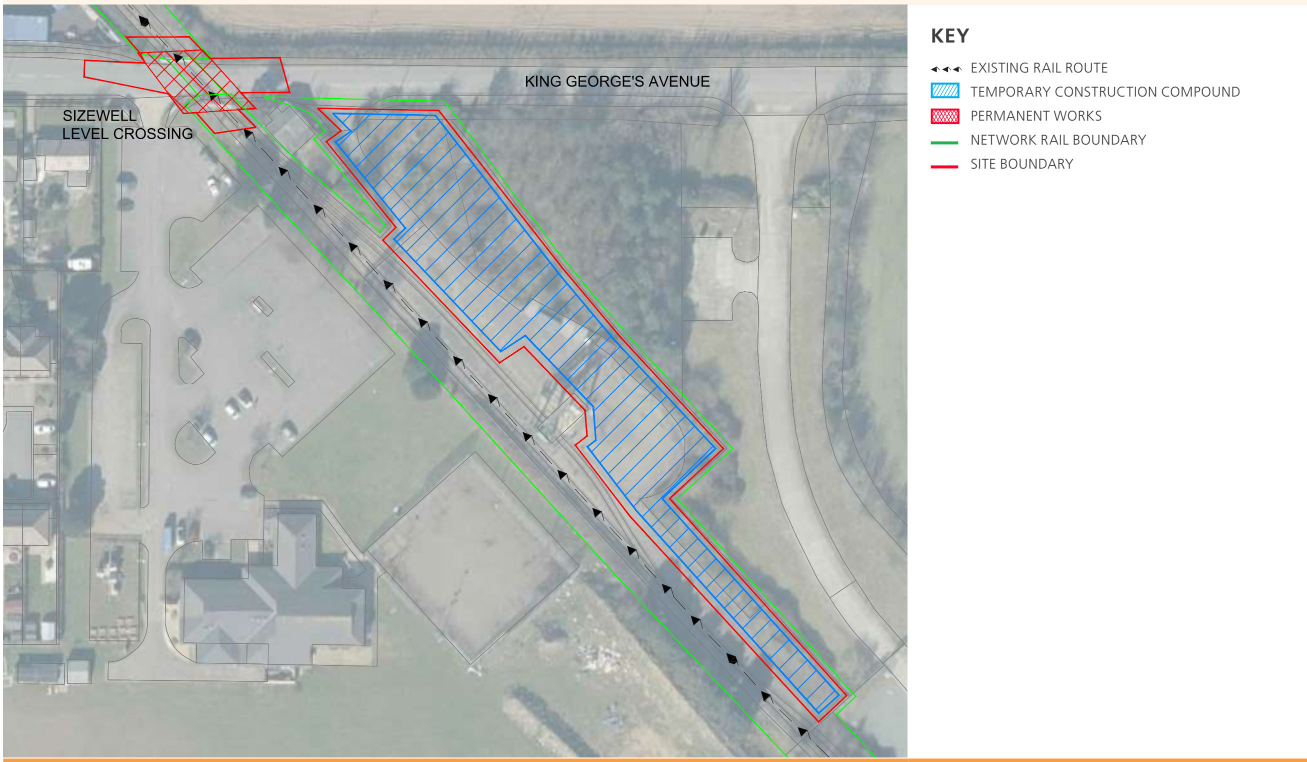
**Figure 9.84** Current Sizewell level crossing (ID SWC56)

**9.3.119.** Sizewell level crossing (ID SWC56) is a TOG crossing located on King George's Avenue. As part of the ongoing discussions with Network Rail, the current proposal is to convert this footpath crossing to a TOB. It is shown in **Figure 9.84**.

**9.3.120.** Due to the wide carriageway and adjacent road of Westward Ho, three barriers of 8.1m and one barrier of 9.1m fitted with A-frame support would need to be used in the four corners of the crossing. The footways on the southern side of the crossing could be maintained at 1.8m wide with the addition of a 1m wide footway on the northern side over the crossing area.

**9.3.121.** As shown on **Figure 9.85**, third party land would be required to both the east and west of the existing level crossing in order to allow for the installation and maintenance of the new level crossing infrastructure. A large area to the east of the railway track would be required for a temporary construction area. This would be located on Network Rail land.

**Figure 9.85** Sizewell level crossing upgrades



## f) Miniature stop light upgrades along the Saxmundham to Leiston branch line

**9.3.122.** Four of the level crossings along the Saxmundham to Leiston branch line would be upgraded to MSL. For each of the following level crossings, the proposal is to install miniature stoplights on the right hand side of each approach and yellow decking panels would be added together with decision point lines and edge of footway white lines. An extended anti-slip surface would be added to enable the pedestrian to stand at the decision point safely and be able to see the miniature lights. Fencing could be installed to guide the pedestrian to a safe place to stand.

**9.3.123.** The upgrade works would only require works within the Network Rail boundary. Below we have included a photograph of the existing crossing along with details of its location.

**9.3.124.** As the upgrade works will ensure that the level crossings remain in use, there are no proposals to close or divert any PRoWs.

### Bratts Black House

**Figure 9.86** Current Bratts Black House level crossing

**9.3.125.** Bratts Black House level crossing is a UWC on private land accessed via field gates located along an access road off Clayhills Road. It is shown in **Figure 9.86**.

### Snowdens

**Figure 9.87** Current Snowdens level crossing (ID SWC51)


**9.3.126.** Snowdens level crossing (ID SWC51) is a UWC accessed from an unnamed road branching from Saxmundham Road. It is located on private land accessed via field gates. It is shown in **Figure 9.87**.

### Buckles Wood

**Figure 9.88** Current Buckles Wood level crossing (ID SWC53)


**9.3.127.** Buckles Wood level crossing (ID SWC53) is a footpath crossing located on Footpath No. 3 accessed via stiles leading over uneven ground onto the track. It is shown in **Figure 9.88**.