



The Sizewell C Project

6.10 Volume 9 Rail

Chapter 3 Alternatives and Design Evolution

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

May 2020

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



Contents

3	Alternatives and Design Evolution – Rail.....	1
3.1	Introduction.....	1
3.2	Scheme requirements.....	2
3.3	Alternative schemes for the green rail route.....	2
3.4	Alternative designs and design evolution for the green rail route.....	9
3.5	Alternative schemes and design evolution – Proposed rail improvement works.....	23
	References.....	41

Tables

Table 3.1:	Stage 3 - East Suffolk line level crossing proposals.....	30
Table 3.2:	Stage 3 – Saxmundham to Leiston branch line level crossing proposals.....	32
Table 3.3:	Stage 4 – Summary of changes to the Stage 3 PEI.....	38

Plates

Plate 3.1:	Stage 1 options for the rail route extension.....	4
Plate 3.2:	Stage 2 indicative masterplan for the green rail route.....	12
Plate 3.3:	Stage 2 consultation indicative masterplan for temporary rail terminal on LEEIE.....	13
Plate 3.4:	Stage 3 green rail route option 1 – new footbridge.....	18
Plate 3.5:	Stage 3 green rail route option 2 – new level crossing.....	19
Plate 3.6:	Stage 1 passing loop at Wickham Market Station.....	26
Plate 3.7:	Stage 3 preferred passing loop between the Pettistree level crossing and the Uffold level crossing.....	28
Plate 3.8:	Stage 3 junction at Saxmundham crossover.....	29

Figures

None provided.

Appendices

None provided.

3 Alternatives and Design Evolution – Rail

3.1 Introduction

3.1.1 This section presents a description of the main alternatives considered by SZC Co. in relation to the proposed green rail route. An indication of the main reasons for SZC Co.'s choice, taking into account the environmental effects, is produced as required by Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the "EIA Regulations") (Ref. 3.1).

3.1.2 Specifically, this chapter provides an account of the following:

- alternative line extension options, which would spur off the existing Saxmundham to Leiston branch line; and
- alternative locations and route corridors considered for the rail line extensions and associated rail terminals.

3.1.3 This includes details of how the choice of alignment, locations of the terminals and associated crossings, and overall layout of the routes have been influenced by environmental and transport considerations, and how this has resulted in mitigation measures being incorporated within the scheme design, referred to as primary mitigation.

3.1.4 This process has been informed by:

- technical environmental assessments;
- construction requirements for the Sizewell C Project; and
- design development.

3.1.5 Due to the operational requirements of the rail proposals, and the reliance on the existing rail infrastructure (including the Saxmundham to Leiston branch line) which limits the potential location of the proposals, socio-economic considerations were not a consideration for rail.

3.1.6 This chapter should be read in conjunction with **Volume 1, Chapter 5** of the **ES** which describes the strategic-level alternatives for the wider Sizewell C Project.

3.2 Scheme requirements

3.2.1 The rail proposals have evolved through the adoption of the following principles:

- consideration of the site's context and development constraints;
- an understanding of the operational requirements of the proposed rail line extension, and the rail terminal during construction of the Sizewell C Project; and
- the outcomes of environmental assessment and consultation feedback to avoid significant environmental effects where possible, and where this is not possible, to mitigate and manage any remaining significant effects.

3.2.2 The design process for the proposed development has been iterative and informed by public consultation responses, including feedback from statutory consultees and other stakeholders. The formal Stage 1, Stage 2, Stage 3 and Stage 4 consultations are described in the **Consultation Report** (Doc Ref. 5.1).

3.3 Alternative schemes for the green rail route

a) Background

3.3.1 As set out in **Volume 1, Chapter 2** of the **ES**, SZC Co. has developed a strategy to transport a proportion of the Sizewell C Project construction materials to the main development site via the rail network.

3.3.2 The delivery of freight by rail would offer an alternative non-road option for the delivery of a variety of construction materials. This would offer flexibility for the freight strategy, and secure a freight mode that would be operational throughout the year with much less risk of weather disruption compared to other non-road options. Use of rail would further reduce the number of heavy goods vehicles (HGV) movements on the local road network.

3.3.3 In order to minimise HGV movements, the strategy requires any rail terminal to be within or very close to the main development site. This approach would enable freight trains to be unloaded close to where the materials would be used. The potential locations of the rail terminals were determined, to some extent, by the rail route alignments that were possible.

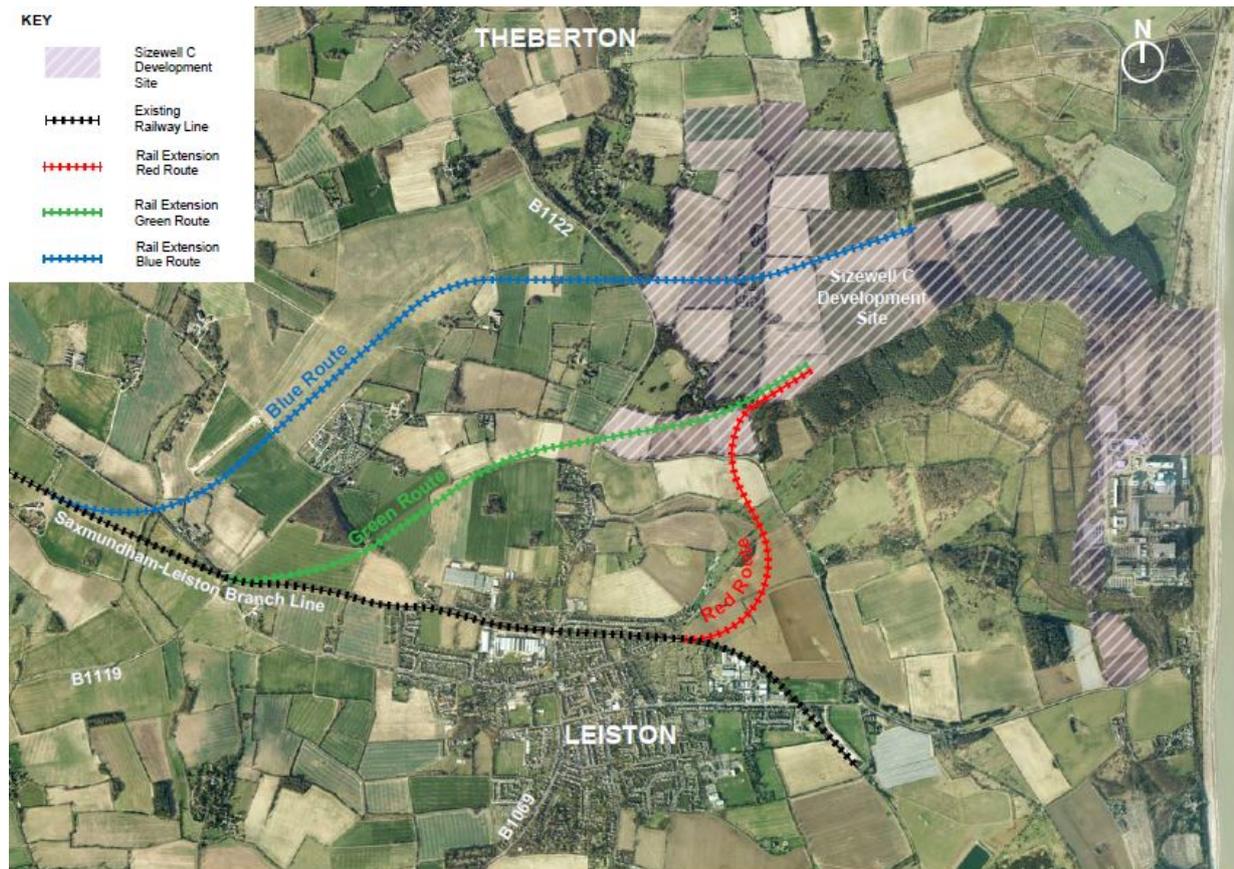
b) History of scheme selection

- 3.3.4 At Stage 1 an initial Transport Strategy and Supporting Information report assessed the existing transport conditions around Sizewell and the likely transport impacts of the construction and operation of the Sizewell C Project.
- 3.3.5 The report found that the existing rail terminal at Leiston, known as Sizewell Halt (located south of King George’s Avenue, at the end of the Saxmundham to Leiston branch line) could be used to bring freight deliveries close to the site by rail. However, it would require refurbishment, and freight would then need to be transferred to the construction site by HGVs via Lover’s Lane.
- 3.3.6 The report concluded that the capacity of Sizewell Halt, and the existing local rail infrastructure to support rail freight deliveries, was limited to one freight train per day, which would be insufficient for achieving the aim of substantially reducing road freight.
- 3.3.7 SZC Co. therefore invited views on a number of proposals which would enhance the scope for using rail for freight. Three options involved a spur off the existing Saxmundham to Leiston branch line, each of which would require additional rail infrastructure including new sections of track and level crossings at either the B1122 (Abbey Road) or Lover’s Lane, combined with a new rail terminal within the main development site.
- 3.3.8 A fourth option was to make use of the existing branch line as far as Leiston (with local upgrades as necessary), and to develop a new rail terminal to the north of King George’s Avenue without building a rail line extension into the main development site. This would be located on land to the East of Eastlands Industrial Estate (LEEIE) and would be included in the Sizewell C main development site construction area. This fourth option has evolved over the consultation stages and forms part of the Sizewell C **Draft Development Consent Order (DCO)** (Doc Ref. 3.1) proposals, in addition to the proposed green rail route, to allow for the delivery of freight by rail in the early years of construction of the Sizewell C Project, prior to the green rail route being operational. As the LEEIE falls within the Sizewell C main development site, further detail can be found in **Volume 2, Chapter 6** of the **ES** concerning the alternative options and design evolution of the main development site.
- 3.3.9 For the rail extension route, three rail route options (blue, red and green) were developed initially and evolved through the four stages of public consultation undertaken for the development of the Sizewell C Project, resulting in the green rail route being proposed in the DCO proposals. This design evolution is described in the following sections.

c) Stage 1 Consultation

3.3.10 As part of the Stage 1 consultation, three rail extension routes were presented, as illustrated in **Plate 3.1**. The Stage 1 Environmental Report Supporting Document noted that the indicative route options were subject to further design and assessment work and should not be seen as precise alignment proposals at this stage.

Plate 3.1: Stage 1 options for the rail route extension



3.3.11 Two of the routes (the blue and green route) would have spurred off the existing track to the west of Leiston, and route through open countryside into the main development site. The third route (the red route) would have spurred off the existing track just north of Eastlands Industrial Estate in Leiston. All three routes would have required a rail terminal within the main development site.

3.3.12 The red route option offered the advantage of being shorter in length than the other two options but would have involved the freight trains passing through Leiston along the existing rail corridor, with associated potential noise and vibration effects. It would have also involved construction across

watercourses which feed into the Sizewell Belts and Marshes Site of Special Scientific Interest (SSSI), as well as the likely loss of a small amount of woodland habitat, with potential impacts on protected species.

3.3.13 The blue and green routes would have avoided trains passing through Leiston, which was preferable due to some freight train movements being likely to occur at night. However, these routes would have also had the greater landscape, and visual impacts on the surrounding countryside, including potential impacts on views from Leiston Abbey. The red route was the shortest of the routes with potentially reduced visual impacts.

3.3.14 Both the blue and green route options would have crossed a number of roads and public rights of way (PRoW), requiring cuttings, bridges, crossings, and/or diversions. A number of potential adverse impacts were identified, notably in relation to landscape and visual amenity, heritage, ecology and noise and vibration.

3.3.15 The green route (and to a lesser extent the blue and red routes) would have passed close to Leiston Abbey, introducing the potential for direct and indirect impacts on the abbey and its setting. The Stage 1 Environmental Report noted that detailed consideration of its horizontal and vertical alignment would be needed to establish the potential for minimising these impacts.

3.3.16 At the Stage 1 consultation, the blue rail route was not preferred as it was considered to have a greater visual impact on the surrounding countryside due to its longer length compared to the green and red routes. In addition, it would have needed to enter the main development site at the preferred location for the accommodation campus.

3.3.17 Following the Stage 1 consultation, and further consideration of the options, SZC Co. assessed the three rail route options against the following considerations in order to identify a preferred scheme:

- consultation responses;
- environmental considerations;
- construction and operational requirements; and
- planning policy.

3.3.18 Of the above four considerations, the environmental considerations were the most important in informing the selection of the scheme and are set out in

the sections that follow. Please refer to the **Consultation Report** (Doc Ref. 5.1), and the **Planning Statement** (Doc Ref. 8.4) for further details regarding how consultation, construction and operational requirements, and planning policy influenced the scheme selection.

3.3.19 A range of different environmental considerations were relevant to the rail options presented at the Stage 1 consultation. The principal considerations related to:

- terrestrial ecology;
- noise and vibration;
- landscape and visual; and
- historic environment.

i. **Terrestrial ecology**

3.3.20 The ecological effects associated with the green and blue rail route options, outside of the main development site, were considered likely to be relatively minor. While detailed ecological surveys were not completed at this stage, the rail route options would have crossed agricultural land that has no ecological designations and was anticipated to be of relatively low ecological value.

3.3.21 The red rail route option, however, was incompatible with the SZC Co. Aldhurst Farm Habitat Creation Scheme to the south and west of Lover's Lane. The Habitat Creation Scheme was created to mitigate the loss of SSSI habitat, which would occur as a result of the permanent Sizewell C development. The initial works to create the wetland and heathland habitats were completed in 2016, to allow for the habitats to establish prior to the potential future loss of the SSSI.

3.3.22 Both the green and red rail routes could have had an ecological impact within the main development site. Their alignments could have resulted in the potential disturbance from noise and lighting to bats within the retained woodland (Kenton Hills) to the south. Any such effects were considered within the context of SZC Co.'s wider proposals for construction activities, and related development within the main development site. For more information, please refer to **Volume 2, Chapter 6** of the **ES**.

ii. Noise and vibration

- 3.3.23** SZC Co. undertook a preliminary assessment of the potential noise and vibration impacts of freight train movements. This indicated that adverse noise impacts would have been likely from passing freight trains on residential properties situated close (approximately 40-50 metres (m)) to the railway line for all of the route options. However, the frequency of those impacts would have been limited to a maximum of five deliveries per day (10 movements), lasting a small number of minutes at most, as the train passes.
- 3.3.24** Rail noise and vibration impacts would have been a greater issue with respect to the red route rail route option as trains would pass through Leiston where there are a number of properties close to the rail line.
- 3.3.25** By contrast, the blue and green rail route options would not have run close to any comparable concentrations of residential properties. As such, fewer properties would have been impacted. The blue and green routes were, however, closer to the Cakes and Ale Caravan Park (in particular the blue rail route option), and the Pro Corda music school at the second Leiston Abbey site. The greater distance between these receptors and the railway line meant that noise impacts associated with these options would have been lower and were not considered likely to be significant. Furthermore, there was greater opportunity to provide some form of screening between the potential routes and these receptors due to the additional distance.
- 3.3.26** All of the rail route options would have required the use of the existing Saxmundham to Leiston branch line in part. There are a small number of residential properties located close to the section of the line after it branches at Saxmundham towards Leiston (west of Leiston). These properties could have potentially been impacted by noise from the freight trains travelling to and from the Sizewell C main development site, irrespective of which of the rail route options was pursued.

iii. Landscape and visual

- 3.3.27** Each of the rail extension options could have potentially given rise to significant landscape and visual impacts. These routes would have crossed areas of open countryside and generated some associated earthworks and highway works.
- 3.3.28** Due to the undulating terrain it would have crossed, the red rail route option would have required major earthworks, and generated relatively large volumes of spoil, despite its shorter length relative to the other route options. SZC Co. would have sought to incorporate all spoil into the landscaping scheme, thereby retaining the spoil on-site.

NOT PROTECTIVELY MARKED

3.3.29 The blue and green rail route options both crossed areas of open countryside. Consequently, this would have required some earthworks and associated spoil storage, which would have been incorporated into the landscaping along the route, albeit earthwork volumes could have been reduced through design.

3.3.30 The blue rail route would have been approximately 1.3 kilometres (km) longer than the green rail route, and therefore would have bisected a greater area of open countryside. The fields that would have been crossed by the blue rail route are generally larger, with fewer intervening landscape features such as boundary hedgerows and trees. In comparison, the green rail route would cross an area of countryside characterised by smaller fields (and thus, a greater number of landscape features separating them) and more undulating topography.

iv. Historic environment

3.3.31 There would have been potential significant impacts on the setting of the Scheduled Monument, and associated Grade I and II listed buildings of the second Leiston Abbey site from each of the blue, red and green rail route options.

3.3.32 SZC Co. considered that the alignment of the red rail route option would be sufficiently distant from Leiston Abbey to avoid harm to its setting.

3.3.33 However, both the blue and the green rail route options would have run much closer to Leiston Abbey giving the potential for change to its setting. This could have been exacerbated when taken in-combination with the works on the main development site, in particular the site entrance and accommodation campus. It was considered, in this context, that the impact on the second Leiston Abbey site would have been greater as a result of the green rail route compared to the blue rail route. This is because of the green rail route's proximity to, and relative visibility from, the Abbey ruins. These ruins have a higher designation (i.e. Scheduled Monument/Grade I listed building) than the Grade II listed buildings which lie closer to the blue route.

3.3.34 Despite this, as the chosen rail route would only be required to support the construction of the Sizewell C Project and would then be removed and the land reinstated, any harm to the setting of the Abbey would only be temporary.

v. Consultation responses

3.3.35 Of the three options for the rail route presented at Stage 1, no clear preference emerged from the consultation. The different rail options would

have given rise to different efficiencies in the construction of the Sizewell C Project, as well as different environmental effects. No option would have met all of the Sizewell C Project requirements without giving rise to any significant environmental impacts.

3.4 Alternative designs and design evolution for the green rail route

3.4.1 By the time of the Stage 2 consultation, SZC Co. had reached a view that the blue and red rail route options should not be considered further and that the green rail route option should be taken forward for further consultation.

3.4.2 The blue rail route was not preferred, as it would have resulted in a greater visual impact on the surrounding countryside due to its length, and it would have needed to enter the main development site at the preferred location for the accommodation campus. This would have impacted on the efficiency of the Sizewell C main development site. In addition, it would have given rise to landscape and visual effects within the open countryside and, in combination with the main site entrance and accommodation campus, would have had the potential to harm the setting of Leiston Abbey.

3.4.3 The red route was discounted as it would have been incompatible with the Habitat Creation Scheme at Aldhurst Farm, designed to mitigate the loss of SSSI habitat due to the Sizewell C Project. Furthermore, the red route would have required routing trains on the existing branch line through Leiston, which would have given rise to noise and vibration effects for some residential properties in Leiston.

3.4.4 SZC Co. recognised that the green rail route option had the potential to give rise to landscape and visual impacts within open countryside, and potential heritage impacts in relation to the setting of Leiston Abbey. However, it was considered that design measures would mitigate and reduce these impacts, and the green rail route would be temporary, only to be in operation for the duration of the main construction phase of the Sizewell C Project. Therefore, any landscape and heritage impacts would also be temporary. The green rail route would also allow for rail freight to be delivered directly into the main development site to the batching plant area, ensuring minimum interference with other site activities. It was therefore selected as the preferred option and progressed to Stage 2.

a) Stage 2 Consultation

3.4.5 If a rail-led freight transport strategy was to be pursued, SZC Co. planned to 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 have enabled up to two freight trains to be operated by SZC Co. per day (four movements).

3.4.6 After the early years of construction, under a rail-led strategy there would have been a need for a greater number of freight deliveries per day than could have been accommodated at Sizewell Halt. The Stage 2 consultation therefore focussed on two alternative options to meet this need, which would have allowed up to five freight trains per day (ten movements):

3.4.7 The options were the proposed green rail route or a new rail terminal within the main development site (on the land to the north of King George's Avenue/LEEIE).

3.4.8 The rail terminal options are detailed in full in **Volume 2, Chapter 6** of the **ES** but a summary of the options as presented in the Stage 2 consultation are outlined below.

i. **Green rail route**

3.4.9 The green rail route would involve a temporary rail extension route branching off from the Saxmundham to Leiston branch line into the main development site. The Stage 2 consultation proposals included:

- the temporary closure of Buckleswood Road either side of the rail line extension during the construction of the Sizewell C Project, with a diversion for motor vehicles and a new footbridge with ramped access over the railway line to retain the route for pedestrians and cyclists. The road would have been reopened once the railway line had been removed;
- a level crossing where the B1122 (Abbey Road) would meet the rail extension so road users could cross safely. Each closure would have lasted for a few minutes at most as the train passes - for a maximum of five trains (ten movements) a day during peak construction (less frequently on most days), causing limited delays to other road users;
- a permanent realignment of Lover's Lane that would improve visibility at the junction with the B1122 (Abbey Road), moving the junction approximately 100m to the south;
- the old alignment of Lover's Lane would have remained in place for cyclists and equestrians;

- the diversion of footpaths to the west of the B1122 (Footpath E-363/006/0 and Footpath E-363/010/0) and south of Buckleswood Road (Footpath E-363/003/0);
- integration with the wider proposals for the diversion of Bridleway 19; and
- during rail route construction, vehicular access to a laydown area off Buckleswood Road and landscaped earthen mounds to screen development from residential properties on the opposite side of the road.

3.4.10 The rail extension was proposed to be designed to meet Network Rail standards. The Stage 2 consultation indicative masterplan for the green rail route is shown in **Plate 3.2**.

Plate 3.2: Stage 2 indicative masterplan for the green rail route



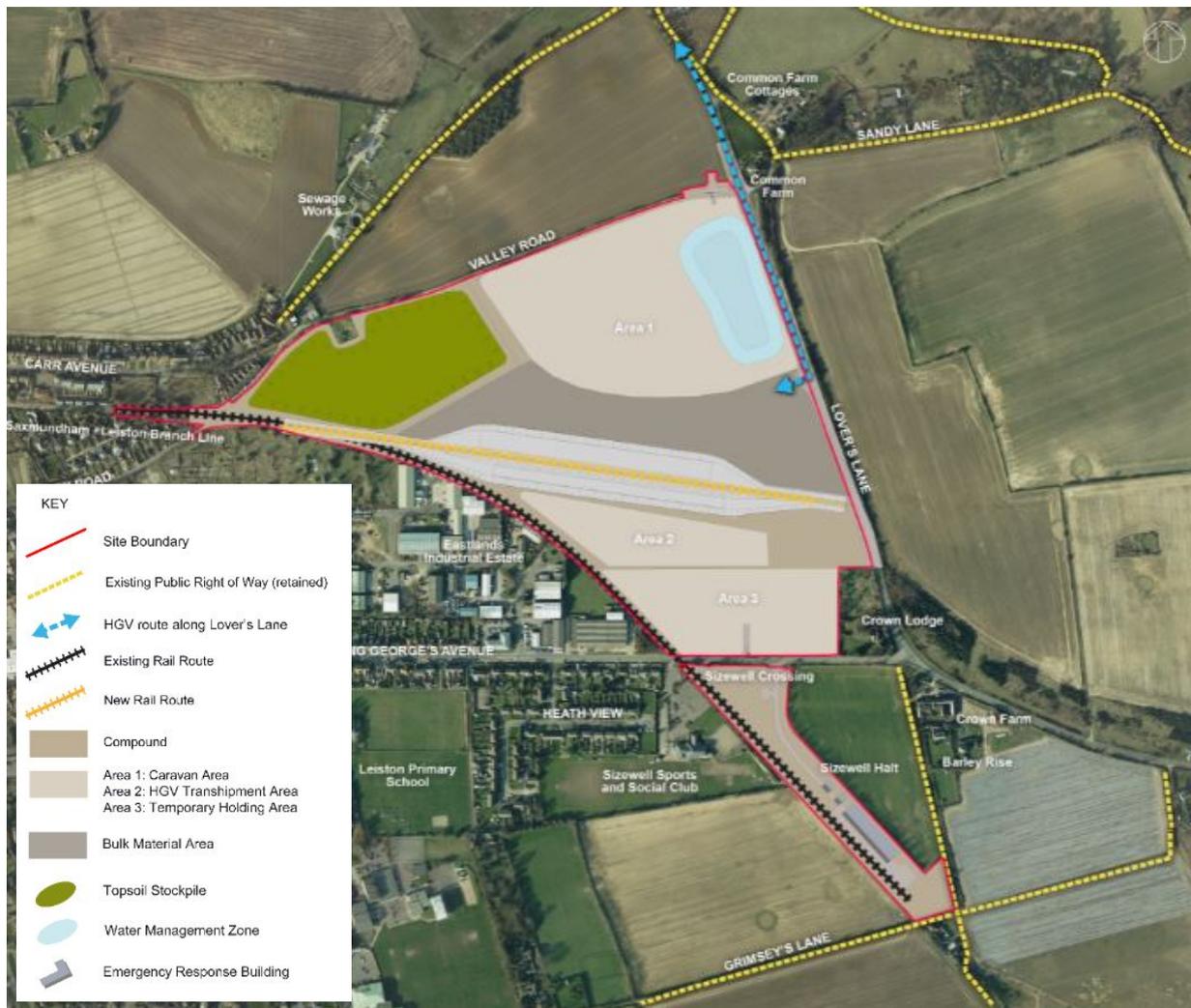
ii. New temporary rail terminal and freight laydown on LEEIE

3.4.11 The Stage 2 consultation proposals for a new rail terminal at LEEIE included:

- a railway junction east of Valley Road, from the existing Saxmundham to Leiston branch line directly into the new freight terminal;
- gantry cranes to unload containerised and bulk materials;
- small, temporary administration buildings; and
- material storage (hard standing and warehousing).

- 3.4.12 Vehicles taking material to the main development site would leave the rail terminal via a new road junction on Lover’s Lane, before travelling north along Lover’s Lane and turning right into a secondary main development site access to the west of the former District Survey Laboratory.
- 3.4.13 At Stage 2 it was stated that if the rail terminal option was discounted in favour of the green rail route, the LEEIE would be retained in order to use the land to support the Sizewell C Project construction programme. The Stage 2 consultation masterplan for the rail terminal is shown in **Plate 3.3**.

Plate 3.3: Stage 2 consultation indicative masterplan for temporary rail terminal on LEEIE



- 3.4.14 Both options would have incorporated retained and new landscaping to screen the development from key viewpoints. Further assessments of

potential environmental impacts, including noise and vibration, would follow the Stage 2 consultation.

- 3.4.15 The feedback from the Stage 2 consultation, was that 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.
- 3.4.16 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 rail terminal to the main construction area, whereas the former would not.
- 3.4.17 Respondents in Leiston, Middleton, Saxmundham, Woodbridge, Aldeburgh, Sizewell and Melton were particularly supportive of the green rail route as 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 extension away from more populated areas, many respondents hoped to reduce the intrusion that the development would bring.
- 3.4.18 While many 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-up at the level crossing;
 - the closure of Buckleswood Road – safety concerns were raised by Summerhill School in particular, 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 potential impact on the setting of Leiston Abbey;
- the environmental impact on local woodland, which is registered as an SSSI. 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 the area.

3.4.19 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 was 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, SZC Co. decided to take forward the green rail route as its preferred proposal for the main construction phase under the rail-led strategy in the Stage 3 consultation.

b) Stage 3 Consultation

3.4.20 The Stage 2 consultation feedback led SZC Co. to select the green rail route as the preferred proposal if the rail-led strategy was to be adopted. It was considered the best means of reducing construction traffic on local roads. Once operational, the green rail route would have been used for up to five freight trains per day (ten movements) under the rail-led strategy.

- 3.4.21 Prior to the availability of the green rail route, the following options were proposed at Stage 3 to allow up to two trains per day (four movements) to deliver freight by rail in the early years of construction:
- 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).
- 3.4.22 The above options fall within the main development site and are covered in greater detail in **Volume 2, Chapter 6** of the **ES**.
- 3.4.23 Under the rail-led strategy, the requirement for five freight trains per day (ten movements) would have necessitated some upgrade works to the East Suffolk line to ensure sufficient capacity for freight deliveries and passenger services to operate without impeding one another. In addition, a series of upgrades would have been required on the Saxmundham to Leiston branch line.
- 3.4.24 The green rail route would branch off the existing Saxmundham to Leiston branch line. It would run from Saxmundham Road to Buckleswood Road; Buckleswood Road to the B1122 (Abbey Road), and the B1122 (Abbey Road) into the main development site. The green rail route would have required:
- either 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 temporary level crossing on Buckleswood Road (Option 2);
 - the north-south footpath between Saxmundham Road and Abbey Lane (E-363/003/0) to be diverted across the new railway line via the footbridge or the temporary Buckleswood Road level crossing;
 - the construction of a new temporary level crossing where the green rail route would cross the B1122 (Abbey Road);
 - the north-south footpath linking Abbey Lane and Westward Ho (E363/006/0) to be diverted to cross the green rail route via the temporary 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 to cross the green rail route via the temporary level crossing on the B1122 (Abbey Road); and
- the relocation of the junction of the B1122 (Abbey Road) and Lover's Lane.

3.4.25 The proposed design for the green rail route at the Stage 3 consultation was largely the same as in the Stage 2 consultation except for the two options at Buckleswood Road, either: a new footbridge (Option 1), illustrated in **Plate 3.4**, or a new temporary level crossing on Buckleswood Road (Option 2), illustrated in **Plate 3.5**.

i. **Option 1 – New footbridge**

3.4.26 Option 1 was to stop-up part of Buckleswood Road and provide a footbridge with ramped access over the rail line to retain access for pedestrians and cyclists. This footbridge would have also allowed the existing north-south footpath between Saxmundham Road and Abbey Lane (E363/003/0) to be diverted across the railway at this location. Approaching from the south, users would have passed along the eastern side of the new rail line before crossing the footbridge. They would have then walked or cycled westwards along Buckleswood Road, which would have been stopped up to vehicular traffic, as far as the point where it meets the original footpath. The proposed arrangements at Stage 3 for this location are shown in **Plate 3.4**.

Plate 3.4: Stage 3 green rail route option 1 – new footbridge



ii. Option 2 – New level crossing

3.4.27 It was recognised that there was local concern about the closure of Buckleswood Road following the Stage 2 consultation. SZC Co. therefore proposed at the Stage 3 consultation an alternative option of providing a new temporary level crossing on Buckleswood Road, as illustrated in **Plate 3.5**.

Plate 3.5: Stage 3 green rail route option 2 – new level crossing



3.4.28 Following the completion of the Sizewell C Project, the green rail route was proposed to be removed and the land reinstated to agricultural use. Any highway that would have been diverted or stopped up as a requirement of the green rail route was proposed to be reinstated and the footbridge (if provided) and level crossings removed. The relocated junction of the B1122 (Abbey Road) and Lover’s Lane was proposed to remain in place as a permanent development.

c) Consideration of a new road bridge on Buckleswood Road

3.4.29 Consideration was also given to a road bridge option to allow vehicles on Buckleswood Road to cross the proposed rail line. However, the embankments required to raise Buckleswood Road, such that it would provide the necessary clearance to the rail line below, was considered likely to result in a significant visual impact, particularly as the close proximity to

the proposed junction of the green rail route and the Saxmundham to Leiston branch line would have restricted the possibilities for lowering the rail line in cutting within an acceptable gradient. As such, this option was not subject to consultation.

i. **Stage 3 consultation response**

3.4.30 The feedback from the Stage 3 consultation on the footbridge and level crossing options for Buckleswood Road was generally in favour of Option 2, the new level crossing.

3.4.31 Opposition to the closure of Buckleswood Road was a common feature in the consultation responses. Many considered its closure to be disruptive, inconvenient and unnecessary, highlighting that it is a key link to towns for cyclists and pedestrians in the area. Some respondents also cited that the road has to remain open for deliveries and Summerhill School raised safety concerns regarding the closure of Buckleswood Road. The school stated that Buckleswood Road was a vital route for the emergency services when travelling between the school and Ipswich Hospital.

3.4.32 The Office of Rail and Road (ORR) also made a more general case that the risk relating to a level crossing should not be moved elsewhere, such as by forcing traffic down other roads due to a road closure. This would have the potential of causing a road safety risk elsewhere in place of the general risks involved in the interface between road and rail at the site of the Buckleswood Road level crossing.

3.4.33 Those who did support Option 1 said that the proposed footbridge would be practical and offer safety benefits.

3.4.34 Respondents who supported Option 2 for the level crossing emphasised the importance they put on maintaining public access to paths and byways. There were still some who opposed Option 2, who considered that the number of level crossing must be kept to a minimum as they are dangerous and cause the railways to be slower.

3.4.35 The public consultation also raised concerns over the visual impact of the proposed footbridge connecting the two parts of Buckleswood Road intersected by the proposed railway line.

d) **Stage 4 consultation**

3.4.36 The physical proposals for the green rail route at the Stage 4 consultation were unchanged from Stage 3. The only difference was that under the integrated freight management strategy option, the green rail route would

have accommodated three freight trains per day at peak construction (six movements per day) compared to five freight trains proposed under the rail-led strategy (ten movements per day).

3.4.37 The reason for the reduction of train movements from ten under the rail-led strategy to six under the integrated strategy was due to the feasibility of operating the rail-led strategy in practice. Network Rail carried out a feasibility study of the five trains per day (ten movements) which showed that a passing loop would have been required between Melton and Campsea Ashe and a track crossover would have been required at Saxmundham. Also, to operate on the East Suffolk line during the daytime, within the timetable constraints, the freight trains would have needed to travel at up to 40 miles per hour (mph) (compared with the 20mph restrictions currently in place). The increased speed of the freight trains would have required upgrade works to 33 level crossings and the closure of 12 level crossings on the East Suffolk line for safety and operational efficiency reasons.

3.4.38 Under the integrated strategy there would have only been one daytime freight movement (running in a gap in the passenger timetable) and the five other movements would have been run along the East Suffolk line overnight. These train movements would not have been subject to the same capacity constraints because they would have run outside of the passenger service hours. For this reason, there would be no need to increase the speed above the current 20mph and the trains would travel within the current operation controls in place on the East Suffolk line. No changes to the East Suffolk line level crossings would have been necessary. Therefore, the integrated strategy presented at Stage 4 represented a more feasible option in terms of the existing constraints on the rail network.

3.4.39 Both options for Buckleswood Road were again presented at the Stage 4 consultation.

e) [Selection of the new level crossings on Buckleswood Road and the B1122 \(Abbey Road\)](#)

i. [Buckleswood Road](#)

3.4.40 At the Stage 4 consultation, respondents continued to favour the option of a level crossing at Buckleswood Road, rather than a footbridge option.

3.4.41 It was therefore decided to take the level crossing option forward to the DCO application. The level crossing was preferred as it would keep Buckleswood Road open to vehicular traffic and would better resolve the concerns expressed by respondents in terms of disruption, safety and access. The

footbridge option would also have a greater visual impact on the surrounding landscape and was therefore discounted as an option following Stage 4.

ii. [B1122 \(Abbey Road\)](#)

3.4.42 To enable the rail line to cross the B1122 (Abbey Road), a level crossing was proposed. It was recognised that even a limited number of short-duration level crossing closures had the potential to disrupt local journeys, and that the provision of new level crossings is not generally favoured by the ORR. For this reason, alternatives to a level crossing at the B1122 (Abbey Road) were considered, but were not felt to be suitable for the following reasons:

- A bridge carrying the B1122 (Abbey Road) at a high level over the rail route extension would have had a greater visual impact on the surrounding landscape, and on the setting of Leiston Abbey, than a level crossing.
- A bridge carrying the rail route extension at a high level over the B1122 (Abbey Road) would have had a greater visual impact than a level crossing, due to the shallow gradient required for a rail line, which consequently would have necessitated a long embankment.
- A tunnel taking the rail line extension beneath the B1122 (Abbey Road) would have generated substantially greater volumes of spoil than a level crossing. It would have required storage of these large volumes of spoil which would have had visual impact and land take implications.

3.4.43 In summary, whilst the level crossing would cause some short delays during periods when the road is closed to allow trains to pass, the relatively small number of train movements would mean that disruption is not expected to be significant, especially as train movements are likely to be spread throughout the day. SZC Co. held initial discussions with representatives of the ORR on this issue, who confirmed the potential acceptability of a new temporary level crossing given the more substantial implications of the alternative options above.

f) [The proposed development](#)

3.4.44 The design for the proposed green rail route is described in **Chapter 2** of this volume and illustrated in **Figures 2.1 to 2.10**. The final proposals are largely the same as those proposed at Stage 4 but with additional details on the likely design of the temporary level crossings at Buckleswood Road and the B1122 (Abbey Road), and greater detail on the landscaping and drainage proposals.

3.5 Alternative schemes and design evolution – Proposed rail improvement works

3.5.1 This section presents a description of the main alternatives considered by SZC Co. in relation to proposed rail improvement works on the existing rail infrastructure. An indication of the main reasons for SZC Co.'s choice, taking into account the environmental effects is produced as required by Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the “EIA Regulations”).

3.5.2 Specifically, this chapter provides an account of the following:

- passing loop on the East Suffolk Line;
- track crossover at Saxmundham junction; and
- works to the level crossings on the East Suffolk line, and the Saxmundham to Leiston branch line.

3.5.3 This includes details of how the choice of locations, and overall layout of the routes, have been influenced by environmental considerations, and how this has resulted in mitigation measures being incorporated within the scheme design, referred to as primary mitigation.

3.5.4 This process has been informed by:

- technical environmental assessments;
- construction requirements for the Sizewell C Project; and
- design development.

3.5.5 This chapter should be read in conjunction with **Volume 1, Chapter 5** of the **ES** which describes the strategic-level alternatives for the wider Sizewell C Project.

a) Background

3.5.6 As set out in Volume 1, Chapter 2 of the ES, SZC Co. has developed a strategy to transport a proportion of the Sizewell C Project construction materials to the main development site via the rail network.

3.5.7 The delivery of freight by rail would offer an alternative non-road option for the delivery of a variety of construction materials. This would offer flexibility for the freight strategy, and secure a freight mode that would be operational throughout the year with much less risk of weather disruption compared to other non-road options. Use of rail would further reduce the number of HGV movements on the local road network.

3.5.8 However, it was recognised that the surrounding rail network needs to be improved in order to safely accommodate the anticipated number of freight trains to the construction site during peak construction, whilst also accommodating passenger trains.

b) **History of scheme selection**

3.5.9 As part of the Stage 1 documents an initial Transport Strategy and Supporting Information report was published, assessing the existing transport conditions around Sizewell and the likely transport impacts of the construction and operation of the Sizewell C Project.

3.5.10 All trains carrying materials for the construction of the Sizewell C Project, whether serving Sizewell Halt during the early years of the programme, a new rail terminal to the north of King George's Avenue, or the rail extension route and new rail terminal in the Sizewell C main development site, would need to travel along the East Suffolk line as far as Saxmundham, and then along the existing branch line towards Leiston.

3.5.11 The initial transport report noted that due to the hourly passenger service operating on the East Suffolk line between Ipswich and Lowestoft, combined with the existing sections of single track, there would be limited available capacity on the line to accommodate the additional freight services required for the Sizewell C Project.

3.5.12 The report noted that adding a passing loop could enable a train running in one direction to wait, while another train running in the opposite direction goes past. This could increase the freight capacity of the East Suffolk line to at least the levels that might be required for the Sizewell C Project.

3.5.13 The report also noted the need for some smaller scale refurbishment of, and changes to, the existing Saxmundham to Leiston branch line, ensuring it would be able to cope with the increased rail traffic. This involved the closure or upgrading of some level crossings for safety reasons due to an increased number of freight trains using the crossings.

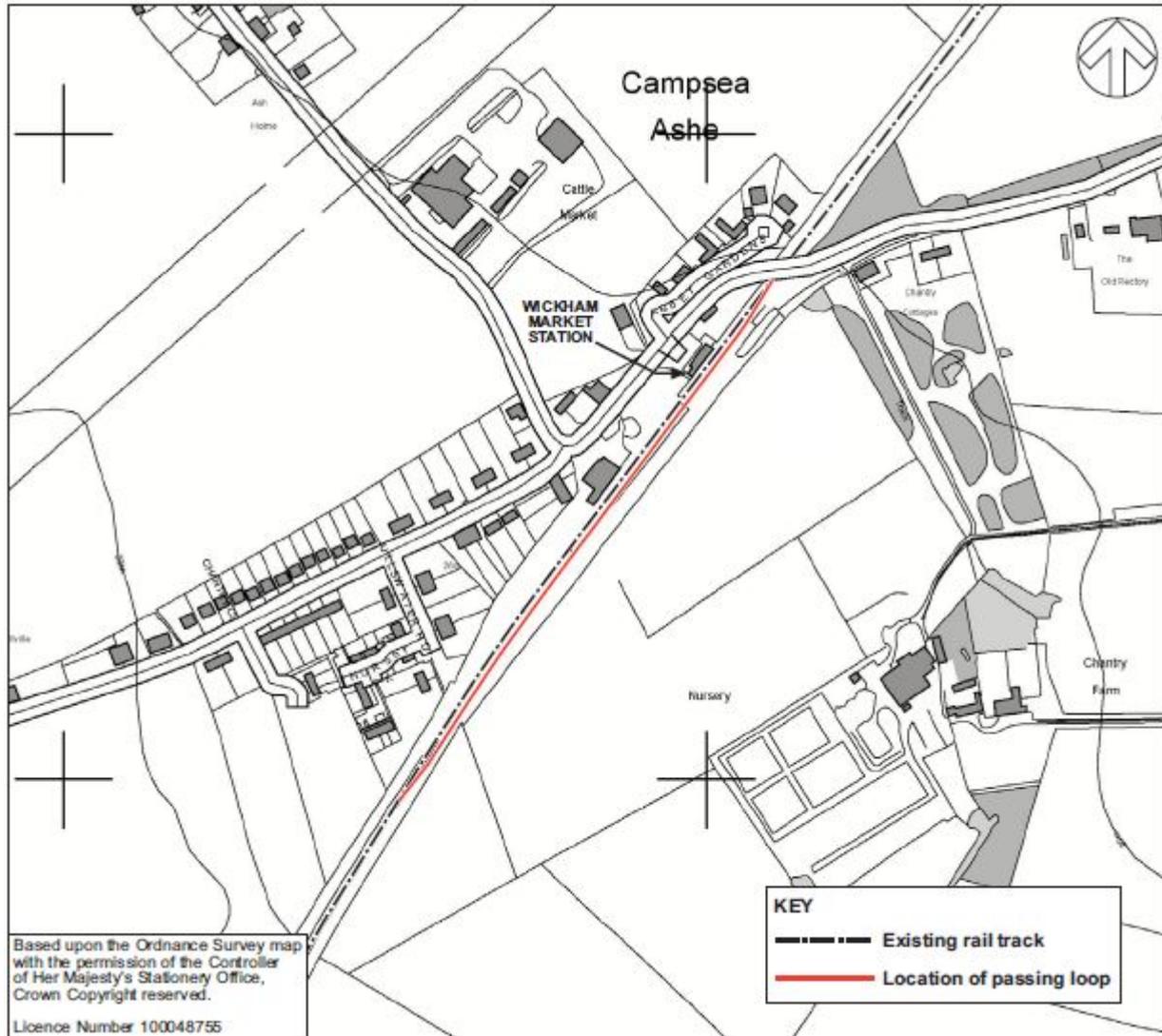
3.5.14 SZC Co. worked closely with Network Rail to establish the upgrades required to increase the track capacity in order to accommodate the increase in freight trains over and above the existing passenger timetable.

3.5.15 A Sizewell Branch Track Condition Report by Network Rail helped to shape the proposals, particularly as the designs of the rail improvement works became more detailed. The report is provided in **Appendix 1A** of **Chapter 1** of this volume.

c) [Stage 1 consultation](#)

3.5.16 At the Stage 1 consultation, a passing loop track was proposed so trains could have passed each other at Wickham Market Station, as illustrated in **Plate 3.6**. The addition of a passing loop would have enabled a train running in one direction to wait whilst a train running in the opposite direction goes past.

Plate 3.6: Stage 1 passing loop at Wickham Market Station



3.5.17 During the Stage 1 consultation, Network Rail noted that they would support a passing loop at Wickham Market. However, a number of respondents raised concerns about the proximity of a passing loop to existing housing at Campsea Ashe.

d) Stage 2 consultation

3.5.18 Following the Stage 1 consultation, SZC Co. recognised that further evaluation of the options was required in order to identify a preferred option for the passing loop.

3.5.19 Therefore, at Stage 2, the following works were proposed in addition to the passing loop:

- a track crossover at Saxmundham to provide the required capability at the point where the East Suffolk line joins the Saxmundham to Leiston branch line;
- additional signalling between Ipswich and Saxmundham to enable trains to be dispatched more efficiently along this section of line, and the upgrading or closure of 45 level crossings along the East Suffolk line; and
- upgrades to the Saxmundham to Leiston branch line (works to existing level crossings, replacement and repairs to the track and new signalling) to be in a condition to handle the freight trains required for the proposals.

3.5.20 SZC Co. stated that once a preferred option was identified, detailed design would be undertaken along with environmental assessments, and that this further work would be consulted on at the Stage 3 consultation.

e) [Stage 3 proposals for consultation](#)

3.5.21 Following on from the Stage 2 consultation, a feasibility study was carried out by Network Rail (dated June 2017), and can be found at **Appendix 1A** of **Chapter 1** of this volume of the **ES**.

3.5.22 The study confirmed that all of the infrastructure upgrades noted in the Stage 2 consultation would have been required in order to support the use of the East Suffolk line for up to five freight trains per day under the rail-led strategy. In addition, the feasibility study confirmed that 45 level crossings along the East Suffolk line would have required upgrading or closure, and six bridges would have potentially required strengthening.

i. [Passing Loop](#)

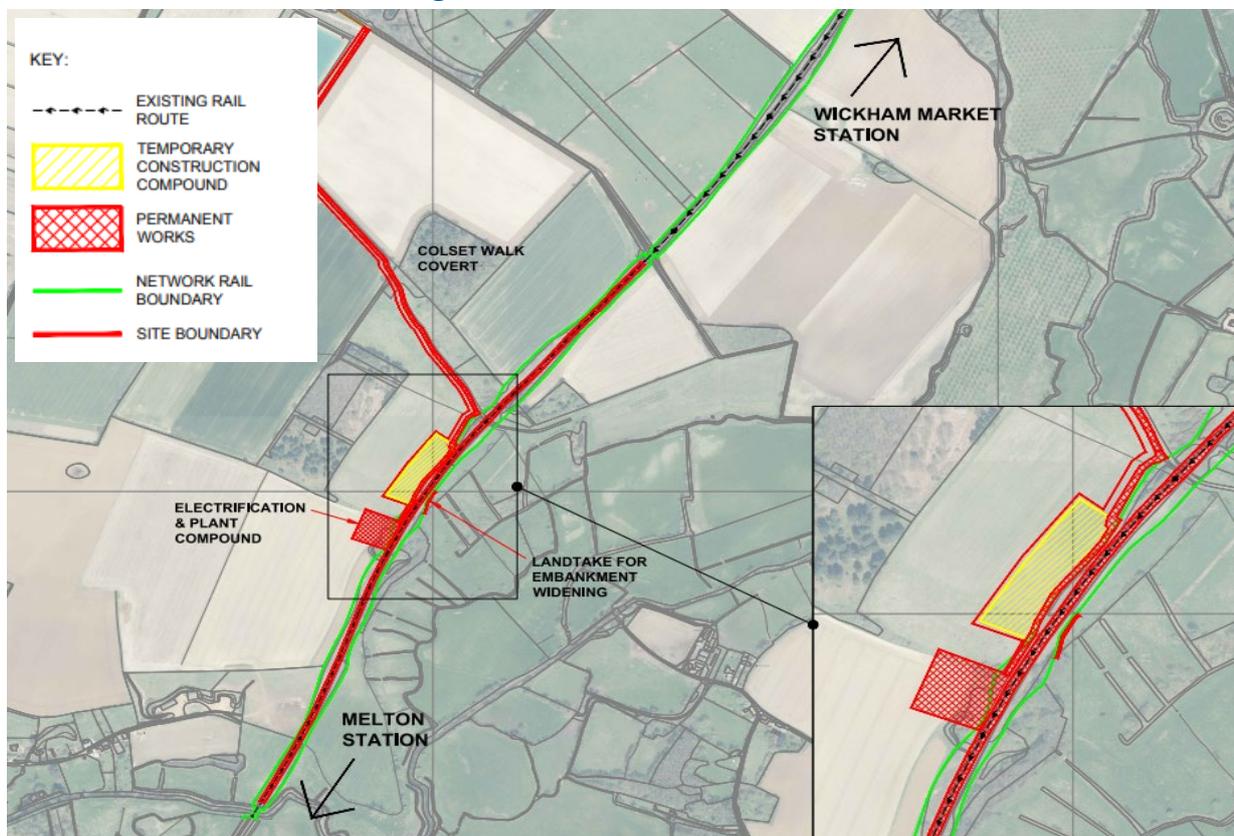
3.5.23 The Network Rail feasibility study identified three possible options for the location of the passing loop. These were:

- Option 1: Between Wickham Market Station and the Orchard level crossing (similar to the Stage 1 consultation);
- Option 2: Between the Orchard level crossing and the Pettistree level crossing; and
- Option 3: Between the Pettistree level crossing and the Uffold level crossing.

3.5.24 SZC Co. discounted Option 1 in response to the feedback received during the Stage 1 consultation where concerns were expressed about the proximity of a passing loop in this area to existing housing at Campsea Ashe. Option 2 was discounted as the track in this location is on embankment and specific complex construction methods would have been required, with additional health and safety implications.

3.5.25 Therefore, Option 3 was considered to be the preferred option for the passing loop and was put forward at the Stage 3 consultation. **Plate 3.7** illustrates the Stage 3 masterplan.

Plate 3.7: Stage 3 preferred passing loop between the Pettistree level crossing and the Uffold level crossing.



3.5.26 The proposed passing loop would have been 896m in length and would have required a permanent compact principal supply point compound and new distribution network operator connection midway along its length. Some permanent land take would have been required, subject to further design. The access road south of Loudham Hall would have been improved for the construction compound. The proposed passing loop would have required

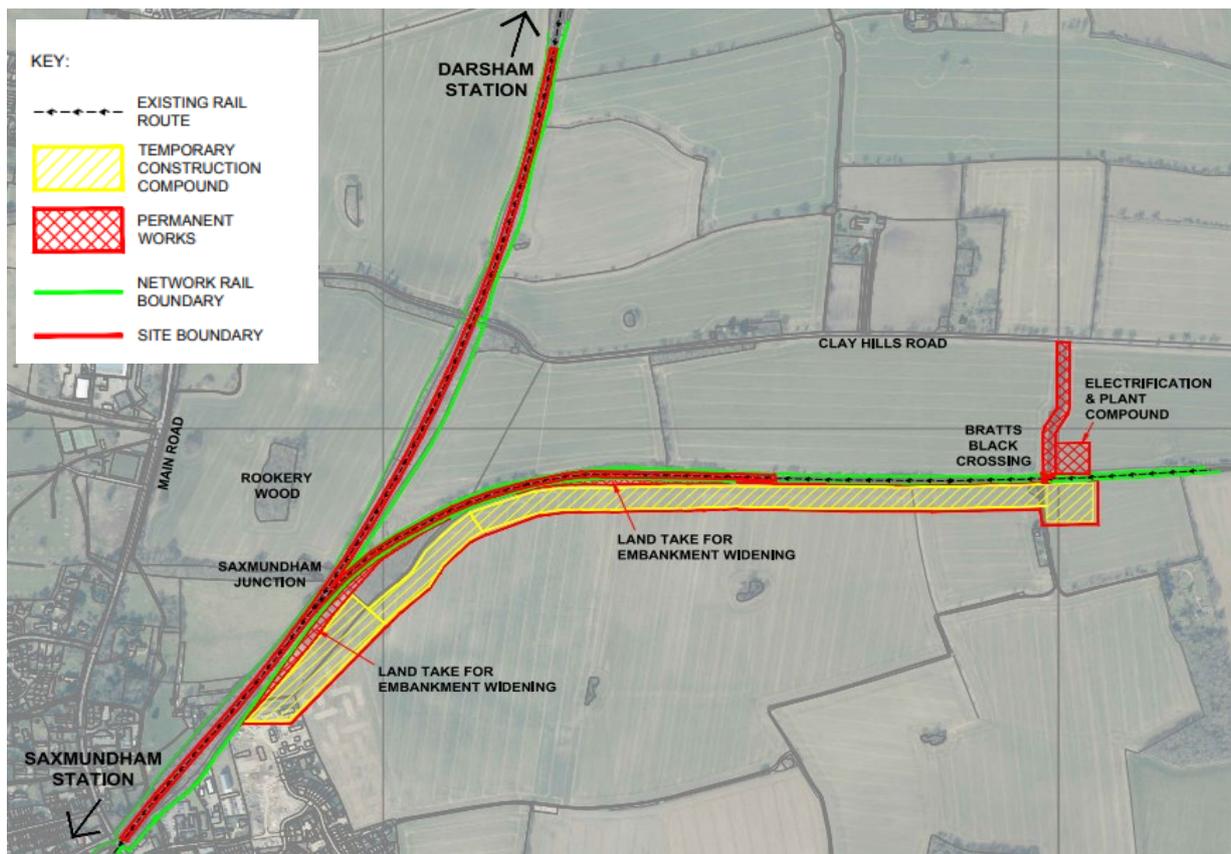
additional signals, the positions of which would have been within Network Rail’s land boundary.

ii. Junction at Saxmundham crossover

3.5.27 The Network Rail feasibility study confirmed that the current junction of the East Suffolk line with the Saxmundham to Leiston branch line would not have the necessary capacity to allow the operation of five freight trains per day. Options to improve the junction were therefore assessed by Network Rail.

3.5.28 SZC Co. put forward its preferred option at the Stage 3 consultation, as illustrated in **Plate 3.8**. The proposed junction would have increased the capacity and operational flexibility of rail deliveries between the East Suffolk line and the main development site. It would have also allowed freight trains to pass at the Saxmundham junction with neither of the trains blocking the Albion Street level crossing.

Plate 3.8: Stage 3 junction at Saxmundham crossover



iii. Level crossings

- 3.5.29 The Network Rail feasibility study found that in order to ensure a viable timetable would be maintained for the passenger service using the East Suffolk 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. The speed increase for freight trains, together with an increase in the frequency of freight trains using the line, would have raised 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 was proposed at Stage 3 to either upgrade or close (with associated PRow diversions) 45 level crossings along the East Suffolk line.
- 3.5.30 The study also noted that upgrades would have been required on nine level crossings on the Saxmundham to Leiston branch line in order to use the line for freight deliveries. No closures or diversions were proposed on the branch line.
- 3.5.31 The proposed alterations to the level crossings on the East Suffolk Line and the Saxmundham to Leiston branch line are detailed in **Tables 3.1** and **3.2**.

Table 3.1: Stage 3 - East Suffolk line level crossing proposals.

East Suffolk line proposed level crossing works				
Crossing ID	Crossing Name	Crossing type	Trains per day	Proposed change
SWC01	Westerfield Footpath.	Footpath	133	Closure and diversion.
SWC02	Westerfield Station automatic half barrier (AHB).	AHB	133	Upgrade to Manually Controlled Barriers with CCTV (MCB-CCTV).
SWC03	Lacy's Footpath.	Footpath	35	Closure and diversion.
SWC04	Stennetts 1.	Footpath	35	Closure and diversion.
SWC05	Stennetts 2.	Footpath	35	Closure and diversion.
SWC06	Gamekeepers.	Footpath	35	Closure and diversion.
SWC07	Lox Farm.	Footpath	35	Upgrade to Miniature Stop Light (MSL).
SWC08	Bealings	Automatic Barrier Crossing Locally	35	Upgrade to Manually Controlled Barrier with Obstacle Detection (MCB-OD).

East Suffolk line proposed level crossing works				
Crossing ID	Crossing Name	Crossing type	Trains per day	Proposed change
		Monitored (ABCL).		
SWC09	Martlesham	Footpath	37	Closure and diversion.
SWC10	Notcutts Nursery.	Footpath	34	Upgrade to MSL.
SWC11	Kingston Farm.	Footpath	35	Upgrade to MSL.
SWC12	Kingston Farm.	User worked crossing (UWC).	35	Upgrade to MSL.
SWC13	Jetty Avenue.	Footpath	35	Upgrade to MSL.
SWC14	Jetty Avenue.	UWC	35	Upgrade to MSL.
SWC15	Ferry Quay.	Automatic Open Crossing locally monitored with barriers (AOCL+B).	35	Upgrade to MCB-OD.
SWC16	Haywards/Tide Mill Way.	AOCL+B	35	Upgrade to MCB-OD.
SWC17	Lime Kiln Quay.	AOCL+B	35	Upgrade to MCB-OD.
SWC18	Sun Wharf.	AOCL+B	35	Upgrade to MCB-OD.
SWC19	Maltings	UWC	35	Upgrade to MSL.
SWC20	Melton Sewage.	UWC	35	Upgrade to MSL.
SWC21	Dock Lane.	Footpath	35	Upgrade to MSL.
SWC22	Dock Lane.	UWC	35	Upgrade to MSL.
SWC23	Bloss	UWC	35	Upgrade to MSL.
SWC24	Melton Station.	AOCL+B	35	Upgrade to MCB-OD.
SWC25	Ellingers	Footpath	35	Upgrade to MSL.
SWC26	Ellingers	UWC	35	Upgrade to MSL.
SWC27	Melton Bromswell.	Footpath	34	Closure and diversion.
SWC28	Ufford	ABCL	35	Upgrade to MCB-OD/CCTV.

East Suffolk line proposed level crossing works				
Crossing ID	Crossing Name	Crossing type	Trains per day	Proposed change
SWC29	Uffold	UWC	35	Upgrade to MSL.
SWC30	Pettistree	Footpath	35	Closure and diversion.
SWC31	Orchard	Footpath	35	Closure and diversion.
SWC32	Wickham Market.	Footpath	35	Closure and diversion.
SWC33	Blackstock	Footpath	35	Upgrade to MSL.
SWC34	Blackstock	UWC	35	Upgrade to MSL.
SWC35	Red House Farm.	UWC	34	Upgrade to MSL.
SWC36	Blaxhall	AOCL+B	35	Upgrade to MCB-OD.
SWC37	Blaxhall	Footpath	34	Closure and diversion.
SWC38	Beversham	ABCL	35	Upgrade to MCB-OD.
SWC39	Snape	Footpath	35	Upgrade to MSL.
SWC40	Snape	UWC	35	Upgrade to MSL.
SWC41	Farnham	Footpath	35	Upgrade to MSL.
SWC42	Benhall/Grays Lane.	Footpath	32	Upgrade to bridleway with MSL.
SWC43	Brick Kiln.	Footpath	34	Upgrade to MSL.
SWC44	Brick Kiln.	UWC	35	Upgrade to MSL.
SWC47	Saxmundham	Footpath	33	Closure and diversion.

Table 3.2: Stage 3 – Saxmundham to Leiston branch line level crossing proposals.

Saxmundham to Leiston Branch Line proposed level crossing works				
Crossing ID	Crossing name	Crossing type	Trains per day	Proposed change
SWC48	Bratts Black House.	UWC	2	Upgrade to MSL.
SWC49	Knodishall	Train crew operated crossing (TOG).	2	Upgrade to ABCL.
SWC50	West House.	TOG	2	Upgrade to ABCL.
SWC51	Snowdens	UWC	2	Upgrade to MSL.

Saxmundham to Leiston Branch Line proposed level crossing works				
Crossing ID	Crossing name	Crossing type	Trains per day	Proposed change
SWC52	Saxmundham Road	TOG	2	Upgrade to ABCL.
SWC53	Buckles Wood	Footpath	2	Upgrade to MSL.
SWC54	Summerhill	Footpath	2	Upgrade to MSL.
SWC55	Leiston	TOG	2	Upgrade to train crew operated barrier with assistance (TOB).
SWC56	Sizewell	TOG	2	Upgrade to TOB.

3.5.32 SZC Co. assessed the preferred options for the passing loop, the Saxmundham junction crossover, and the works to the level crossings against the following considerations in order to identify a preferred scheme for the Stage 3 consultation:

- consultation responses;
- environmental considerations;
- construction and operational requirements; and
- planning policy.

3.5.33 Of the above four considerations, the environmental considerations were the most important in informing selection and are set out in the sections below. Please refer to the **Consultation Report** (Doc Ref. 5.1), and the **Site Selection Report**, appended to the **Planning Statement** (Doc Ref. 8.4), for further details regarding how consultation, construction and operational requirements, and planning policy influenced the scheme selection.

3.5.34 A range of different environmental considerations were relevant to the rail options presented at the Stage 3 consultation. The principal considerations related to:

- terrestrial ecology;
- noise and vibration;
- landscape and visual; and

- historic environment.

iv. Terrestrial ecology

- 3.5.35 The ecological effects associated with the passing loop and track crossover at Saxmundham junction would have been similar. The preliminary assessments noted that effects on great crested newts and roosting bats were possible, as waterbodies and habitats within close proximity to both the passing loop and the track crossover could have supported these species.
- 3.5.36 The assessments recommend an extended Phase 1 habitat survey to be undertaken should these rail improvements have proceeded in order to identify any ecological constraints such as the presence of legally protected species, particularly bats and great crested newts.
- 3.5.37 The preliminary assessments considered that the works required to the level crossings would be relatively minor, and therefore significant effects were considered unlikely in these locations.

v. Noise and vibration

- 3.5.38 SZC Co. undertook a preliminary assessment of the potential noise and vibration impacts of freight train movements for Stage 3.
- 3.5.39 On the East Suffolk line, where trains would have waited at the passing loop, train engines would have idled whilst waiting. Given the distances between the train and the closest noise sensitive receptors (in East Lane, and Low Road, Ufford), no significant noise or vibration impact would have been likely. Initial calculations indicated that vibration would not have been significant but that the ground borne noise level may have been significant for some premises within 20m from the line, depending on ground conditions and coupling between the structure and the ground. There would have been approximately 100 premises within this distance.
- 3.5.40 However, the preliminary assessments noted that speed reductions and track isolation could reduce the effect of ground borne noise on affected dwellings within 20m of the track.
- 3.5.41 In relation to the level crossings, the preliminary assessment noted that a significant effect would have been unlikely during operation of the level crossing alarms, provided a premises would not be within 10m of an alarm. The assessment stated that it should be possible to site all such alarms at a distance greater than this from any noise sensitive premises, and thus, it is unlikely that there would have been significant adverse impacts from the operation of the proposed level crossings.

NOT PROTECTIVELY MARKED

vi. Landscape and visual

- 3.5.42 The preliminary assessments noted that, for the operation of both the passing loop and track crossover at Saxmundham junction, it was unlikely that there would have been any additional effect on landscape character to that experienced during construction. Given the localised effect of the proposals and the existing presence of rail infrastructure within the sites, these effects were considered unlikely to be significant.
- 3.5.43 It was also noted that, given the proposals would be relatively minor features in locations where rail infrastructure is already present, any significant visual effects would have been unlikely as a result of the proposed improvement works.
- 3.5.44 The preliminary assessments considered that the works required to the level crossings would have been relatively minor and therefore significant effects were considered unlikely in these locations.

vii. Historic environment

- 3.5.45 The track crossover would have been located immediately to the west of the Saxmundham conservation area, and a small number of listed buildings would have been located close to the Stage 3 proposals, including the Grade II listed Lynwood House (LB1365994) and the Grade II* listed The Beeches (LB1365996). There would have been no designated heritage assets within 500m of the passing loop, which would have been located between Ufford and Eyke.
- 3.5.46 The preliminary assessments concluded that the passing loop and track crossover would have had a limited effect on the setting of heritage assets and would not have given rise to lasting changes to their setting.
- 3.5.47 The assessments noted that the works to the level crossings would be limited and confined to the existing rail and highway boundaries. Due to the limited nature of the works the assessment concludes that there is limited potential for disturbance of archaeological remains, and it is anticipated that no significant adverse effects would arise from the proposed works.

viii. Consultation responses

- 3.5.48 In consultation with Network Rail, Suffolk County Council (SCC) and Suffolk Coastal District Council (now part of East Suffolk Council), the proposed upgrades to the East Suffolk line were welcomed, including the upgrading of level crossings, the new passing loop and the track crossover. However, further clarification was sought on whether the location of the passing loop

presented the greatest legacy benefit for achieving additional future passenger services along the line.

- 3.5.49 Many respondents supported the proposed upgrades to level crossings along the East Suffolk line, with some saying that safety must be a priority. The support for the proposed works were because they considered them necessary to implement a rail-led strategy, which was generally favoured.
- 3.5.50 There was also opposition to the closure of level crossings and PRowS on the East Suffolk line, with some arguing that public walking access to the countryside was extremely important and would be restricted by the closures. Some argued that closures would not be necessary for the rail-led strategy to work.
- 3.5.51 Many respondents specifically opposed the closure of the Melton-Bromeswell level crossing, arguing that inaccuracies in the consultation documents understated the usage of this footpath. They said that it was already very safe, and provided an essential link between small communities which supported local businesses.
- 3.5.52 These respondents considered that the proposed alternatives did not meet the needs of local users, and that they were either unsafe, or impractical.
- 3.5.53 A few of these respondents argued that it would be more cost-effective to upgrade the current crossing alarm systems at Melton-Bromeswell than to close it and open an alternative.

f) **Stage 4 consultation**

- 3.5.54 At the Stage 4 consultation, the proposals for the rail improvement works remained the same as at Stage 3 with no changes proposed to the physical works.
- 3.5.55 However, Stage 4 introduced the integrated freight management strategy, which would accommodate three freight trains per day at peak construction (six movements per day) on the Saxmundham to Leiston branch line and green rail route compared to the five freight trains (ten movements) proposed under the rail-led strategy.
- 3.5.56 The integrated strategy combined features of both the rail-led and road-led strategies consulted on at Stage 3. It included the Sizewell link road and freight management facility from the road-led strategy and the green rail route and improvements to the Saxmundham to Leiston branch line, including level crossing upgrades, from the rail-led strategy. The improvements to the East

Suffolk line and associated level crossings were not included under the integrated strategy.

3.5.57 The need to consider this additional integrated strategy arose from a concern that Network Rail may not be able to deliver the extent of improvement works necessary to the East Suffolk line to a timescale that would fit in with SZC Co.'s programme for the Sizewell C Project.

3.5.58 The only change to the proposed improvements to the Saxmundham to Leiston branch line at Stage 4 was that the entirety of the branch line, and each of the level crossings that would be upgraded, were included within the application red line boundary.

3.5.59 At the Stage 3 consultation it was assumed that Network Rail would undertake the track repairs and replacement works on the branch line. The inclusion of the Saxmundham to Leiston branch line within the site boundary provided the flexibility for these works to be undertaken either by Network Rail or SZC Co.

3.5.60 Additional highway land, Network Rail land and third party land was included at five of the level crossings on the Saxmundham to Leiston branch line, considered necessary to undertake the upgrade works at those level crossings. The crossings on the branch line were:

- Knodishall;
- West House;
- Saxmundham Road;
- Leiston; and
- Sizewell.

3.5.61 The other four crossings at Bratts Black House, Snowdens, Buckles Wood and Summerhill, which would require minor works on Network Rail land, were also included in the site boundary.

i. Preliminary Environmental Information

3.5.62 A preliminary environmental assessment of the design changes presented as part of the Stage 4 consultation was undertaken. It included consideration of the changes to baseline conditions (such as potential additional receptors

NOT PROTECTIVELY MARKED

affected and any changes to the extent of the study area), the assessment of effects, and mitigation required.

3.5.63 As a result, the topics detailed in **Table 3.3** were updated from the Stage 3 Preliminary Environmental Information (PEI). The proposed changes at the Stage 4 consultation did not alter the baseline, mitigation proposals or the residual effects identified for the construction and operational phases presented in the Stage 3 PEI for any of the other environmental assessment topic areas.

Table 3.3: Stage 4 – Summary of changes to the Stage 3 PEI

Topic	Changes to receptors and/or baseline environment	Updated environmental assessment
Terrestrial ecology and ornithology.	Approximately 11.8 hectares (ha) of additional land would be required following the extension of the site boundary to include the Saxmundham to Leiston branch line (and level crossings). This is predominantly comprised of existing rail infrastructure. Habitat alongside the branch line is likely to comprise of scrub, rough grassland, tall ruderal species and linear belts of trees. The section of railway line also crosses the Hundred River.	Mitigation presented in the Stage 3 PEI for the rail improvement works will be applied as appropriate. With this mitigation in place, it is considered that there are no likely significant effects, as any habitat loss would be limited to that alongside the branch line. However, further assessment will be undertaken for the EIA. If the potential for impacts on protected species is identified, further surveys will be undertaken, subject to access.
Terrestrial historic environment.	No designated or non-designated assets lie within the extended site boundary for Saxmundham to Leiston branch line and level crossing improvements. The Saxmundham Conservation Area and associated listed buildings within the core of Saxmundham lie approximately 250m to the south of the site boundary. This is included as a new receptor, since the Stage 3 PEI, at the request of Historic England.	During construction there would be limited potential for disturbance to archaeological remains as a result of the limited scope of works to improve the existing Saxmundham to Leiston branch line. There is no overall change to the assessment presented in the Stage 3 PEI. Whilst construction activities may be visible from the listed buildings and conservation area, no likely significant effects on these assets have been identified. During operation, the rail movements to the north of Saxmundham may be visible from the listed buildings and conservation area; however, no significant effects are anticipated.
Geology and land quality.	The site boundary has been extended to include the existing Saxmundham to Leiston branch line (and level crossings). This existing rail infrastructure is likely to introduce new sources of contamination within the site	The works to improve the Saxmundham to Leiston branch line would entail the replacement of existing ballast, and replacement of concrete sleepers and rail. Whilst there would be limited earthworks, there is the potential for the

NOT PROTECTIVELY MARKED

Topic	Changes to receptors and/or baseline environment	Updated environmental assessment
	through contaminated ballast and industrial uses adjacent to the Saxmundham to Leiston branch line.	mobilisation of contamination sources along the Saxmundham to Leiston branch line associated with spills and leaks cannot be ruled out. However, with mitigation in place in accordance with good practice construction management measures, the physical effects and those which may arise from contamination, are not likely to be significant.
Groundwater and surface water.	The extension of the site boundary would include a crossing of the Hundred River by the existing Saxmundham to Leiston branch line.	Works to improve the Saxmundham to Leiston branch line would be limited, and no significant effects have been identified as a result of the proposals.
Flood Risk.	The extension of the site boundary would include a crossing of the Hundred River by the existing Saxmundham to Leiston branch line. An additional area of high surface water flood risk would be introduced as a result of the amendments to the site boundary; this is the area of the branch line to the east of Saxmundham Crossover. The access route off Clayhill Road has areas of low surface water flood risk; however, it is on the boundary of an area of high surface water flood risk.	Any surface water flood risk to the Saxmundham to Leiston branch line would be mitigated through the standard track design. Works to improve the Saxmundham to Leiston branch line would be limited and with embedded mitigation no significant effects have been identified as a result of the proposals.

3.5.64 Given the proposed changes at Stage 4 did not raise any significant effects in the updated PEI in relation to the Saxmundham to Leiston branch line, it was considered that the inclusion of the branch line in the development boundary should be carried forward to the DCO application.

ii. Consultation responses

3.5.65 The proposed integrated strategy was not commented on particularly frequently in the Stage 4 consultation responses, with comments primarily focussed on either the road or rail-led strategies. However, some respondents expressed support for the integrated strategy, most commonly comparing it favourably to the road-led strategy as reducing road use.

3.5.66 Some respondents suggested it was the best of the three strategies as it would reduce the number of trains passing close to homes, whilst reducing cars and HGVs on the roads to more manageable levels.

3.5.67 Given the deliverability concerns of the rail-led strategy, due to the reliance on Network Rail to work to SZC Co.'s preferred timescale, it was considered that the integrated strategy would be the most suitable in delivering freight by rail. It was therefore taken forward to the DCO, which include the Saxmundham to Leiston branch line improvements as well as the green rail route.

g) The proposed development

3.5.68 The design for the proposed rail improvements to the Saxmundham to Leiston branch line are described in **Chapter 2** of this volume and illustrated in **Figure 2.11**.

3.5.69 The integrated freight management strategy was taken forward to the DCO, meaning that the Saxmundham to Leiston branch line upgrades (and the green rail route) are proposed in order to carry up to three trains (six movements) per day. The proposals for the East Suffolk line do not form part of the rail proposals in the DCO.

3.5.70 The final proposals for the Saxmundham to Leiston branch line are largely the same as those proposed at Stage 4, including the replacement of the existing track and level crossing upgrades.

3.5.71 There are some minor changes to the proposals as follows:

- The site boundary has been slightly extended to the south of the junction with the East Suffolk line to allow for a new track crossover to be installed. This would affect Network Rail land only; and
- Freight deliveries by rail in the early years would be made to a temporary rail terminal at LEEIE. As such, trains would not need to access Sizewell Halt or pass the Sizewell level crossing on King George's Avenue. Therefore, the Sizewell level crossing does not require any upgrades and has been removed from the proposed rail improvements.

References

- Ref 3.1 Parliament of the United Kingdom. The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (London, 2017).