



The Sizewell C Project

6.6 Volume 5 Two Village Bypass Chapter 3 Alternatives and Design Evolution

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Contents

3	Alternatives and Design Evolution	1
3.1	Introduction	1
3.2	Alternative options	1
3.3	Alternative designs and design evolution.....	13
	References	23

Tables

None provided.

Plates

Plate 3.1:	Stage 1 – Farnham Bypass Option.....	3
Plate 3.2:	Stage 1 – Indicative Farnham bend alteration.	4
Plate 3.3:	Stage 2 – Masterplan for Option 2: Farnham bend road widening.	7
Plate 3.4:	Stage 2 – Masterplan for Option 3A: Farnham bypass.....	8
Plate 3.5:	Stage 2 – Masterplan for Option 3B: Farnham bypass.....	9
Plate 3.6:	Stage 2 – Masterplan for Option 4: Stratford St Andrew and Farnham bypass. ...	10
Plate 3.7:	Stage 3 – Two Village Bypass Masterplan.	15
Plate 3.8:	Stage 4 – Two Village Bypass Masterplan.	18

Figures

None provided.

Appendices

None provided.

3 Alternatives and Design Evolution

3.1 Introduction

3.1.1 In accordance with Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment (EIA)) Regulations 2017 (hereafter referred to as the “EIA Regulations”) (Ref 3.1), this chapter of the **Environmental Statement (ES)** (Doc Ref. Book 6) presents a description of the main alternatives considered in relation to the proposed two village bypass (herein referred to as the ‘proposed development’).

3.1.2 The site selection and design evolution process for the proposed development has been iterative and informed by consultation with statutory consultees and the public.

3.1.3 This chapter provides details of the supporting studies and assessment that have informed the design choices for the proposed development, taking into account potential environmental, transport and socio-economic impacts, where relevant. In summary, this includes the following:

- alternative options considered for the proposed development; and
- alternative layouts, including sizing, land uses and landscaping.

3.1.4 This includes details of how the choice of option and layout have been influenced by engineering, environmental, socio-economic and transport considerations.

3.1.5 This chapter should be read in conjunction with **Volume 1, Chapter 4** of the **ES**, the **Transport Assessment** (Doc Ref. 8.5), the **Consultation Report** (Doc Ref. 5.1), and the **Planning Statement** (Doc Ref. 8.4), which describe the strategic site selection process for the two village bypass. These documents also provide further detail on how construction and operational requirements, consultation and planning policy influenced site selection.

3.2 Alternative options

a) Background

3.2.1 The A12 between Ipswich and Lowestoft would be the main route corridor for Sizewell C construction traffic on the highway network. Early traffic modelling identified that, whilst the majority of the A12 would not experience congestion, the section of the A12 through Farnham may experience potential traffic impacts. Other areas which may experience potential traffic impacts are discussed in **Volumes 6 and 7** of the **ES**.

3.2.2 There has been a long-standing concern from residents regarding the existing traffic levels through the four villages of Farnham, Stratford St. Andrew, Little Glemham and Marlesford. The road narrows, and has a tight bend at Farnham, which reduces capacity and creates a potential safety concern, particularly when two large vehicles are passing at once. The proposed Sizewell C Project would increase construction traffic levels along this section of the A12, and there are also potential impacts on residential amenity within the village of Farnham due to the increase in traffic flows and the proximity of traffic to the frontage of properties.

3.2.3 Having identified the need to mitigate the impacts of traffic travelling to, and from, the main development site on the section of the A12 in Farnham, further consideration was given to the potential options to alleviate traffic impacts. Alternative options were identified from a combination of desk-based studies, observation of driver behaviour, and through consultation with Suffolk Coastal District Council (SCDC), now part of East Suffolk Council (ESC), and Suffolk County Council (SCC). These alternative options were consulted on during Stages 1 and 2.

3.2.4 This is summarised in the following section.

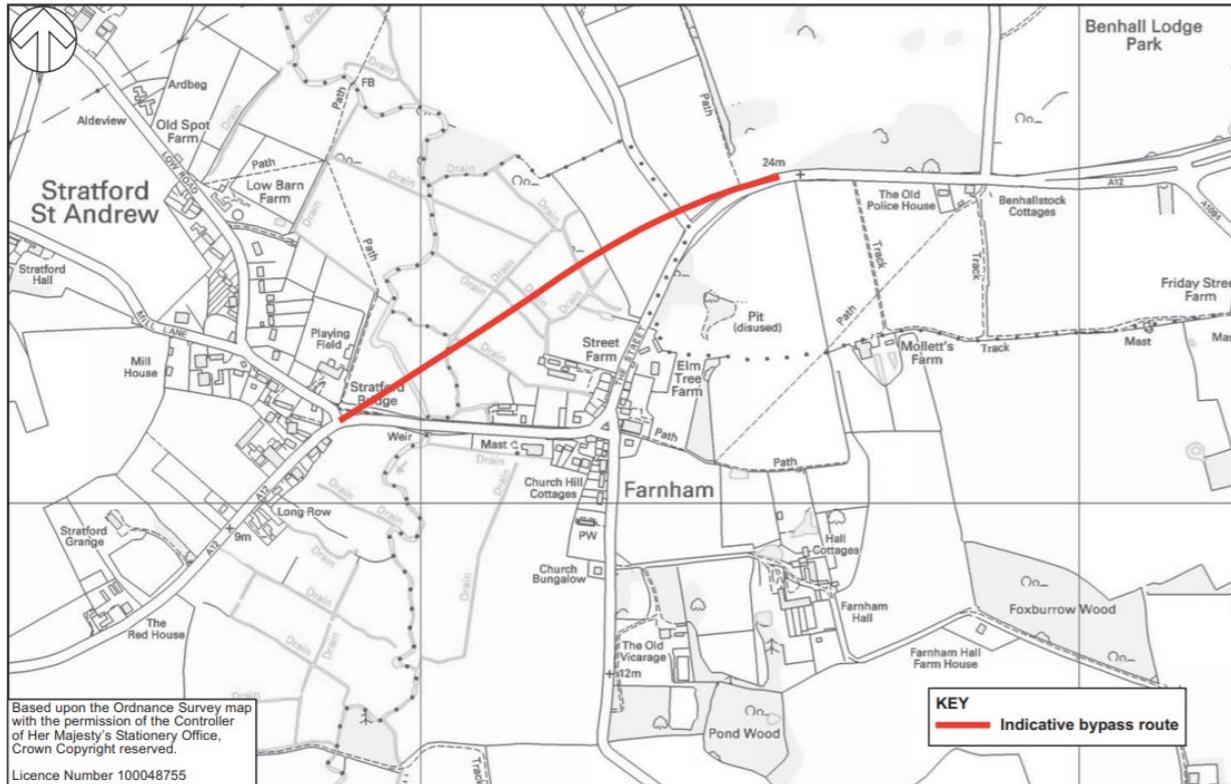
b) **Stage 1 consultation**

3.2.5 The three options presented at the Stage 1 consultation were:

- Option 1: provision of bypass to the north of Farnham (between Farnham and Stratford St. Andrew).
- Option 2: widening the road at Farnham bend.
- Option 3: provision of heavy goods vehicles (HGV) controls at Farnham.

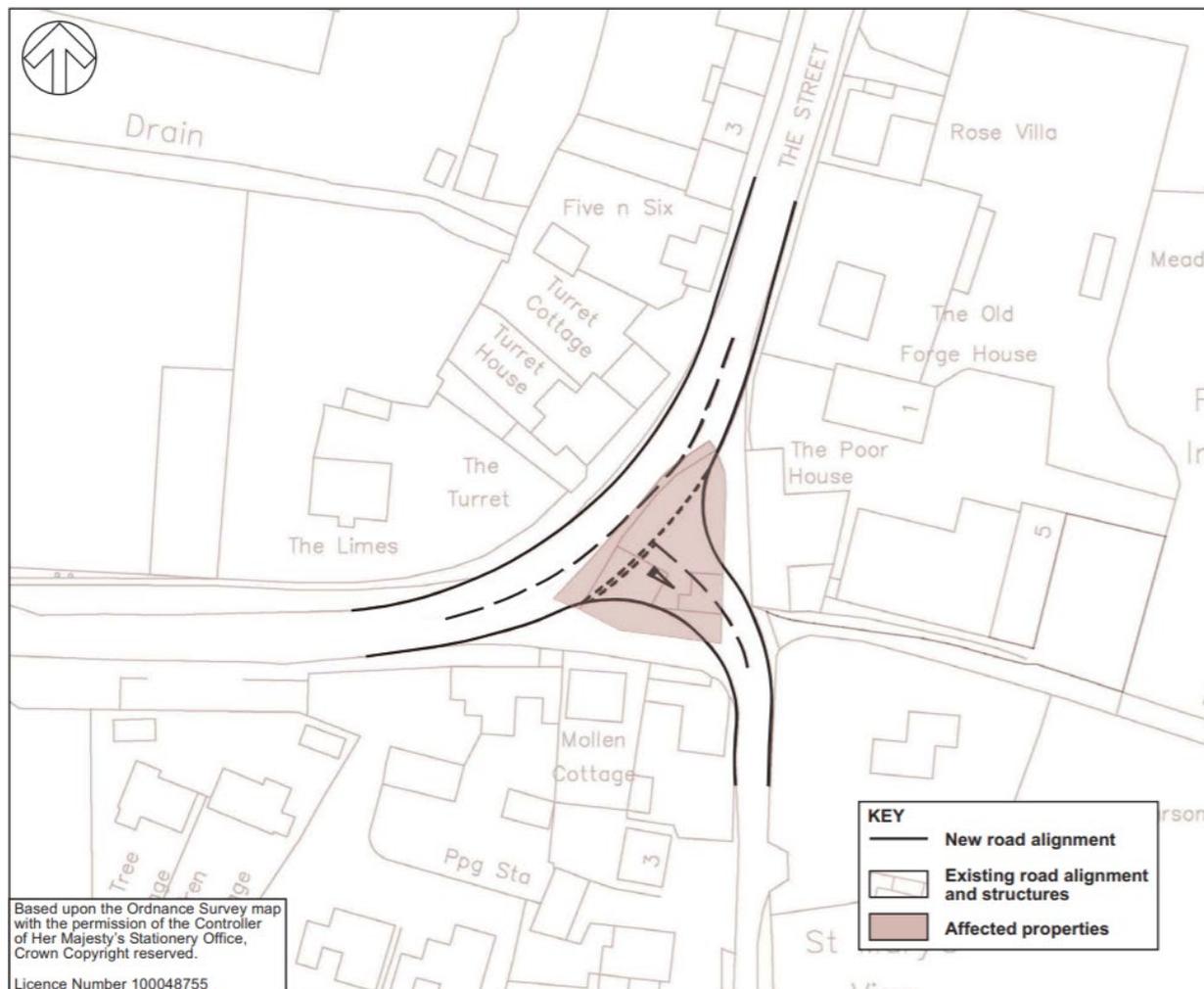
3.2.6 Option 1 proposed a bypass of Farnham that was part of a route originally detailed in a technical study undertaken by SCC in 2006 (A12 Four Villages Study) (Ref. 3.2), running to the north-west of Farnham (see **Plate 3.1**). The bypass proposed was a single carriageway approximately 1 kilometre (km) in length.

Plate 3.1: Stage 1 – Farnham Bypass Option.



3.2.7 Option 2 proposed to widen the existing bend to reduce potential congestion at peak times and remove safety concerns regarding the narrowness of the A12 at this point (referred to as the 'Farnham Bend') (see **Plate 3.2**). This option would have avoided the construction of a new road through agricultural land and open countryside. However, it would have required the demolition of a Grade II listed building known as 'Post Office Stores'.

Plate 3.2: Stage 1 – Indicative Farnham bend alteration.



3.2.8 Option 3 proposed a form of traffic control system to prevent more than one HGV passing through the bend at any one time.

3.2.9 The analysis of environmental, transport and socio-economic impacts associated with the three options is set out below.

i. Environmental considerations

3.2.10 Option 1 would have crossed agricultural land to the north-west of Street Farm, parts of which are in a flood plain. The route would have crossed the River Alde and various drainage ditches, and passed through, or close to, areas of habitat which may have supported protected or important species. Option 1 was also considered to have had the potential to affect the setting of Benhall Lodge Park (a medieval settlement).

- 3.2.11 The proximity of the bypass to the Riverside Centre, and adjacent amenity land used by the local community, was also considered likely to impact on the amenity of users. However, properties close or adjacent to the A12 in Farnham would likely have benefitted from a reduction in amenity impacts due to the reduction in traffic flows through the village.
- 3.2.12 Option 2 would have reduced the potential for traffic congestion at peak times, removing safety concerns associated with the narrowness of the bend. However, it would have required the demolition of a Grade II listed building. Option 2 would have also resulted in HGV movements associated with the construction of the Sizewell C Project passing through Farnham together with existing traffic, potentially impacting on residential amenity for properties adjacent to the road.
- 3.2.13 Option 3 was noted to have the fewest potential impacts on landscape and visual, ecology and flood risk as there would be no physical alterations to the road layout apart from installing traffic signals and signage. As with Option 2, Option 3 would have also resulted in Sizewell C construction traffic (including HGV movements) passing through Farnham, together with existing traffic, potentially impacting on residential amenity for properties adjacent to the road.
- 3.2.14 Option 3 would have had fewer direct impacts on the wider area. However, only Option 1 would have reduced the potential impacts on amenity and traffic movements within the village. Only Option 2 would have required the demolition of properties.

ii. Transport

- 3.2.15 Option 1 would have removed existing capacity and safety concerns associated with the current bend at Farnham, improved traffic flow and reduced the risk of accidents. This option presented a long-term solution to traffic issues at Farnham.
- 3.2.16 It was considered that Option 2 would have been effective in addressing the safety concerns associated with the bend in Farnham and that it would have improved traffic flow to some degree. However, it would have still resulted in HGV movements associated with the construction of the Sizewell C Project passing through Farnham, adding to existing traffic in the village.
- 3.2.17 Option 3, an HGV traffic control system, would have been relatively effective in reducing safety risks at the Farnham bend, and improving the ability of pedestrians and other road users to cross the A12 in this area. However, this option would still have resulted in HGV movements associated with the construction of the Sizewell C Project, and existing traffic, passing through Farnham and could exacerbate the potential for congestion.

iii. Socio-economics

- 3.2.18 Option 1 was considered to offer a number of socio-economic benefits during construction, as it would likely have required the largest workforce. This option would have had the potential to bring increased business to the petrol station, farm shop, cafés, and bed and breakfasts located nearby.
- 3.2.19 It was considered that Option 2 may have generated some increased business activity in the surrounding area, although to a notably lesser extent compared to Option 1. Whilst there would have been workers associated with the demolition of Post Office Stores, the number of construction workers overall would have still been less than those required for Option 1.
- 3.2.20 Option 3 was considered the least likely to generate socio-economic benefits due to its limited intervention.
- 3.2.21 Option 1 was considered to present the most potential for socio-economic benefits; this was due to the greater size and benefits of a larger workforce which may have increased spending in the local area.

iv. Conclusion

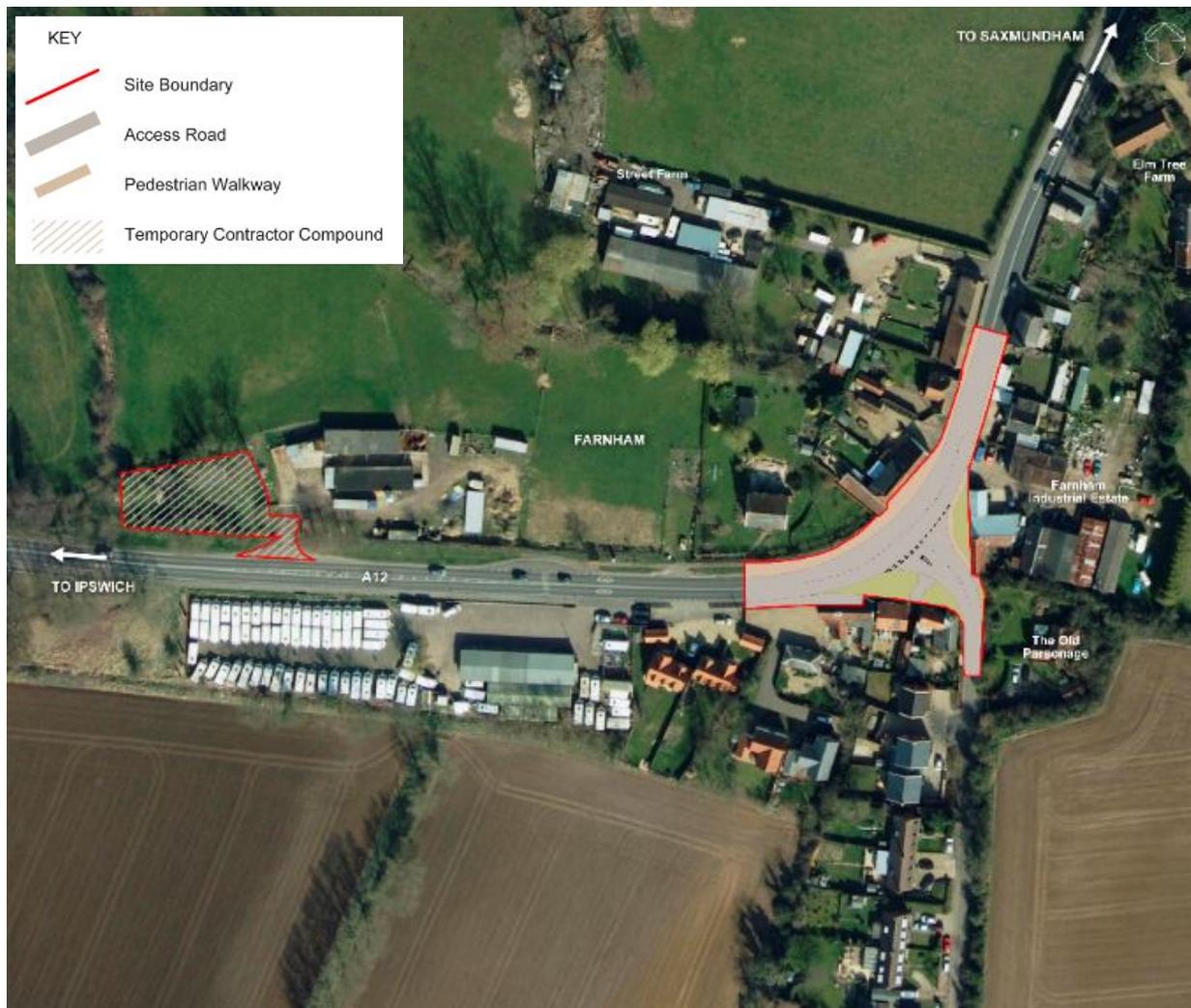
- 3.2.22 Overall, it was considered by SZC Co. that Option 1 (Farnham bypass) would be the most effective in reducing potential traffic impacts, and impacts on residential amenity when compared to Options 2 and 3. Option 1 would reduce traffic through Farnham, and avoid construction traffic associated with Sizewell C passing through the village once operational. This would in turn have improved the character, noise levels, and secluded feel of the village.
- 3.2.23 Option 1 was also favoured by respondents who generally considered that the bypass would represent a long-term solution to traffic issues at Farnham. However, as the works in Option 1 would be more extensive, it would likely have greater impacts on the wider landscape character and ecology than Option 3.
- 3.2.24 Many respondents cited that Option 1 would be most effective at improving residential amenity given it would take traffic out of Farnham village. However, concerns were raised regarding the potential environmental effects, and proximity of the bypass to the Riverside Centre, and adjacent amenity land used by the local community.
- 3.2.25 Respondents did also request that SZC Co. look at the possibility of a more extensive four village bypass for the villages of Farnham, Stratford St. Andrew, Little Glenham and Marlesford. However, analysis suggested that congestion was only likely within Farnham due to the narrowing of the road at the Farnham bend. Therefore, SZC Co. concluded that the impact of Sizewell C traffic would not be sufficient to justify a bypass of all four villages.

c) Stage 2 consultation

3.2.26 Following the conclusion of the Stage 1 consultation consideration was given to the responses raised by consultees including the highway and planning authorities and other statutory bodies. Further consultation was undertaken at Stage 2, where four options were presented:

- Option 1: no change to the existing road layout (i.e. the application for development consent would not propose any physical interventions).
- Option 2: road widening at the Farnham bend, involving the demolition of properties (see **Plate 3.3**).

Plate 3.3: Stage 2 – Masterplan for Option 2: Farnham bend road widening.



- Option 3: a Farnham bypass (also known as the one village bypass). The alignment of the bypass was amended following Stage 1 to move the road further away from the Riverside Centre as much as possible to reduce the impact of the bypass on the community land. There were two designs presented in Stage 2 for this option which were similar save for the proposed arrangements for connecting with the existing A12 leading into Farnham from the north-eastern end at Sweffling Road (Option 3A), and from the south-western end of Low Road/Great Glemham Road (Option 3B) (see **Plates 3.4** and **3.5**). Both options would have included a pedestrian/cycle link between Farnham and Stratford St. Andrew, passing under the bypass at the River Alde.

Plate 3.4: Stage 2 – Masterplan for Option 3A: Farnham bypass.

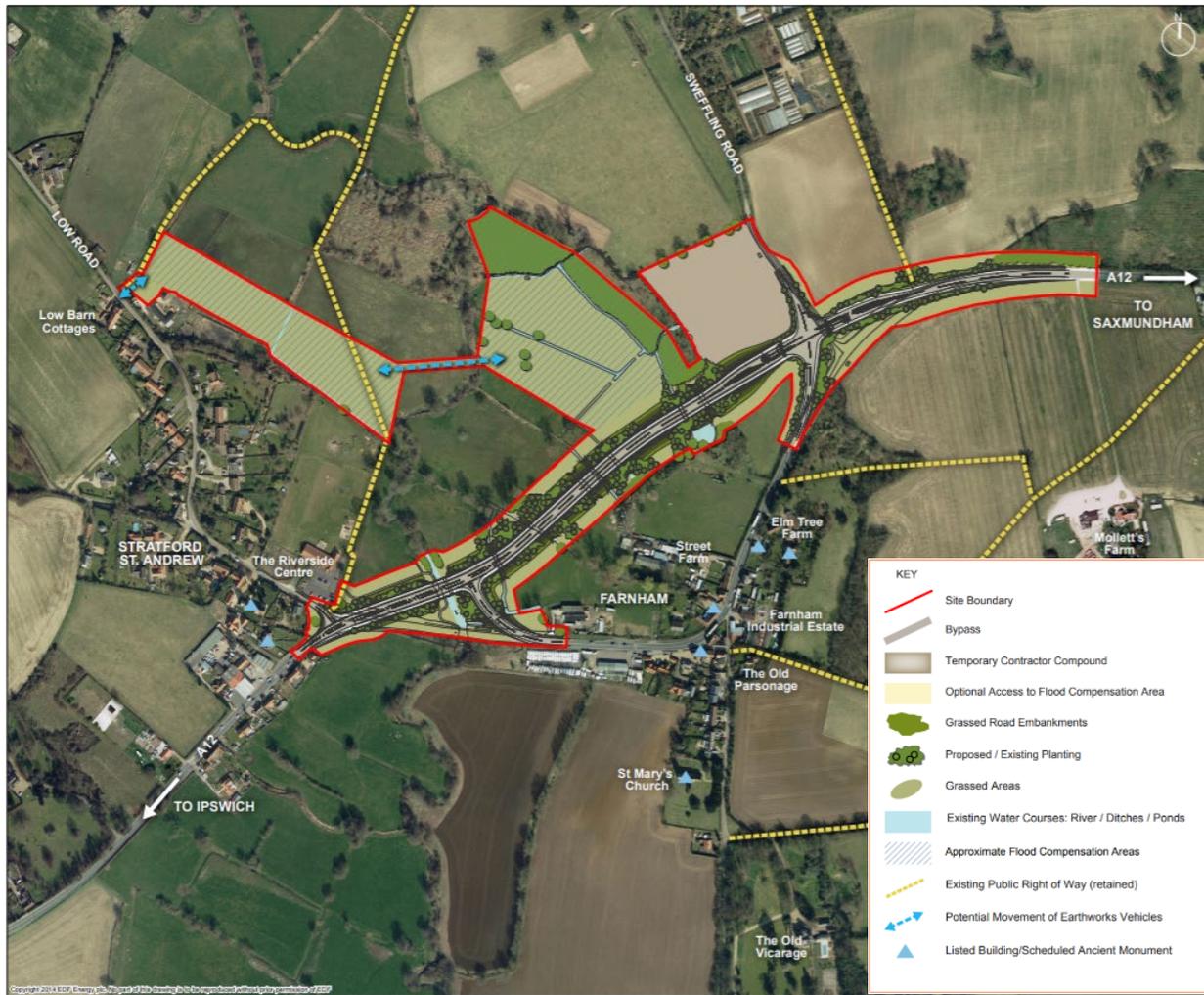
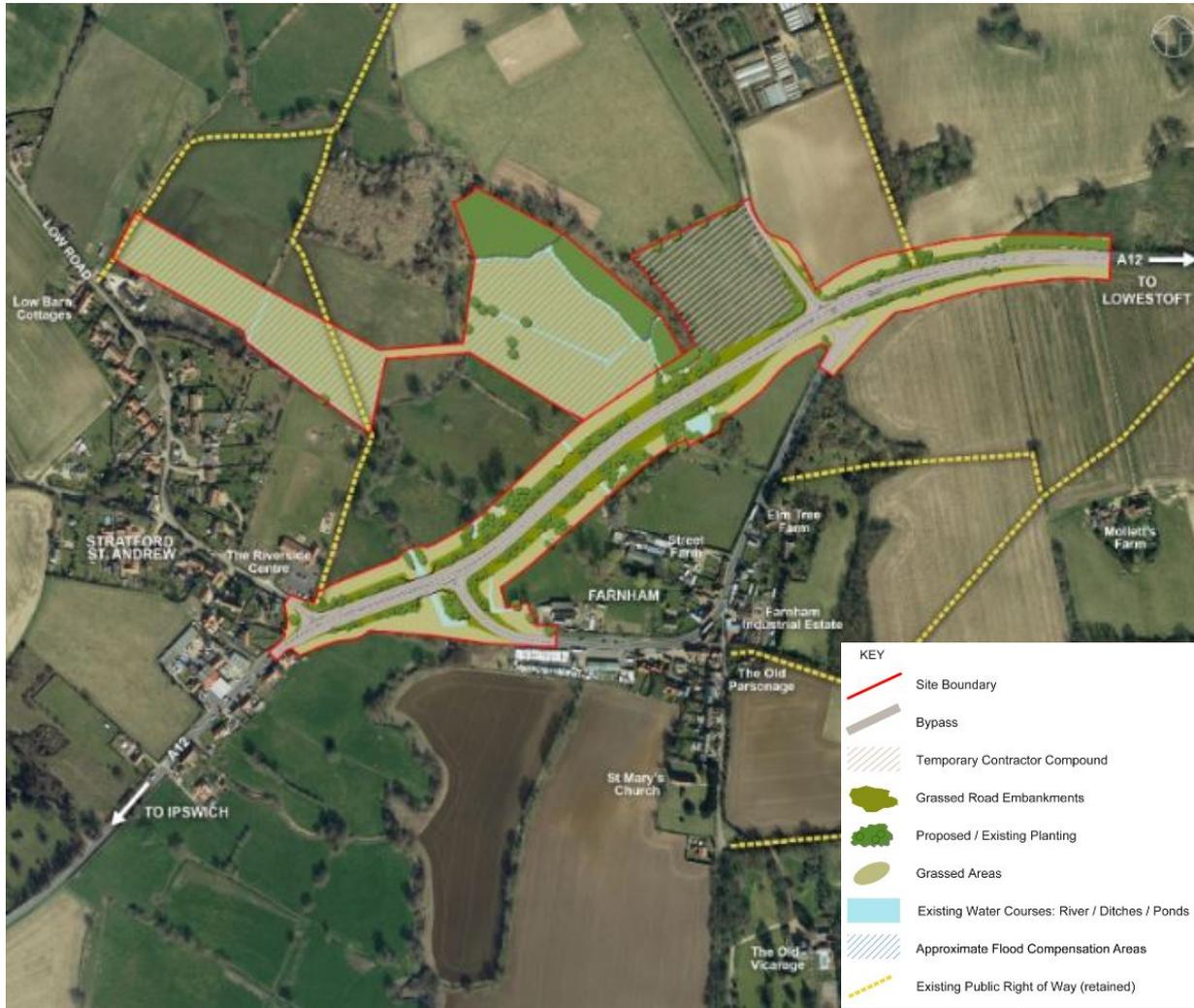


Plate 3.5: Stage 2 – Masterplan for Option 3B: Farnham bypass.



- Option 4: a Stratford St Andrew and Farnham bypass (also known as the two village bypass) to the south of the villages (see **Plate 3.6**). This alignment was originally designed and suggested by SCC, and then adopted by SZC Co. as one of the options presented for consultation at Stage 2.

Plate 3.6: Stage 2 – Masterplan for Option 4: Stratford St Andrew and Farnham bypass.



3.2.27 The analysis of environmental, transport and socio-economic impacts associated with these options is set out below.

i. Environmental considerations

3.2.28 Option 1 would not have altered the existing road layout and the potential for adverse environmental effects would arise from traffic, and traffic-related effects due to the presence of construction traffic flows from the Sizewell C Project on the A12.

3.2.29 Option 2 was not expected to give rise to significant changes to noise levels during operation and air quality levels would have been below the air quality objective. However, mitigation required to minimise construction noise, and site specific dust management measures would need to have been

implemented to control dust during construction. Option 2 would have required the demolition of the Grade II listed building known as the Post Office Stores, and would have likely affected the setting of the Grade II listed buildings within the village, including The George and Dragon Public House (immediately south), Turret House and Turret Cottage (immediately west) and Elm Tree Cottage and Elm Tree Farmhouse (approximately 50m north) and the immediate townscape character. Public access would have needed to be maintained and possibly temporarily diverted during construction, however there would have been no public right of ways (PRoW) that would require permanent stopping up or diversion.

3.2.30 Initial assessments for Option 3 (the one village bypass) noted that there would have been a beneficial noise effect for residents in properties in the village of Farnham, and an improvement in air quality within the village, due to a reduction in vehicle movements through the village. Vehicle emissions would have increased along the bypass route due to the introduction of a road, but they would be below the air quality objective. It was noted that existing views, and the landscape character would have been altered. There was also the potential for adverse impacts on the community due to potential severance, and division between the villages of Farnham and Stratford St. Andrew as a result of the bypass. The villages are currently very closely linked.

3.2.31 Option 4, once operational, would improve air quality overall within the both Stratford St. Andrew and Farnham by reducing through traffic flows and removing all Sizewell C construction traffic, and would likely result in reductions in both nitrogen dioxide and particulate matter concentrations. It was noted that this option would have some negative effects on biodiversity, due to the loss of habitat, but these effects could be reduced through mitigation measures. This option would also likely have an adverse impact on the character of the landscape through the introduction of a new road in a rural landscape but would improve the setting of historic assets within the village of Farnham by reducing existing traffic within the village. The option may however result in the part or complete loss of some other low value archaeological heritage assets, including an old field system, two flint scatters and a lithic scatter.

3.2.32 Overall, whilst Options 3 and 4 would impact a wider area and potentially increase impacts on the landscape character and biodiversity, these options would reduce traffic-related impacts within the village and improve existing air quality and noise levels. There are no works associated with Option 1, and the construction works associated with Option 2 would have been less extensive, however, neither option would have avoided the need for construction traffic to travel through the village, and would increase traffic-related impacts such as severance, air quality and noise.

ii. Transport

- 3.2.33 Option 1 would have resulted in increased traffic flows through Farnham during the construction of the Sizewell C Project, and would have likely resulted in increased congestion, and risk of accidents.
- 3.2.34 It was considered that Option 2 would have been effective in addressing the safety concerns associated with the bend in Farnham, and it was considered to improve traffic flow to some degree. However, it was considered the widening would be insufficient to address increased traffic volumes, and it would not have removed construction traffic from the village of Farnham, which may have resulted in increased congestion.
- 3.2.35 Option 3 would have resolved the safety concerns and congestion associated with Farnham Bend. However, it would still have required traffic to pass between Farnham and Stratford St. Andrew, which may have introduced severance related impacts between the two communities.
- 3.2.36 Option 4 was considered to be the most effective in overcoming the safety and congestion issues related to the narrow bend at Farnham, whilst also diverting traffic (existing and construction traffic associated with the Sizewell C Project) around Farnham and Stratford St. Andrew, thereby avoiding severance related impacts between the two communities.
- 3.2.37 Overall, Option 4 was considered to be the most effective at managing traffic-related impacts.

iii. Socio-economics

- 3.2.38 Option 1 was considered the least likely to generate socio-economic benefits due to there being no physical interventions.
- 3.2.39 Option 2 may have generated some increased business activity in the surrounding area, although to a notably lesser extent compared to Options 3 and 4, which would have offered a number of socio-economic benefits, and would likely require a large workforce. Option 3 and 4 would have had the potential to bring increased business during construction to the nearby petrol station, cafés, and bed and breakfasts.
- 3.2.40 Overall, Options 3 and 4 were considered to present the most socio-economic benefits because of the benefits of a larger workforce.

iv. Conclusion

- 3.2.41 The majority of respondents to the consultation selected Option 4 as the preferred option, with the primary benefits perceived by respondents being an improvement in traffic flow, alleviating congestion, reducing the impact of

HGV and construction traffic, and being a long-term solution. Respondents viewed the removal of traffic from the villages as having further benefits for residents, including air quality and noise. This option was presented by SCDC and SCC as being less damaging than the other options set out by SZC Co. at Stage 1. The SCDC and SCC response to the Stage 2 consultation confirmed that Option 4 was their preferred option with regard to air quality. SCDC and SCC recognised that, whilst some additional properties would be affected by noise from the Option 4 route, these are significantly more limited in number and to a large extent these new receptors are at a considerably greater distance from the road than would be the case with other options. SCDC and SCC noted that Option 4 would result in an improved setting for heritage assets within Stratford St Andrew and Farnham (in comparison with the one village bypass) and that this should be afforded significant weight. SCDC and SCC considered that, while the two village bypass is more extensive than the one village bypass, having a much larger total footprint, the ecological and landscape sensitivity of the receiving land is, for the most part, less than that of the one village bypass route.

3.2.42 Overall, it was considered that Options 1 and 2 would not have resolved the safety concerns and congestion issues associated with the bend at Farnham, nor the amenity impacts of increased traffic, which would have been exacerbated during the construction of the Sizewell C Project. Additionally, Option 2 would have resulted in the demolition of a designated heritage asset and properties. Options 3 and 4 were considered effective at resolving the safety concerns associated with the bend at Farnham whilst also improving traffic flow, alleviating congestion and reducing the amenity impact of HGVs. However, Option 3, would have introduced severance between Farnham and Stratford St Andrew, even though a pedestrian/cycle link between the two villages, passing under the bypass at the River Alde, would have been included.

3.2.43 Due to its potential for reducing traffic-related safety concerns, congestion and impacts on residential amenity within the villages of Farnham and Stratford St Andrews, Option 4 was selected as the preferred option and progressed at Stage 3, Stage 4 and forms part of the proposals for development consent.

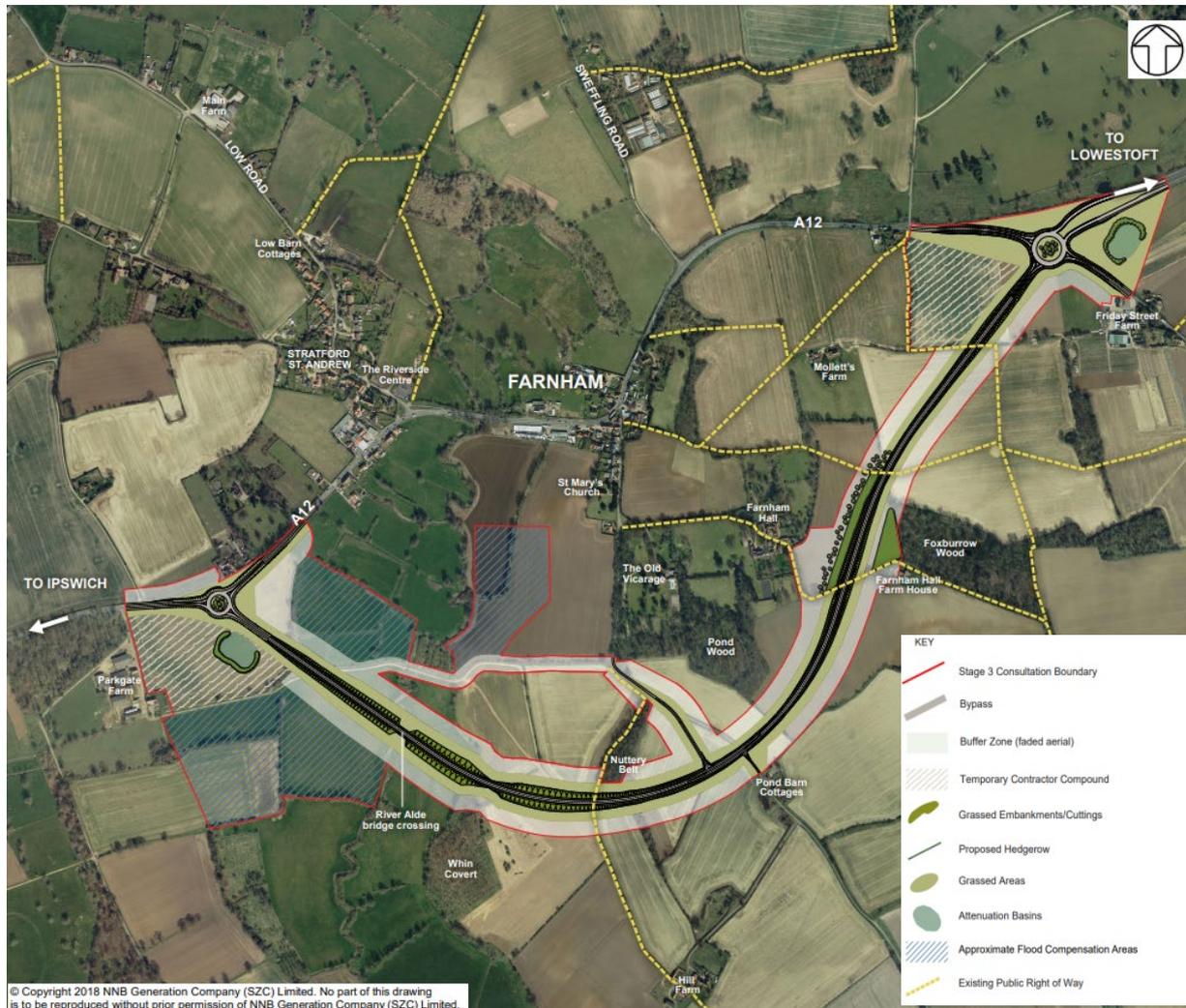
3.3 Alternative designs and design evolution

3.3.1 This section provides a summary of the design evolution of the proposed development, including the alternative designs considered, and modifications made throughout the design process, including any environmental considerations which have led to those modifications. This process took the alignment originally designed by SCC and presented at Stage 2 and adapted it to meet with SZC Co.'s operational requirements, construction feasibility and taking account of the landscape and other environmental constraints.

a) Stage 3 consultation

- 3.3.2 The proposed route for the two village bypass was revised following the Stage 2 consultation to respond to concerns raised during the consultation process. The masterplan presented at Stage 3 is shown in **Plate 3.7**.
- 3.3.3 The proposed western roundabout was relocated approximately 150m further east to reduce the potential impact on Stratford Plantation, which is within Glemham Hall registered park and garden. The retention of established vegetation and the introduction of appropriate landscape proposals was proposed to mitigate impacts on this asset.
- 3.3.4 The route was realigned considerably further south to avoid any impact on Nuttery Belt and Pond Wood, both of which would have been adversely affected by the Stage 2 alignment.
- 3.3.5 The proposed bridge near Pond Barn Cottages at Stage 2 (which passed over the proposed bypass route and would have been prominent in the landscape) was removed given the low traffic volume on the (unnamed) minor road for Pond Barn Cottages. Instead, the route of the two village bypass was revised, so that the minor road meets the bypass at an at-grade staggered crossroads to reduce the earthworks needed at this location, while retaining access across the bypass.
- 3.3.6 The Stage 2 scheme proposed an underpass beneath the bypass for the track leading south-east from Farnham Hall towards Walk Barn Farm. To reduce earthworks at this location, access for Farnham Hall Farm House and Walk Barn Farm at Stage 3 was proposed via the existing track to the west, the new at-grade junction described previously, and a new access track that would run along the southern side of the bypass.
- 3.3.7 The eastern roundabout was relocated further from the A12/A1094 Friday Street junction, so that it can largely be built off-line to minimise traffic management requirements, and potential disruption to A12 and A1094 traffic flows during construction.

Plate 3.7: Stage 3 – Two Village Bypass Masterplan.



i. Consultation responses

3.3.8 The feedback from the Stage 3 consultation was largely positive, with the majority of respondents supporting the two village bypass of Stratford St Andrew and Farnham.

3.3.9 Other emerging themes concerned the impact on local woodland (Foxburrow Wood in particular) and access for pedestrians and local cyclists to the existing amenity and recreation routes.

3.3.10 Consultation responses from Natural England and the Environment Agency (in both Stage 3 and Stage 4 responses) noted concerns on the potential impacts on flood risk, ecology and landscape arising from the River Alde crossing, and stated a preference for a viaduct crossing of both the River

Alde and associated floodplain, rather than the design presented during the consultation stages.

3.3.11 Following Stage 4 consultation, SZC Co. consulted further with Natural England and the Environment Agency on the design of the river crossing, supported by the results of hydraulic modelling, landscape assessment and ecological assessment, and presented the evolving design and reasons for discounting a viaduct crossing. This design presented during this consultation (and included in the proposed development) included a longer bridge (increasing in length from 36m to 60m) and larger flood arch culverts. The hydraulic modelling demonstrated that a 60m bridge with eight flood relief culverts (5.4m by 3m), four on either side of the bridge, and mammal passage, would not impede in-channel river flows or morphology and minimises the impact on flood plain flows. The bridge and culverts would also enable passage of wildlife under the road crossing.

3.3.12 A viaduct crossing was discounted as:

- The crossing of the River Alde and associated floodplain by a viaduct would involve the requirement of at least 36 piers across 540m. Due to existing ground conditions, would likely require the need for the piled foundations for each pier.
- The construction of a viaduct is likely to cause damage to the adjacent marshland due to the construction techniques involved and would introduce a more prominent structure into the landscape.
- A viaduct would have a longer construction period and would impact the timescale for delivering the proposed development and the development that it supports, the Sizewell Project C main development site. The potential delay associated with a viaduct would have led to the bypass not being available for the early construction phases of the Sizewell C Project leading to an increase in traffic due to the associated construction work. In comparison, an embankment and bridge over the River Alde would have a shorter construction period.

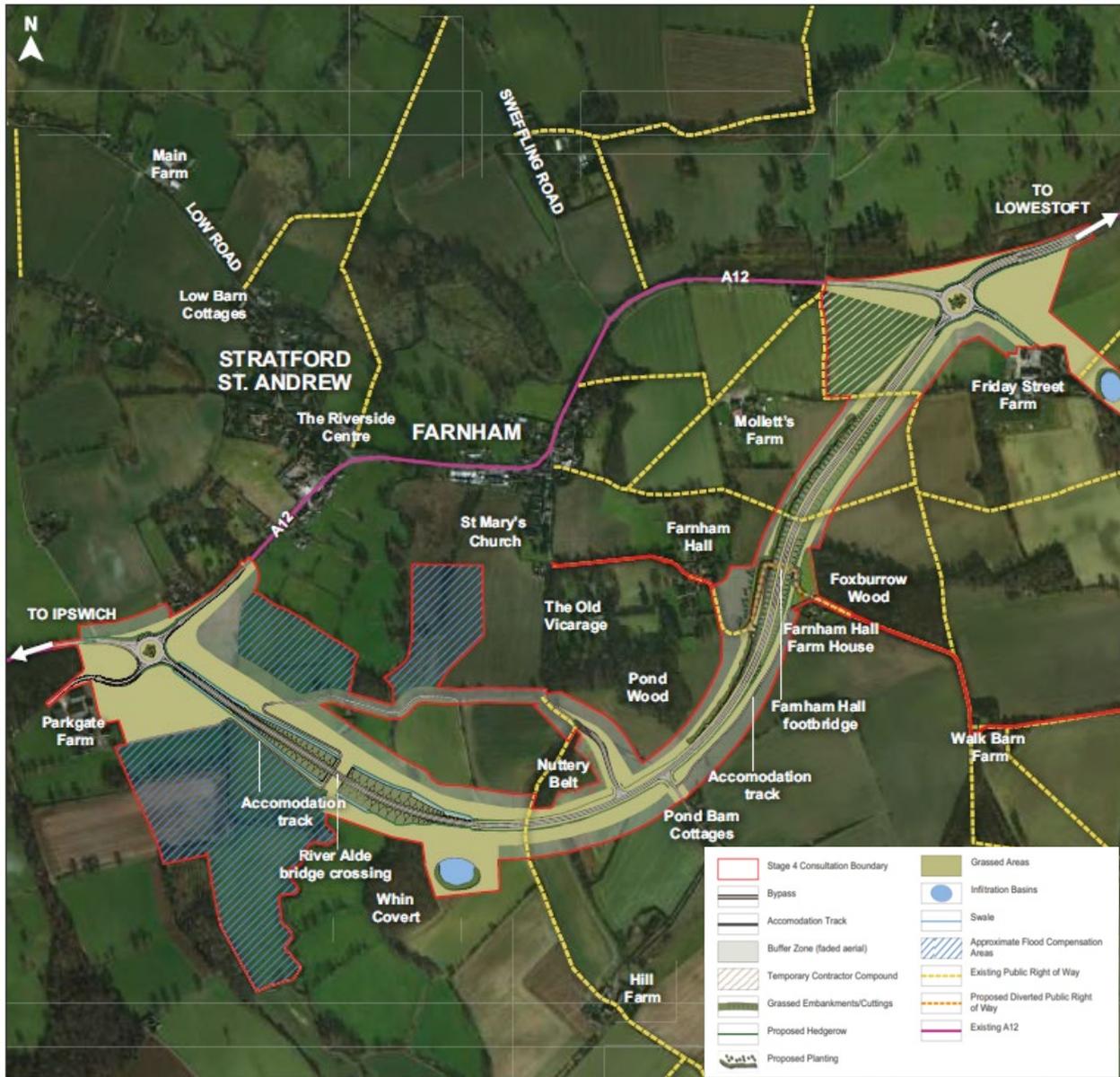
b) **Stage 4 consultation**

3.3.13 Following the completion of Stage 3 consultation, including landowner engagement, a number of changes were made to the two village bypass for the Stage 4 consultation. The masterplan presented at the Stage 4 consultation is shown in **Plate 3.8**.

3.3.14 The western roundabout was repositioned to accommodate a four-arm roundabout (rather than three arm) and the site boundary was extended to connect Tinker Brook to the roundabout, thus avoiding farm traffic, and the national cycle route travelling north to south across the A12.

- 3.3.15** Additional headroom over the River Alde was proposed to enable agricultural movements beneath the bypass between land either side of the bypass. The site boundary was extended to the south adjacent to the River Alde to include additional land for flood compensation and drainage.
- 3.3.16** At Stage 4, it was proposed that the route of the proposed bypass would be in a deeper cutting where it passes Foxburrow Wood and Farnham hall, rather than at ground level as presented in Stage 3. The cutting would be approximately 4.5m in depth east of Farnham Hall and would help to reduce potential noise impacts on Farnham Hall and surrounding properties (although it was noted this may not avoid all operational noise impacts).
- 3.3.17** The site boundary was also amended to the south and north-west of Foxburrow Wood to allow for a proposed bridge crossing over the bypass between Foxburrow Wood and Farnham Hall. This non-motorised user overbridge would respond to concerns raised at Stage 3 regarding access to the PRoWs by reducing severance effects of the bypass on PRoW E-243/003/0. As the proposed bypass would be in cutting at this point, the overbridge would only need to be raised 2.5m above surrounding ground levels with embankments and a ramp for access, and still achieve sufficient clearance beneath for vehicles using the bypass.
- 3.3.18** Additional extensions to the site boundary were also proposed to include land to accommodate the length of the existing footpaths E-243/003/0 and E243/011/0. No physical changes were proposed to it but it was included at the request of SCC to formally upgrade it from a footpath to a bridleway. Other extensions were proposed along the A12 around the proposed roundabouts following design development.

Plate 3.8: Stage 4 – Two Village Bypass Masterplan.



i. Consultation responses

3.3.19 The Stage 4 consultation raised similar issues to those at Stage 3. The main themes of response related to the environmental concerns about the proposed road, with the primary concern being the impact on air quality from a new bypass, although it would reduce emissions in the villages themselves. Another common concern was the effect of the bypass on Foxburrow Wood in terms of pollution, and that the cuttings would affect the hydrology of the wood.

- 3.3.20 Other environmental concerns highlighted include:
- an increase in light pollution;
 - an increase in noise pollution and vibrations from traffic passing by;
 - the impact on wildlife and ecology; and
 - the visual impact of the bypass.
- 3.3.21 Several respondents were concerned that the mitigation offered would be inadequate as the elevated height of the new non-motorised user bridge west of Foxburrow Wood would impact on the privacy of nearby properties. Concern was raised that the screening proposed would be ineffective for much of the year and may not establish sufficiently quickly to mitigate the impact.
- 3.3.22 Respondents however generally remained positive about the two village bypass, as they felt that it will improve traffic on the A12, and provide greater safety than the existing route.
- 3.3.23 The feedback also included suggestions that the alignment of the two village bypass should move to the east side of Foxburrow Wood rather than the west, as respondents felt this would be more environmentally friendly, and better for the communities of Farnham and Stratford St Andrew.
- 3.3.24 Farnham with Stratford St. Andrew Parish Council objected to the proposed alignment of the two village bypass and suggested an alternative alignment, which would route the two village bypass (travelling from west to east) to the south of Pond Barn Cottages before curving northwards, passing Foxburrow Wood on its east side, bisecting Palant's Grove, and meeting the proposed Friday Street roundabout to the north.
- 3.3.25 The alternative alignment put forward by the Parish Council was reviewed, taking into account the impacts on woodland, environment and nearby receptors as well as operational matters, but it was not considered to be a better solution.
- 3.3.26 Any proposed bypass must offer road users a viable, alternative route that would be perceived as quicker than travelling through the villages in order to provide the relief sought to these local communities. The route proposed by SZC Co. is shorter than the alternative alignment put forward by the Parish Council and is therefore more likely to encourage road users to bypass the current A12 route through Stratford St. Andrew and Farnham.
- 3.3.27 The alternative alignment would be closer to Walk Barn Farm than the SZC Co. proposal is to any neighbouring property. The proposed alignment has

been routed as far away from residential properties as possible, whilst still avoiding the environmentally important woodland and gardens.

3.3.28 The Parish Council’s alternative alignment would have significant effects on Friday Street Farm, as it would bring the two village bypass closer to the Farm Shop and Cafe. It would sever the fields west of the car park of the farm, from which views of the fields where fresh produce is grown is important to the Farm’s commerciality, and there would be a potential impact on the ‘pick-your-own’ area to the south of the Farm Shop. The alternative alignment could therefore have a negative impact on the commercial success of this local business. Given a number of respondents at Stage 3 were concerned that the two village bypass would damage local businesses, forcing some of them to close, this is a significant factor for the viability of this local business.

3.3.29 The route proposed by SZC Co. would avoid the Foxburrow Wood ancient woodland and Stratford Plantation, which is part of Glemham Hall Registered Park and Garden. By passing Foxburrow Wood on its east side, the alternative alignment would bisect Palant’s Grove, which would be permanently lost as a result. It is also anticipated that with the alternative alignment it would be difficult to maintain a 15m buffer to Foxburrow Wood, which is achievable with SZC Co.’s proposal.

3.3.30 Farnham with Stratford St Andrew Parish Council have questioned the validity of the ancient woodland designation of Palant’s Grove based on reports undertaken in 1994 analysing the origin of the woodland. However, both the Department for Environment, Food and Rural Affairs, and Natural England confirm that the entirety of Foxburrow Wood and Palant’s Grove are designated as ancient woodland, as they are both on the Ancient Woodland Inventory. In any event, both Foxburrow Wood and Palant’s Grove are a County Wildlife Site. Therefore, any permanent loss of Palant’s Grove would be a loss of important habitat resulting in irreversible harm. The bisecting of Palant’s Grove would also reduce ecological connectivity. It was therefore considered that the proposed SZC Co. route for the two village bypass is preferable to that proposed by Stratford St Andrew Parish Council.

c) Current proposals

3.3.31 As part of design refinement and EIA process, there have been a number of updates to the design following Stage 4 consultation. These updates to the design have been developed to avoid or help reduce adverse environmental effects and to take account of comments raised during this process as well as through consultation with landowners and other stakeholders such as the Environment Agency, SCC and ESC. These changes comprise:

- The extent of land take required for the construction and operation of the proposed development has been reduced by 15 hectares where

NOT PROTECTIVELY MARKED

practicable, reducing the areas of land required from land holdings and reduce habitat loss. Further consideration was also given to the areas of land required permanently for the proposed development as well as those required to facilitate construction and would be returned to agricultural use upon completion of construction;

- An increase in length of the bridge over the River Alde from 36m to 60m to reduce permanent loss of flood plain. In addition, there have been amendments to the design of the culverts along the embankment either side of the bridge, choosing bigger culverts, to lessen the impact on watercourse banks and improving afflux in the event of a flood event. This allowed for the reduction in areas which could be used for flood compensation;
- Refinements of ramps associated with the Foxburrow Wood footbridge to avoid earthworks within 15m of Foxburrow Wood County Wildlife Site and Ancient Woodland, and reduce potential impacts on this site;
- accommodation access tracks and private means of access have been added / refined to reduce severance impacts. The changes include:
 - realignment of the existing accommodation access track connected to Parkgate Farm which would be diverted to pass under the new road on the western side of the River Alde. A livestock path would be provided to the west of the proposed River Alde overbridge to allow cattle to move north and south of the route of the bypass. On the east side of the river, east of the existing crossing, a diversion will be provided from the existing accommodation access to pass beneath the River Alde overbridge, and then directed east along the embankment until it meets its existing alignment. The bridge would maintain a headroom clearance of 6m from river bank level to the underside of the bridge, to allow its use by agricultural vehicles.
 - Provision of an accommodation track on the south side of the proposed route to maintain access to Pond Barn Cottages.
- addition of a mammal culvert to the east side of the River Alde overbridge to improve ecological connectivity across the route;
- additional landscaping has been added to reduce habitat fragmentation and improve biodiversity (including enhancement of planting for bat-hop overs and provision of new ponds); and
- refinement of proposed PRow diversions, as well as inclusion of temporary diversions, to ensure connectivity across the proposed development during both construction and operation. Further details are

shown on the Rights of Way plans included in **Appendix 2A** of this volume.

- 3.3.32 The design for the proposed development is described in **Chapter 2** of this volume and illustrated in **Figures 2.1** to **2.4**.

References

- 3.1 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017
- 3.2 A12 Four Villages Study, Final Report. Prepared by Faber Maunsell on behalf of Suffolk County Council, December 2006.