



Replacement of existing Finchingfield Bridge (including demolition) & the construction of a temporary crossing at Finchingfield

Planning Statement

December 2022







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Contents

1. Introduction	6
2. Finchingfield Bridge	7
3. The Proposal	11
4. Optioneering	20
5. Commissioned Studies: Evidence Base	32
6. Relevant Planning Policies and Conformity	41
7. Conclusion	49

1. Introduction

1.1 The Purpose of this Planning Statement

This Planning Statement has been produced by Place Services on behalf of Essex County Council as the Highways Authority, to accompany the submission of an application for full consent for the replacement of the existing Finchingfield Bridge (including demolition of the existing structure) and the construction of a temporary bridge at Finchingfield.

The primary purpose of this Planning Statement is to explain the planning proposals in greater detail, to provide a balanced justification for development, and assist officers in determining the validity of this application.

This statement should be read in conjunction with the other supporting documents, which include:

- Application Forms
- Site Location Plan
- Indicative plans
- Heritage Assessment
- Ecological Impact Assessment
- Arboricultural Impact Assessment and Method Statement
- Landscape Visual Appraisal
- Flood Risk Assessment

2. Finchingfield Bridge

2.1 Site Location and Description

Finchingfield bridge is found at the heart of the village of Finchingfield located nearby to the western boundary of Braintree district in north-west Essex. Finchingfield Bridge is located on the B1053 and acts as a crossing over Finchingfield Brook. The structure is located in the heart of the village of Finchingfield within Braintree District and provides a key connection between the B1053 and B1057. The bridge lies within the Finchingfield Conservation Area and is adjacent to the village green which is also designated.

The bridge itself is located centrally within the Finchingfield Conservation Area and while it is not a listed heritage asset itself, it does provide considerable value to the setting of the area as well as the significance of many of the heritage assets in the environs adjacent to the site. The structure is within close proximity to 14 listed buildings, including the Grade I listed Parish Church of St John Baptist and is adjacent to the non-designated asset 'The Greedy Duck', a popular café at the centre of the village.

Elements of the existing bridge are up to 200 years old, with more modern 1980s reconstructed retaining walls. The bridge consists of a humped single span structure, comprised of a brick arch with a widening concrete arch extension. The retaining walls are featured on the southern side of the carriageway providing support for the highway above the level of the adjacent pond. As it currently stands, the geometry of the bridge is not conducive to vehicles manoeuvring the structure, vehicles approaching from both the side road junctions and main road approaches do not have adequate space to manoeuvre across the structure. This has led to multiple instances of vehicles striking the bridge; the principal reason and justification for widening. This serves to futureproof the safety of the crossing, however it is important that widening is kept to a 'minimum standard' (as proposed) in order to ensure, as far as possible, consistency from an aesthetic standpoint and also for the crossing's width to remain a traffic relief / calming measure.

The bridge structure was assessed by ECC appointed contractors LimitState Ring in 2010 who discovered that the brick arch structure was in fact sub-standard in terms of its load capacity. The brick arch barrel was found to have a 10-tonne capacity, this assumed that the arch barrel and associated backing acted compositely. If the structure does not act compositely then the capacity is 3-tonnes.

The reasons above form the foundation of this scheme, with ECC exploring the option to demolish the structure and replace with a design constructed using a modern method. Enabling all classes of vehicle to utilise the route while also ensuring resilience for the future of the structure.

Figure 1: Indicative site boundary for Finchingfield Bridge demolition, replacement and associated re-routing



2.2 Planning History

A Screening Opinion request from Essex Highways was submitted to Essex County Council on 23/05/2016 regarding a proposed new off-line Finchingfield Bridge under the reference CC/BTE/20/16/SO. In their response ECC confirmed that the effects arising from a development of this type would not be so significant as to require a formal Environmental Impact Assessment to be produced.

More recently, a pre-application was submitted to Essex County Council for the scheme under the reference CC/BTE/28/21/PRE. The replacement portion of the scheme did not raise any fundamental objections, requirements of the new bridge were sensitive design and monitoring of the nearby buildings throughout construction due to the potential harm to the listed buildings. The temporary structure raised concerns due to its location within the Conservation Area and a 'diversionary route' option was recommended for exploration as noted by the planning authority.

2.3 The condition of the existing bridge

Three assessments have been undertaken on the existing Finchingfield bridge:

- A 1994 Essex County Council Assessment Report which established that the constituent brick arch barrel and concrete extension had 7.5 tonne and 40 tonne live load capacities respectively, and that parapet brickwork was non-compliant.
- A 2010 Mouchel Option study which was informed by an assessment undertaken in the year prior. This had the same findings as the 1994 assessment.
- A 2010 LimitState Assessment Report examined the masonry bridge arch in isolation to the other bridge elements. This report concluded that the bridge was not capable of carrying 40/44 tonne vehicles across its whole span, with the arch and backing having a maximum load of 10 tonnes carrying capacity, based upon these features acting compositely (as a single unit). If no composite action is occurring, then it was recommended that a weight restriction of 3 tonnes should be considered.
- A 2022 General Inspection Report that indicated the extent of damage from several vehicle strikes, and a historic vertical crack in the south east wingwall extending 1.7m open 1mm to 1.5mm.

2.3.1 1994 Essex County Council Assessment Report

The Finchingfield Bridge (No.26) structure was assessed in 1994 in accordance with Bridge Departmental standards (BDs) 21/93 & BA 16/93 *The Assessment of Highway Bridges and Structures*. At this time, the assessment concluded that the brick arch barrel and concrete extension portions of the bridge had live load capacities of 7.5 tonnes and 40 tonnes respectively. There was some level of uncertainty around these capacities and as such further investigations were recommended using an alternative method of analysis to determine if these initial live load capacities are reliable. Furthermore, the parapet brickwork were found to be non-compliant with the standards of the time and were recommended to be repaired in the interim.

2.3.2 Mouchel Option Study 2010 (including 2009 assessment)

As part of the Option Study undertaken by Mouchel in 2010 an assessment of the structures live load capacity was also completed. This assessment utilised the software 'ARCHIE' to analyse the bridge by determining the first failure mechanism in the arch. This assessment concluded that the arch barrel and concrete extension portions of the bridge have live load capacities of 7.5 tonnes and 40 tonnes respectively, much like the assessment completed in 1994.

2.3.3 LimitState Assessment Report 2010

LimitState undertook an assessment of Finchingfield bridge to predict the ultimate load carrying capacity of the masonry arch bridge. The assessment concluded that the bridge

was not capable of carrying 40/44 tonne vehicles. The arch barrel and backing were identified as having a maximum load of 10 tonnes carrying capacity, this is based upon these features acting compositely (as a single unit). If no composite action is occurring, then it was recommended that a weight restriction of 3 tonnes should be considered. At this time, the assessment recommended either the strengthening or renewal of the bridge.

2.3.4 General Inspection Report October 2022

This assessment identifies that the clear width between the parapets of the bridge is 3.82 metres, which is sufficient only for single width traffic. Due to the narrow width of the bridge, the parapets and the adjoining buildings have been struck by vehicles on a number of occasions. The concrete finish (south west) under the concrete arch has failed and waterproofing is not present over the arch; historic seepage through the brickwork is evident in leachate and calcite deposits on brick faces.

In regard to the handrail, parapet and safety fences, the west end of the inside face has suffered impact causing moderate gouges and spalls to the brickwork. This is similarly the case for the east end with the addition of 2.4 metres of coping brickwork now being missing. Furthermore, at the northeast corner, several bricks were missing to the soldier course due to a likely vehicle impact.

Additionally, the inspection found:

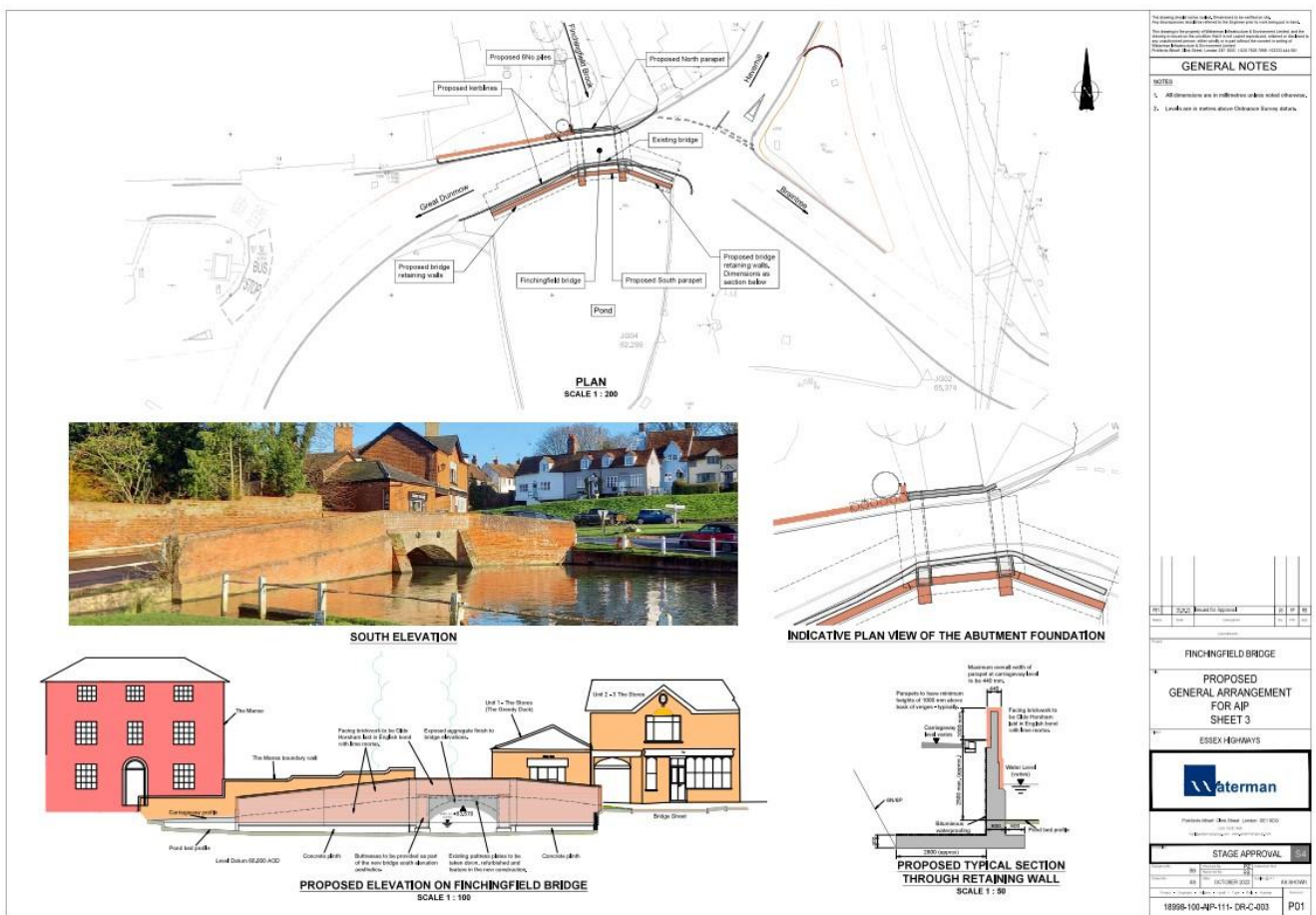
- Moderate loss of pointing to the wing walls up to depths of 40mm in a 0.5m x 1m area.
- A historic vertical crack in the south east wingwall extending 1.7m (full height including both sides of wingwall parapet) open 1mm to 1.5mm

3. The Proposal

3.1 Bridge Replacement and Demolition of Existing Structure

The proposed general arrangement below provides a representation of the design of the improvements to Finchingfield Bridge. The updated structure is proposed to be located in the same location but across a slightly larger footprint to ensure improvements can be suitably incorporated to the design of the scheme. The proposed structure will sit primarily on the footprint of the existing but will be slightly wider to accommodate the turning circles of larger vehicles.

Figure 2: Proposed General Arrangement



The temporary bridge is proposed to cross the pond towards its southern boundary, allowing for the continued use of the road network throughout the demolition and construction of the new structure. The new structure will have an indicative design working life of 120 years (working life category 5), this is in accordance with National Annex to BS EN 1990:2002 + A1:2005 [NA.2.1.1] (BS EN 1990 sets out the principles and requirements for safety, serviceability and durability of structures in construction engineering work). The structure will comprise a reinforced concrete arched deck portal frame. The deck will be supported on reinforced concrete spread type foundations, alongside supporting reinforced concrete

retaining walls. The bridge shall be of integral construction, with the monolithic connection between the deck and abutments enabling the longitudinal, transverse and rotational fixity of the superstructure.

Due to the bridge's location within the Finchingfield Conservation Area both the bridge and the retaining wall parapets are to have a brick appearance but will still comply with the CD377 (requirements for road restraint systems) height requirements. The replacement permanent highway bridge parapet will be designed to a containment level of N1 (Normal Containment 1) as the bridge is situated on a road with a speed limit of less than 50mph.

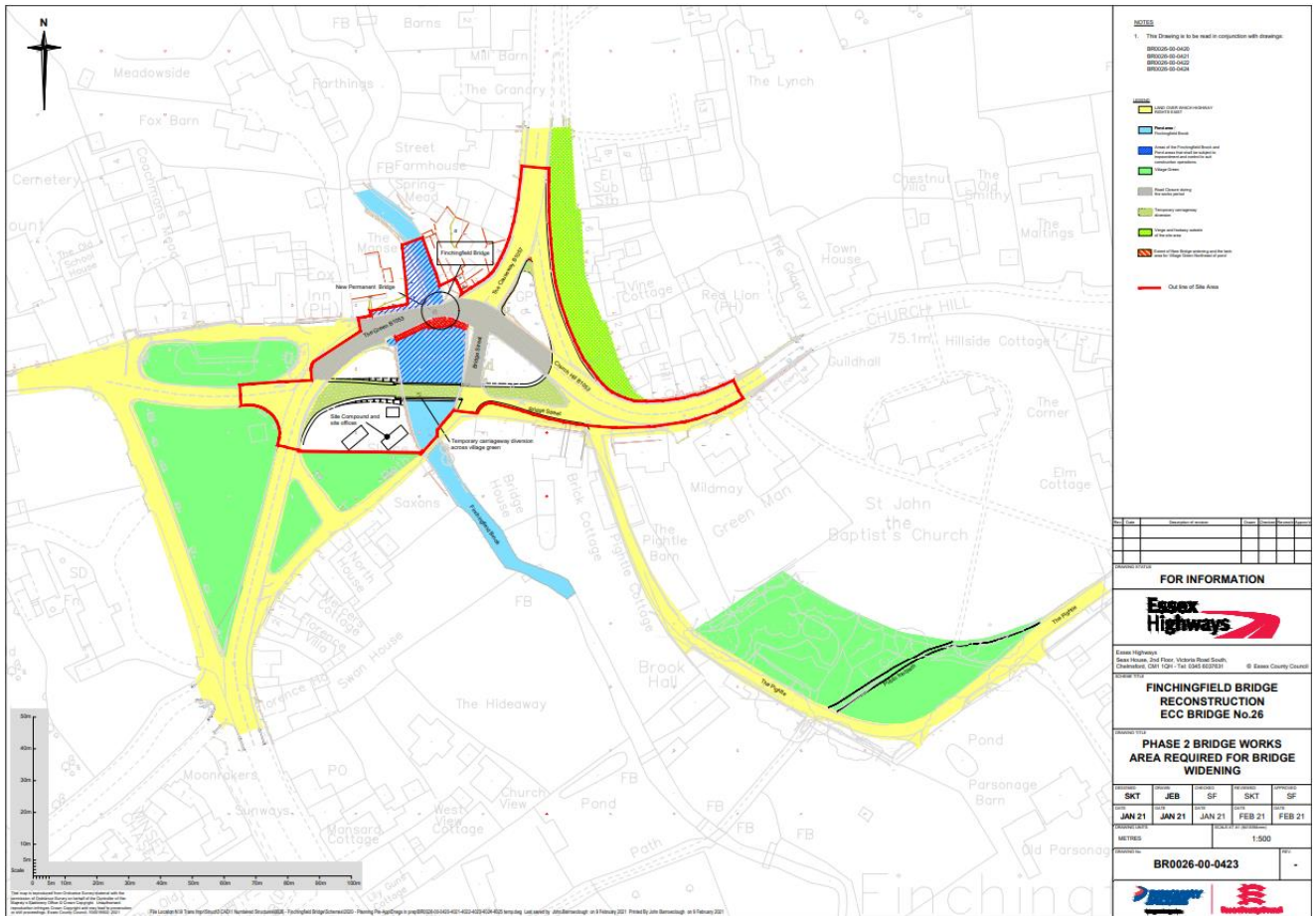
The existing abutment walls will house the construction of the new foundations to avoid the need for extensive water management. There will be consideration of protective measures for the watercourse during the demolition of the existing structure and construction of the new deck in accordance with conversations with the Environment Agency (EA) (emails detailing this are submitted as part of this planning application) which have shaped the proposal.

3.1.2 Proposed Design

The proposed structure and appearance of the works are in keeping with what is currently present at the site; this includes both the appearance of the bridge itself and the accompanying buttresses and parrass plates (taken down and refurbished). A non-uniform selection of red brick (of varying shades) will be used, selected from trial panels to be introduced in the green areas over the winter of 2022/23. This will also be the case for the mostly 1980s facing brickwork, which will not be retained.

In addition to the improved accessibility associated with the width increase of the bridge footprint. The modern materials used in the construction such as the reinforced concrete arched deck portal frame through the full width of the structure and reinforced concrete retaining walls improve the live load capacity of the structure to provide an updated crossing that features a rating suitable of supporting a wider range of vehicles, while still maintaining the carriageway width to continue to act as a traffic calming feature for the area.

Figure 3: Finchingfield Bridge Reconstruction – Phase 2 Bridge Works, Area Required for Bridge Widening



3.1.3 Widening

The new structure is proposed to be wider than the existing Finchingfield Bridge. This design decision has been made for a number of reasons, most importantly, traffic management, safety and resilience.

The proposed new structure will be around 1.4 metres wider in order to facilitate both the installation of narrow verges on the northern and southern sides of the highway to offer protection to the parapets, and to provide smoother lines on the approach and while passing over the bridge. The parapets of the bridge and adjoining structures (the Greedy Duck) have been frequently struck by vehicles in the past and subsequently damaged, adjusting the approach and providing verges will assist in offering some protection to both the parapets and buildings.

3.2 Proposal for a Temporary Crossing

To facilitate the reconstruction of Finchingfield bridge the existing highway (B1053) will remain closed for the length of the development works; this is currently estimated to be six –

nine months. Once a structure design has been finalised this timescale would be provided with greater accuracy. A result of this closure is the potential severing of the village, separating the eastern and western portions of the highway. As such a temporary road and bridge crossing is also proposed across the southern part of the pond and into the Village Green. The position of the temporary road has been dictated by visibility and the width of Church Hill and will be 'one way', with traffic signals to manage flows. The location of the proposed temporary crossing provides the optimal position in terms of distance from nearby listed properties without significant compromise of the visibility up Church Hill. It is also situated at a low point in the topography in the area, enabling a low level pond crossing which offers the least impact in terms of flood risk.

The temporary Dutch Ford crossing is proposed to be on the south side of the existing Finchingfield Bridge and is proposed to be constructed using pre-cast pipes that would sit on type 1A material, which would then be placed over a geotextile mat on the prepared pond bed. The sub-base would consist of granular material laid on the prepared existing pond bed and separated via a geotextile layer. Horizontal pipes would be laid within the road construction as shown in the submitted drawings.

Discussions with the Environment Agency have influenced the proposed crossing, and it is acknowledged that the Dutch Ford needs to have sufficient capacity for water flow. It would therefore carry highway loading on top. Material is submitted alongside this planning application that indicates that alternative bridge options could have an environmental impact through demolition, and as such, the proposed Dutch Crossing is shown to have preferable and no overall long-standing environmental impacts.

Few other options are available to improve the village's capacity to handle the bridges closure; these options have been examined and compared in the 'Optioneering' section of this Planning Statement. Implementing the option that results in the least significant impact on economic, social and environmental factors is and has been key to the decision making process.

3.3 Construction and Design Criteria

3.3.1 Construction Process

The demolition of the existing structure and construction of the proposed replacement is to take place over a 10 step process outlined below:

- 1) Construction of temporary carriageway and crossing across the village green and over the pond to avoid the closure of the B1053
- 2) Temporary impoundment of Finchingfield Brook and fluming of flows or partial impoundment of the watercourse and cofferdams in village pond
- 3) Temporary support of Unit 1 The Stores premises
- 4) Partial demolition of The Manse boundary wall (Grade 2 Listed Building) and temporary relocation of domestic heating oil tank

- 5) Careful demolition of the present bridge and retaining walls; demolition of brick retaining wall upstream of bridge
- 6) Construction of the new bridge and retaining walls
- 7) Reconstruction of brick retaining wall upstream of bridge
- 8) Rebuilding of The Manse boundary wall and permanent relocation of domestic heating oil tank
- 9) Unit 1 The Stores premises new damp proof course injection
- 10) Reinstatement of village green and pond

3.3.2 Technical Design Criteria

3.3.2.1 Permanent Actions

Self-weight, super-imposed, carriageway construction and weight of soil in accordance with BS EN 1991-1-1:

- Normal weight reinforced concrete density $\gamma = 25 \text{ kN/m}^3$
- Asphaltic concrete density $\gamma = 24 \text{ to } 25 \text{ kN/m}^3$
- Stone Mastic asphalt density $\gamma = 18 \text{ to } 22 \text{ kN/m}^3$
- Hot rolled asphalt density $\gamma = 23 \text{ kN/m}^3$
- Bridge infill density $\gamma = 18.5 \text{ to } 19.5 \text{ kN/m}^3$
- Brickwork density $\gamma = 18.5 \text{ to } 19.5 \text{ kN/m}^3$
- Abutment and retaining wall backfill density $\gamma = 20.0 \text{ kN/m}^3$

The UK National Annex to BS EN 1991-1-1:2002 [Table NA.1] requires the deviation of the total thickness of waterproofing, surfacing and other coatings to be between +55% and – 40%.

3.3.2.2 Snow, Wind and Thermal Actions

Snow loading - due to the form and location of the bridge snow loading is considered unlikely to be a critical design case for the structure; therefore, snow loading will be ignored (National Annex (NA) to BS EN 1991-1-3 NA.4.1.1).

Wind loading – due to the form and proportions of the bridge wind loading is considered unlikely to be critical design case for the structure therefore wind loading will be ignored.

Thermal actions considered in accordance with Section 6 of BS EN 1991-1-5 and NA to BS EN 1991-1-5, adopting Approach 2 for determination of vertical temperature difference

component.

3.3.2.3 Actions relating to normal traffic under AW regulations and C&U regulations

BRIDGE STRUCTURE:

a) Deck

Load Model 1 (LM1) comprising double-axle concentrated and uniformly distributed loads, which cover most of the effects of the traffic of lorries and cars in accordance with BS EN 1991-2:2003 [4.3.2] and NA to BS EN 1991-2:2003 [NA.2.12 and 13].

Load Model 2 (LM2) a single axle load applied on specific tyre contact areas which covers the dynamic effects of the normal traffic on short structural members in accordance with BS EN 1991-2:2003 [4.3.3] and NA to BS EN 1991-2:2003 [NA.2.14 and 15].

b) Abutments

Horizontal surcharge model for vertically spanning abutments in accordance with PD 6694-1:2011+A1:2020 [7.6.2].

RETAINING WALLS

The model vehicle with the configuration given in NA to BS EN 1991-2 (2003) - Rev 2008 Figure NA.6 will be used and the retaining wall loaded with vehicle loads as described in NA to BS EN 1991-2 (2003) - Rev 2008 NA.2.34.2.

Horizontal surcharge model for vertically spanning retaining walls in accordance with PD 6694-1:2011+A1:2020 [7.6.3.2].

3.3.2.4 Actions relating to General Order Traffic under STGO regulations

BRIDGE STRUCTURE

Load Model 3 (LM3) a set of assemblies of axle loads representing special vehicle (e.g. for industrial transport) SV80 in accordance with BS EN 1991-2:2003 [4.3.4] and NA to BS EN 1991-2:2003 [NA.2.16.1, 2.16.3 and 2.16.4].

RETAINING WALLS

Load Model 3 (LM3) a set of assemblies of axle loads representing special vehicle (e.g. for industrial transport) SV80 in accordance with BS EN 1991-2:2003 [4.3.4] and NA to BS EN 1991-2:2003 [NA.2.16.1, 2.16.3, 2.16.4 and 2.34.3] and their horizontal surcharge

3.3.2.5 Footway or Footbridge Variable Actions

BRIDGE STRUCTURE

Load Model 4 (LM4) crowd loading, uniformly distributed loading on the verges in accordance with BS EN 1991-2:2003 [5.3.2.1] and NA to BS EN 1991-2:2003 [NA.2.36].

Concentrated load in accordance with BS EN 1991-2:2003 [5.3.2.2].

RETAINING WALLS

Outline Approval in Principle Finchingfield Bridge - On-line Replacement (Bridge and other Highway Structures), Eurocodes ECC Br No. 26 Load Model 4 (LM4) crowd loading, uniformly distributed loading on the verge in accordance with BS EN 1991-2:2003 [5.3.2.1] and NA to BS EN 1991-2:2003 [NA.2.36]. and their horizontal surcharge

3.3.2.6 Accidental actions

BRIDGE STRUCTURE

Vehicle accidental actions in accordance with BS EN 1991-2:2003 [4.7.3].

Vehicle collision force on the parapets for Class B normal containment rigid parapets (e.g. reinforced concrete parapets) in accordance with BS EN 1991-2:2003 [4.7.3.3] and NA to BS EN 1991- 2:2003 [NA.2.30].

Vehicle collision forces on kerbs in accordance with BS EN 1991-2:2003 [4.7.3.2].

RETAINING WALLS

Vehicle accidental actions in accordance with BS EN 1991-2:2003 [4.7.3].

Vehicle collision force on the parapets for Class B normal containment rigid parapets (e.g. reinforced concrete parapets) in accordance with BS EN 1991-2:2003 [4.7.3.3] and NA to BS EN 1991- 2:2003 [NA.2.30].

3.4 Village Green Restoration and Net Gains

In order to work within Green and pond areas at the centre of Finchingfield it is proposed that they will be de-registered as Common Land / a Village Green. This is considered a separate application and is included within this Planning Statement for information only.

In order to lend weight to the de-registration application the County Council / applicant has purchased 'exchange land' which will be registered as part of the de-registration application and gifted to the Parish Council. Once the work has been completed, the majority of the land proposed for de-registration will be newly registered – excepting those areas that will be built on by the widened bridge structure and a minor kerb line adjustment up the Causeway. This ensures a long term net gain in terms of the footprint of Common Land in Finchingfield and seeks to offset some of the effects of the temporary structure. The areas for de-registration and registration are provided below.

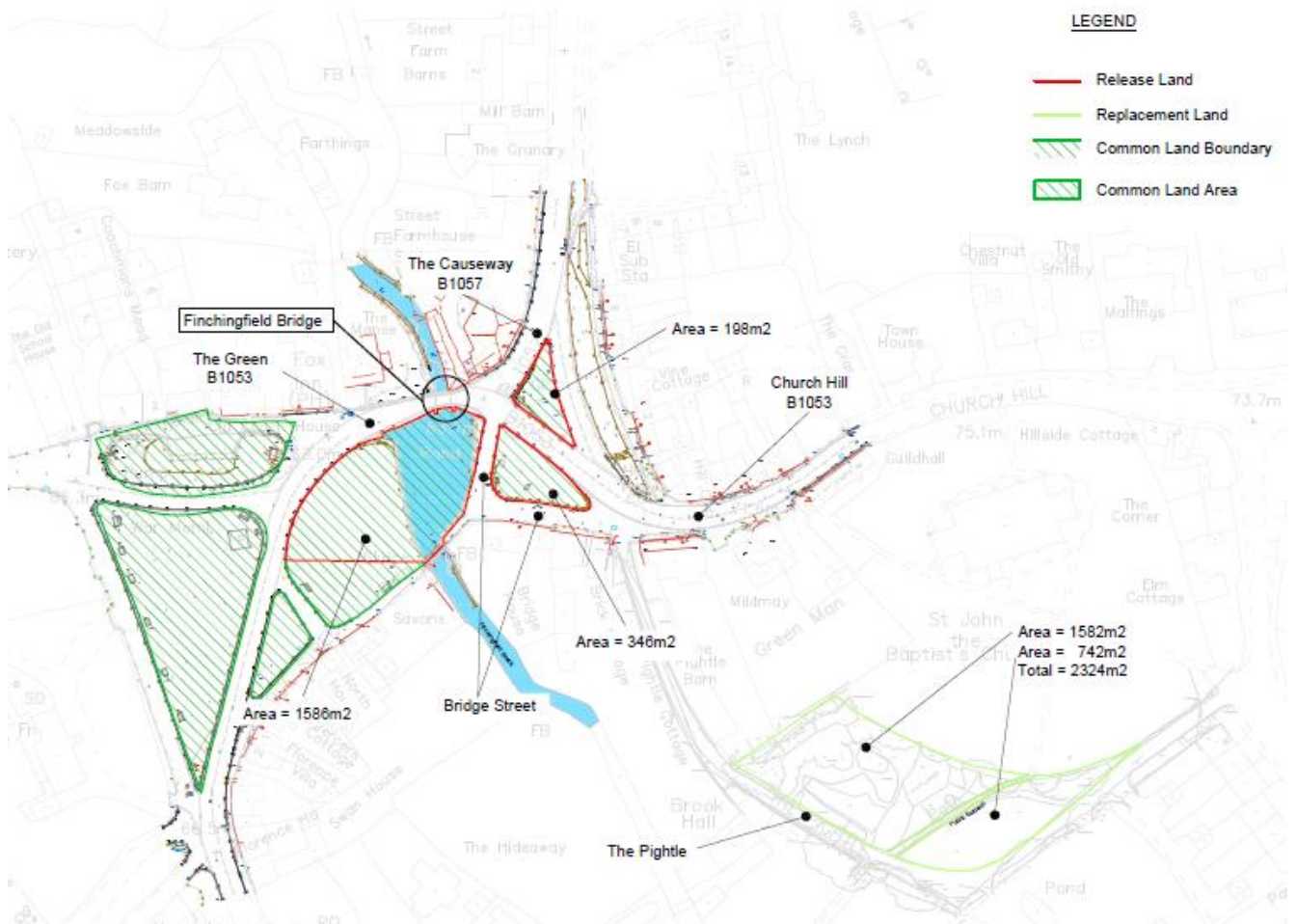
Table 1: Summary of Village Green registration, de-registration and net gains

Description	Area (m2)
Area of pond and Green west of pond	1,586
Areas for de-registration	
Area of Green east of pond, bridge street to west and south of area	346
Area of Green north of the B1053, straddled by the B1057	198
Total Land to be de-registered (Release Land)	2,130
Area for registration, exchange land	
Area of land north of the Pightle, bordered to north by the St Kohn the Baptist Church	2,324
Initial net gain in Common Land / Village Green	194
Following completion of the work the following areas will be re-registered	
Area of pond and Green west of pond	1,539
Area of Green east of pond, bridge street to west and south of the area	346
Area of Green north of the B1053, straddled by the B1057	188
Total land to be re-registered	2,073
Providing a permanent net gain of Common Land / Village Green in Finchingfield	2,267

The figure below shows the extent of the Common Land / Village Green net gains, as well as

the areas of de-registration and registration once the proposed works (permanent and temporary) have been completed. The area of light green represents that area purchased by ECC and to be gifted to the Parish Council. Please note that the below figure has been submitted as part of this application for information purposes, although acknowledgement should be made that this is a separate application and not one related to this planning application.

Figure 4: Village Green / Common Land net gains



4. Optioneering

4.1 Setting the Context

In addition to deterioration creating a structure that has been classified as weak, largely due to structure’s age, Finchingfield Bridge is also unsuitable for many of the vehicles that regularly cross it. This is due to the angles of approach and narrow clearance between the parapets of the bridge. Updating the bridge’s form to reflect current design standards will improve the structure’s ability to service modern transport needs, while also improving the safety of road users.

4.2 Previous Optioneering – Mouchel Report (2010)

Essex County Council commissioned Mouchel to undertake an Option Study Report in January 2010 in response to the structural assessments undertaken in 1994 and 2009/10. This report put forward three options for the strengthening and/or widening of Finchingfield Bridge, a weight restriction was briefly considered, however, the B1053 and B1057 that the bridge services, are both relatively busy B-classified roads, and as such, a weight restriction would result in the diversion of many larger vehicles. The three proposed options and their advantages / disadvantages are outlined below:

4.2.1 Proposed Option 1: Strengthening of Masonry Arch and Extension of Mass Concrete Arch

Advantages	Disadvantages
<ul style="list-style-type: none"> • The appearance of the structure will be maintained. • The carriageway over the structure will be widened and alignment improved. The hump over the bridge will be reduced in severity, which will contribute to increased visibility and safety over the bridge. • The original arch structure will be retained, thereby saving on demolition costs and preserving part of the history of the bridge • By utilising the MARS system of repair, the road levels/construction depth will not have to be increased in order to improve the 	<ul style="list-style-type: none"> • Traffic cannot be maintained over the bridge throughout the works. Either a road closure will have to be provided with a long and inconvenient diversion, or alternatively, a robust temporary Bailey Bridge or similar would have to be installed across the middle of the pond. • The existing foundations for the present south wingwall extend 1.5m south out into the pond. These foundations will conflict with the proposed piling for the new wingwall and will therefore have to be demolished. • Piling will have to take place close to the existing structure,

Advantages	Disadvantages
<p>strength of the arch.</p> <ul style="list-style-type: none"> • Repair work can easily be inspected in future years 	<p>therefore driven piles would not be appropriate even though quick to install. CFA piles will take longer but will be quieter and cause no significant vibration.</p> <ul style="list-style-type: none"> • The existing anchors spanning transversely through the arches will require extending through the proposed arch. Therefore the structure will have to be temporarily propped whilst the tension is realised. • The MARS system of arch repair will leave a visible scar on the soffit of the masonry arch, which can take years to weather and blend into the brickwork.

4.2.2 Proposed Option 2: Strengthening of Masonry Arch and Replacement of Mass Concrete Arch

Advantages	Disadvantages
<ul style="list-style-type: none"> • The appearance of the structure will be maintained, or perhaps improved. The new concrete extension would be profiled to match the original masonry arch so improving the appearance over Option 1. • The curve of the carriageway over the structure will be reduced. The width of the carriageway over the structure will be increased. The hump over the bridge will be reduced. All these measures will contribute to increasing road visibility and improve safe road use over the bridge. • Repair work can be easily inspected in future years. 	<ul style="list-style-type: none"> • Traffic cannot be maintained over the bridge throughout the works. Either a road closure will have to be provided with a long and inconvenient diversion, or alternatively, a robust temporary Bailey Bridge or similar will have to be installed across the middle of the pond. • Piling may strike obstructions since the position of the back of the existing abutments is not known precisely. • Piling will have to take place close to the existing structure, therefore driven piles would not be appropriate even though quick to install. CFA piles will take

Advantages	Disadvantages
<ul style="list-style-type: none"> • By utilising the MARS system of repair, the road levels/construction depth will not have to be increased in order to improve the strength of the arch. • The new concrete arch and brick cladding will be highly durable and should require no significant maintenance for many years. 	<p>longer but will be quieter and cause no significant vibration.</p> <ul style="list-style-type: none"> • The MARS system of arch repair will leave a visible scar on the soffit of the masonry arch, which can take years to weather and blend into the brickwork. • Works will take slightly longer than Option 1, with a longer road closure needed.

4.2.3 Proposed Option 3: Replacing whole structure with a new masonry arch

Advantages	Disadvantages
<ul style="list-style-type: none"> • Although the existing structure will be demolished, the appearance of the replacement structure will closely match the external appearance of the existing structure. • Require significantly less maintenance in comparison with the alternative options since the structure will be entirely new. • Avoids the need for the time-consuming MARS repair system. 	<ul style="list-style-type: none"> • Traffic cannot be maintained over the bridge throughout the works. Either a road closure will have to be provided with a long and inconvenient diversion, or alternatively, a robust temporary Bailey Bridge or similar will have to be installed across the middle of the pond. • It is likely to be extremely difficult to obtain planning approval for the replacement of the entire bridge, as it is located within a conservation area and described as a 'building with townscape merit'. • Finchingfield Bridge is connected to the Family Funeral Directors G. W. Hardy & Son building. If the structure is demolished temporary works will be needed to prop the Funeral Directors building and ensure its stability. Furthermore, any excavation or vibration could undermine the stability of the adjacent building.

Advantages	Disadvantages
	<ul style="list-style-type: none"> • Construction time may be longer compared Option 1 and 2, and therefore a longer road closure will be needed. • Because of the more complex river works, and the longer duration, this will be more expensive than Option 1 & 2.

4.3 Justification for the Temporary Crossing Proposal

The replacement structure and the demolition work required have not raised any significant concerns through pre-application discussions, however, the proposed temporary crossing has been highlighted as having the potential to impact on both the landscape of the area and the historic environment / assets found within Finchingfield. The pre-application letter (dated 24/11/2021) focused predominantly on heritage matters, in accordance with the requirements of paragraph 202 of the NPPF, which confirms that ‘development that will lead to less than substantial harm to the significance of a designated heritage asset should be weighed against the public benefits of the proposals.’

A public benefits document was produced in November 2021 which sought to examine the economic, social and environmental impacts of not having a temporary crossing in place for the duration of the demolition / reconstruction works. Impacts throughout this document were largely evidenced by views gathered from public information events and quotes taken from news stories regarding previous closures of the bridge. It is also acknowledged that impacts would not only be found locally at Finchingfield but would be widespread due to the village’s position in the road network.

4.3.1 Social & Economic Considerations

Although a footbridge exists for pedestrians to the south, the disruption created by temporarily closing the only east-west traffic route through the village for up to nine months is considered significant, impacting on a number of themes that contribute to a sustainable community. Discussion regarding these themes, including evidence as to the significant majority public (and political) support for a temporary bridge, are included within the submission document ‘Finchingfield Bridge - Public benefits for Installation of a Temporary Vehicle Crossing’ (November 2021). In short however, these discussion points amount to:

- Adverse effects on businesses (including the Post Office, the Finchingfield Lion Public House, the local garage selling fuel, and local farms). Some of these businesses have identified a likelihood of closure should they become less accessible to large parts of the community and tourists for possibly nine months.
- Adverse effects on residents (notably those with mobility issues) accessing the Freshwell Medical Centre.

- Adverse effects on the Finchingfield Academy on grounds of inclusive accessibility and also accessing hot meals for school lunches.

As stated in the Braintree District Local Plan at paragraph 4.26, *‘to maximise the benefits of tourism to rural economies, tourist development should be located where visitors can access local shops, pubs and other services.’* Although the proposal is not directly related to tourism development, it is considered to have a strong influence on it within the local context. The proposal is seeking to maintain the current strategic importance of the route through Finchingfield for residents, tourists and local businesses. It is therefore strongly considered that the temporary crossing proposal is supported by this statement of the Local Plan and can be evidenced by local testimonials.

For further consideration is the fact that rural Braintree is one of Essex County Council’s six priority areas in their Levelling Up strategy; residents in the area can face more difficulties accessing jobs, services and social opportunities compared with more densely populated parts of the county. As a result, initiatives are being rolled out that include new focused activity to address issues like digital and transport connectivity, social isolation, access to employment, and community wellbeing. These correlate to the issues identified within the public comments in support of the temporary bridge; isolation in the rural area can be expected to be exacerbated by the closure of Finchingfield Bridge without a temporary crossing.

It is considered that these social implications should be given significant weight, especially in light of what may be a difficult winter for all aspects of the community due to the cost of living crisis. The residual effects of the Covid-19 pandemic are also being felt on local businesses and there is much in the way of anecdotal evidence within the ‘Finchingfield Bridge - Public benefits for Installation of a Temporary Vehicle Crossing’ document as to the financial effects of not permitting a temporary bridge.

The centre of Finchingfield is where the B1053 and the B1057 meet and represent strategic roads in the local network moving north-south and east-west to neighbouring villages. The movement of vehicles along these roads is essential for emergency services and other larger vehicles used for refuse collections or bulky good deliveries, as well as farm vehicles. Should a temporary bridge not be included within the proposal, ideally these larger vehicles would be diverted even further than those for car trips, which may in theory utilise minor roads. Large vehicles may attempt to use minor roads to re-join the B1053 or B1057 that do not have the size or necessary capacity to accommodate such vehicles, which has further safety implications. The only obvious routes that could be taken that allow the movement of traffic along B-classified roads are long, and movements could be expected on classified unnumbered roads or unclassified roads as a result, particularly in any emergency situation. Sub-section 4.3.3 below expands further on these implications.

4.3.2 Environmental Considerations

The aforementioned ‘Finchingfield Bridge - Public benefits for Installation of a Temporary Vehicle Crossing’ includes discussion on the option of a diversionary route, identified as some 15 miles in length. Notwithstanding the social and economic implications summarised above, planning balance needs to be further considered from an environmental standpoint.

The details of the proposed temporary crossing have factored in the recommendations of the pre-application advice, as well as the findings of numerous assessments, and includes suitable mitigation where necessary. These documents all form part of the submission documents and have been produced by specialists Place Services (Heritage Impact Assessments) and The Morton Partnership (Structural Assessment Reports of the various listed structures).

The 'Essex County Council Pre-Application Planning Advice' dated 24/11/2021 indicates that the possible harm from a temporary bridge is related 'in principle' to its proposed location; notably the presence of numerous above and below ground heritage assets associated with the location of the temporary road alignment. This position is influenced by specialist advice supplied to the determining authority by Place Services, dated 14/04/2021.

In both cases of comments specific to Historic Buildings and the Historic Environment (archaeology), it was recommended that *'the impact of the new-routed traffic on Listed buildings adjacent to the Green, in particular Bridge House, Brick House and Stowes And Mildmay (all Grade II Listed) [...] would require robust assessment and mitigation (and) a detailed structural assessment of the buildings and the physical impact of the scheme would be required'* and *'a desk based assessment should be completed which will take into account the nature of the proposed works and the likely impact on archaeological remains'* respectively.

Although the Heritage Impact Assessment (HIA) regarding the temporary crossing recommends that *'other alternatives are considered'* it should be noted that the assessment concludes that the effects highlighted are, importantly, *'considered less than substantial'* and that there are significant and evidenced public benefits of the proposal to consider under paragraph 202 of the NPPF.

The HIA also considers paragraphs 197(c) and 206 of the NPPF relevant to the temporary bridge proposal which relate to *'the desirability of new development making a positive contribution to local character and distinctiveness'* and favourable treatment to *'proposals that preserve those elements of the setting (of a Conservation Area) that make a positive contribution to the asset'*. The temporary nature of the proposed bridge should be strongly considered in this regard, with effects related to aesthetics only relevant in the short term.

The harm associated with the listed structures are considered in the various reports produced by The Morton Partnership and conclude that in the predominant instance of Brick House, mitigation from traffic vibration can be minimised by relocating traffic lights away from the building so there is less start/stop movement in close proximity. This is subsequently proposed. Furthermore the location of the proposed lights ensure that any stationary vehicles will then be heading downhill, and there can be expected to be less vibration associated with starting and driving from a stationary position as a result.

Irrespective of the findings of these structural reports, the temporary crossing and carriageway is proposed to be further from the dwellings at Brick House and Bridge House than the current carriageway is to other listed structures which show no physical harm from the current level of traffic. This is evident from the proximity of the current road being less than 1.5 metres from the Grade II Listed 'Mildmay' on Church Hill to the immediate east of

the proposed temporary crossing, which is in good repair, and the fact that the temporary carriageway would be approximately 4.0 metres from the Listed Buildings of Bridge House and Brick House.

4.3.3 Alternatives & the likely effects of not including a temporary bridge

The location of the proposed temporary crossing is considered the only realistic and feasible option available; it is the narrowest stretch of the watercourse, has no physical structures that would impede it, and it can be connected to the existing highways network.

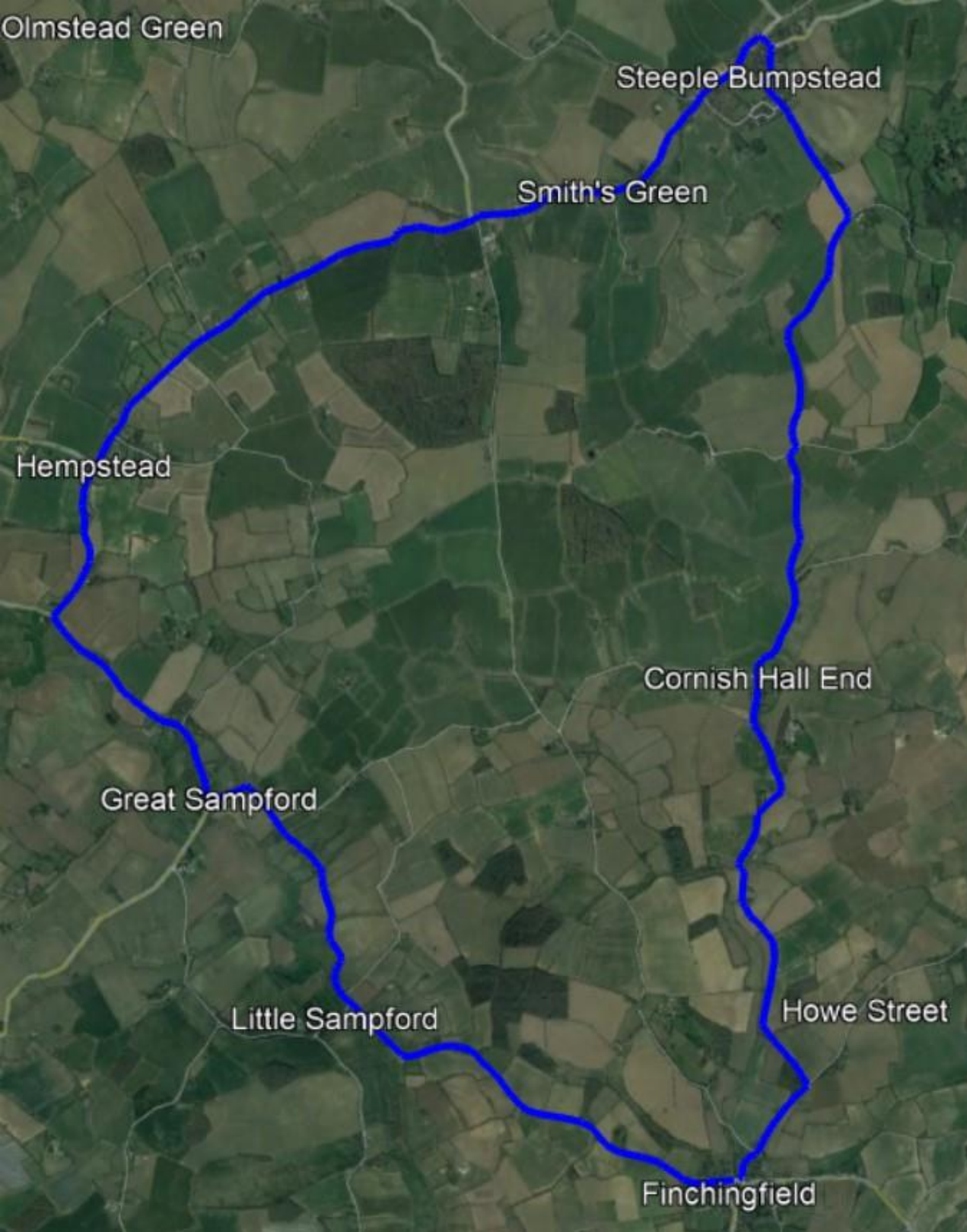
In considering alternatives to the temporary crossing, it is considered important to offer a high level discussion on the potential environmental effects of both the identified diversionary route, and any subsequent 'shorter' routes that may see an increase in traffic as a result of not installing a temporary crossing. Please note that the social and economic considerations already having been set out in this section.

4.3.3.1 The Diversionary Route (alternative)

The figure below shows the diversionary route approved as the only suitable option by Essex Highways, and the principal alternative to the temporary crossing at Finchingfield for HGVs and light traffic. It has been identified as the best possible route that would offer comparable safety and capacity that currently use the existing Finchingfield Bridge.

Should Finchingfield Bridge be closed, then the route to access one side of the village to the other would increase transport distances to a large degree – some 15 miles in length. A total of 19 'Advanced Warning' information signs would be required to ensure that road users know to use this route.

Figure 5: The Diversionary Route



Aside from road suitability, capacity, and the safety considerations of diversion route options, there are general associated air quality implications of any option that does not minimise the impact of traffic movements. Any diversionary or alternatively used route can be considered to have implications in regard to vehicle emissions associated with increasing transport distances and these will be experienced in numerous neighbouring villages, where people live.

Additionally, the diversionary route would require traffic movements to be diverted through the Conservation Areas of Steeple Bumpstead, Hampstead and Great Sampford. These Conservation Areas include multiple listed buildings, many of which would see an increase in traffic in very close proximity. Within Steeple Bumpstead for example, this would include the Grade II* Listed Moot Hall, which lies very close to the road as it bends to the right.

The diversionary route identified is considered to not be without environmental implications, which can offer added weight in support of the proposal to include a temporary crossing. Although the effects could be perceived as similarly temporary along and through the diversionary route, the implications on people, the local economy, and heritage assets outside of Finchingfield village may not be.

4.3.3.2 Alternative routes that may also see an increase in use

It is possible that despite a clearly defined diversionary route, alternative local roads may also be used; the only possible diversionary route identified as an alternative to the proposed temporary crossing is necessarily constricted to B-classified roads and lengthy as a result. Shorter inappropriate routes may see a rise in traffic movements as a result. Although a diversionary route would be signposted, there would be no guarantee that lower category roads would not additionally be used, particularly for light traffic.

A demonstration of the implications of not having a temporary bridge can be made by looking at the alternative routes available in the local area that encompass other B-classified or minor roads. The below figure shows the diversionary route (blue), and a southerly route in yellow.

Figure 6: Alternative route by B-classified road (yellow)

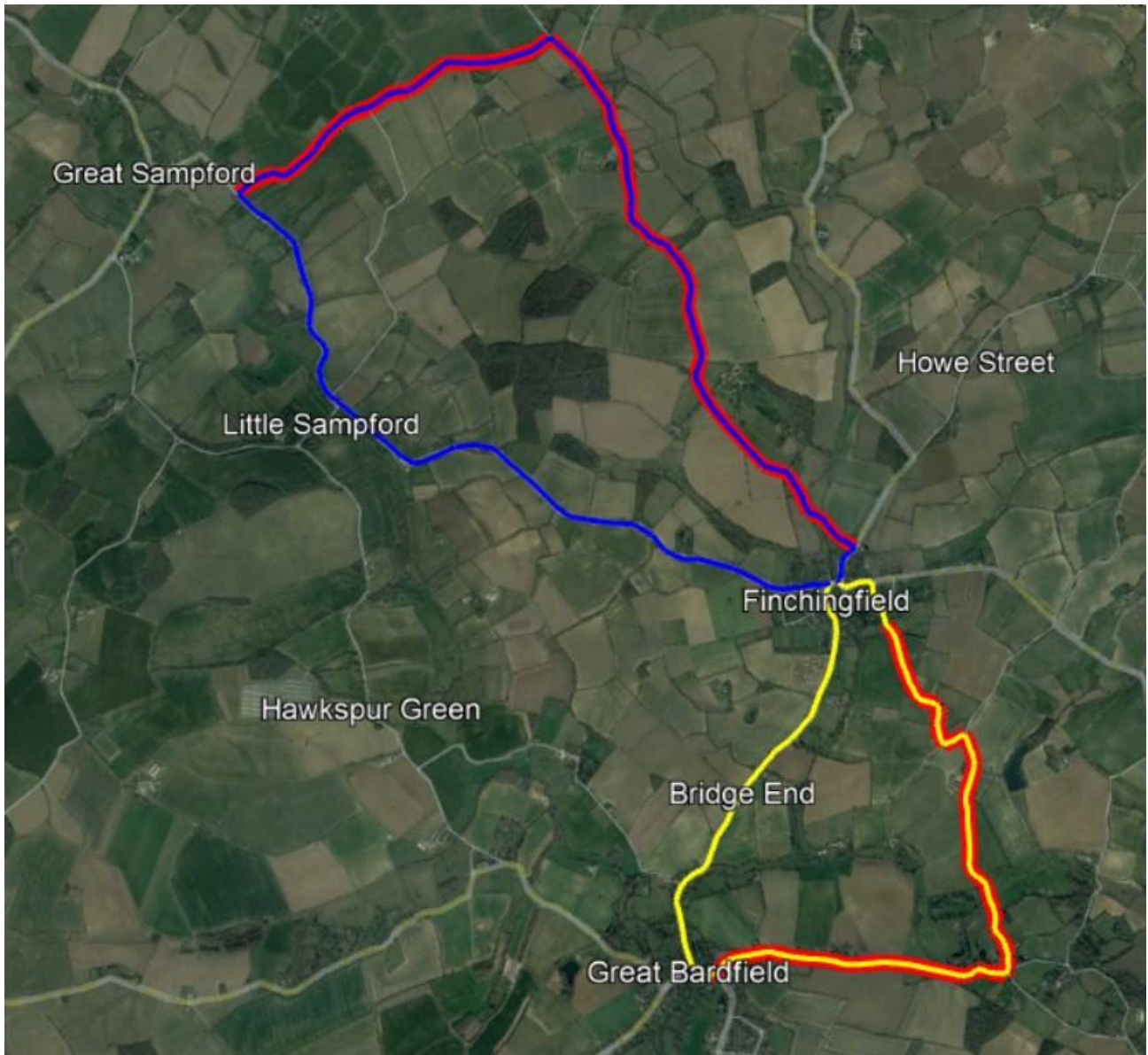


The southerly route would have similar impacts as the diversionary route, with vehicle movements travelling directly through several Conservation Areas (Wethersfield, Great Bardfield, and adjacent to the Conservation Area of Great Saling). At some 12 miles in length, and entirely on B-classified roads, this southerly route also see an increase in traffic movements regardless of whether any preferred diversionary route is implicated and signposted. It can be expected that a proportion of road users will use the shortest routes possible.

As previously mentioned, shorter inappropriate routes also exist in and around Finchingfield, which again may be used regardless of any diversionary route being implemented and

signposted. The extent of these local alternative routes, that may be used, is shown in the figure below, with the southerly alternative route in yellow and a northerly alternative route in blue. Those areas marked with a red highlight are the extent of the Protected Lanes on both routes.

Figure 7: Alternative routes to access east Finchingfield from west and vice versa, with Protected Lanes



Of the four access roads into and out of Finchingfield, two of these are Protected Lanes and the others are the B1053 and B1057. Mill Road enters the village from the southeast and extends south (via a stretch of Daw Street - also a Protected Lane) and then west to Great Bardfield. This road forms part of the shortest distance diversionary route to access west Finchingfield from the east and vice versa. To the north, access to Finchingfield to the east would be via an unnamed Protected Lane on a long stretch. Both diversionary routes include

long stretches of a single lane highway.

Similarly, those shortest alternative routes would be at least in part diverted along Protected Lanes. Protected Lanes are designated due to the features that can be found along them, and these can be destroyed culminating in their eventual loss of their designation and significance. Protected Lanes tend to be very variable in width, often within a short distance and many have deteriorated due to the increasing rise (over time) in the number, size and diversity of motorised vehicles using minor rural roads. The Braintree District Protected Lanes Assessment (July 2013) indicates that, *'consideration should be given to exploring options and partnerships for influencing user behaviour and applying intelligent and positive measures of highway management that will serve to encourage local journeys to be made on bicycle or foot, and for recreation, and reduce the impact of vehicles on the historic fabric of lanes, whilst maintaining their local character.'*

5. Commissioned Studies: Evidence Base

5.1 Ecological Impact Assessment (October, 2021)

The Ecological Impact Assessment was undertaken using a three-step methodology: Desk Study, Field Survey and Impact Assessment. This sequential process enables the identification of designations either on or within proximity to the site that may be of significance. Biological records are also obtained for the site to also inform the assessment – these were requested in this case from Essex Field Club (EFC).

A site visit was undertaken in August 2015, with the two further surveys undertaken in September 2018 and May 2020, a final survey was undertaken on the 15th July 2021. This enabled the habitats of the development site to be mapped in line with Phase 1 Habitat survey methodology. The purpose of these surveys was to assess the site for the presence/absence of legally protected/noteworthy species and habitats.

Potential Impacts were identified and assessed; each impact was characterised and also assigned a quantified likelihood of occurrence. Mitigation options are provided alongside these impacts. These are highlighted in the table below.

Table 2: Review of impacts and recommendations

Feature	Impact	Measures	Compensation / Enhancements
Bats – Foraging and commuting	Potential impact to foraging and commuting bats via the provision of lighting during the construction phase.	A wildlife sensitive lighting scheme should be embedded into construction phase.	N/A
Otter	Potential impact to foraging and commuting Otter via the provision of lighting during the construction phase.	A wildlife sensitive lighting scheme should be embedded into construction phase.	N/A
Nesting Birds	Potential disturbance to nesting birds & loss of nesting habitat.	Vegetation clearance to either be undertaken outside nesting season or after an ecologist has confirmed the absence of nesting birds.	Provision of bird nest boxes.

Feature	Impact	Measures	Compensation / Enhancements
Invasive Species	Increases in the distribution of Signal Crayfish.	Biosecurity measures.	N/A
Other measures – precautionary pollution controls	N/A	Ensure adequate provision of spill kits and wash down areas on site.	N/A
Other measures – Soft landscaping	N/A	Ensure village green is reinstated following completion of scheme with the same visual appearance.	N/A

Proposed ecological enhancement suggestions for the scheme can be found below. The NPPF outlines the need for applications to demonstrate measurable net gains for biodiversity – found under paragraphs 174[d] & 180[d]. Proposed ecological enhancements include the installation of bird boxes within trees north of the site.

It has been advised that these measures are secured as part of a Biodiversity Enhancement Strategy. This should include the following details:

- Purpose and conservation objectives for the proposed enhancement measures;
- Detailed designs to achieve stated objectives;
- Locations of proposed enhancement measures by appropriate maps and plans;
- Persons responsible for implementing the enhancement measures; and
- Details of initial aftercare and long-term maintenance

5.2 Finchingfield Bridge Landscape Visual Appraisal (June, 2022)

A Landscape Visual Appraisal (LVA) of the proposal has been undertaken, which identifies the following conclusions on landscape and visual factors:

- The development will have a minor effect at the scale of the B3 Blackwater and Stour Farmlands Landscape Character Areas (LCAs) - The new bridge proposal would constitute a minor change to LCA characteristic features as it is a replacement bridge with a slightly wider footprint but of similar design and layout.

The impact will be limited to a very small area of the LCAs and therefore the proposal is not of a scale to have a significant effect on the character of the wider landscape.

- As a replacement bridge, it will reflect the existing settlement pattern and not have an adverse impact on the Finchingfield Brook, duck pond or village green.
- In terms of the B9 Stambourne Farmland Plateau and the local landscape features, it is judged that the proposed development will have a minor impact on the landscape character - the topography of the site and the existing settlement's built form segregates the site from the surrounding wider landscape. The scale of the proposed development is limited to a discreet area and therefore the landscape effect is reduced.
- The development will have a moderate-minor landscape effect on the Finchingfield Conservation area - the conservation area is centred around the village green which includes the duck pond and bridge. While the construction of the bridge is intended to be as close as possible to the existing structure, there will be a minor loss of pond area and change in proportions of the space due to the widening of the bridge.
- Visual impacts are considered upon sensitive receptors such as residents with ground floor windows, recreational users and tourist, as well as less sensitive receptors such as upper floor residential views and views from roads. Visual impacts resulting from the development vary from minor to moderate neutral.
- The visual assessment showed that the site is very well contained and sits within an intimate village landscape. This means that any proposal will only have a visual effect at a very localised level, limited to the village green and short sections of the approach roads.
- As a whole, there are no significant long term (longer than 15 years) effects proposed from the development. There will be some more obvious visual effects that may be noticeable in the shorter term (estimated 2 years) during the construction and reinstatement period.

5.3 Landscape – Feasibility Study: Finchingfield Village Green Reinstatement Works (July, 2021)

As part of the bridge replacement schemes evidence base a feasibility study has been produced to investigate three methods of reinstating the three areas of grass that will be affected through the demolition and construction of Finchingfield Bridge and the associated temporary bridge.

The implications to the Village Green require timely rectification due to the historic significance and high-profile tourist nature of the green and Finchingfield as a whole. The areas to be reinstated must be returned to their original state, such that the works that had taken place were undetectable.

Three options were assessed and they are as follows:

- 1) Lift existing grass turf before works commence on site, transport off site to be relaid and maintained for the duration of the site works, then lift and relay back onto the de-compacted areas.
- 2) Identify current grass cultivar mix, lift existing grass and dispose off-site, de-compact areas and reinstate the areas with new ‘designed’ turf.
- 3) Identify current grass cultivar mix, lift existing grass and dispose off-site, de-compact areas and establish grass from ‘designer’ seed.

Table 2 below shows the scored matrix for each option utilising three key criteria; speed of visual establishment, potential risk and cost (greater scores are better).

Table 3: Scored matrix

Criterion	Option 1	Option 2	Option 3
Speed of visual establishment	3	3	1
Potential Risk	1	3	1
Cost	2	1	3
OVERALL SCORE	6	7	5

Option 2 (Designer Turf) is recommended in order to reinstate the green areas to their original state in a timely manner.

5.4 Preliminary Arboricultural Impact Assessment and Method Statement (November, 2021)

The Arboricultural Impact Assessment (AIA) identified four individual/groups of trees within the site. The impact assessment is based on the development’s impact on root protection area (RPA) encroachment and disturbance, in addition to any pruning requirements for areas above ground.

The table below contains information on which trees will be affected by the development.

Table 4: Trees affect by proposed development

Impact	Reason	Cat. A	Cat. B	Cat. C
Removal	To facilitate the bridge replacement and	N/A	T1	N/A

Impact	Reason	Cat. A	Cat. B	Cat. C
	associated level changes			
Partial removal	To facilitate associated level changes for river diversion	N/A	N/A	G2

All tree removals that are expected to take place as a result of this development are considered to be in good condition, and also contribute to the landscape character of the area. No detrimental impacts on the retained trees' condition or amenity value are expected, provided development follows the recommendations of the Arboricultural Method Statement and protection guidance within the Tree Protection Plan.

If the development was to require excavation to take place within an RPA, Arboricultural advice should be sought before the occurrence of further work. The most likely phase to result in harm is construction; compounds, access and storage should be sited in areas that would result in minimal impact, furthermore, any proposed compounds should be located outside the construction exclusion zone (CEZ). Protective fencing routes should be agreed and erected prior to the commencement of any work to ensure trees outside the construction site are protected. Materials should not be stored within these areas.

5.5 Archaeological Desk-based Assessment (October, 2021)

An Archaeological Desk Based Assessment has been prepared as part of the baseline information for the demolition and reconstruction of Finchingfield bridge, this has included the use of existing data, analysis of historic sources and a site survey. The assessment focuses specifically on the potential for below ground archaeology within the site area and whether it could be affected by the development and utilises best practice procedures within *Historic Environment Good Practice Advice in Planning Note 3 (Second Edition): The Setting of Heritage Assets* (Historic England, 2017) & *Standard and Guidance: Desk Based Assessments* (Chartered Institute for Archaeologists, 2012).

The 0.5km study area surrounding the site has a medium potential for archaeological evidence of occupation based on HER record searches. Additionally, there is high potential for medieval / post medieval deposits. The central green has the highest potential for preserved deposits of medieval origin. As a result, a programme of archaeological evaluation is recommended to assess surviving deposits and their significance.

A range of recommendations have been proposed and are outlined below:

- Geophysical survey of the Green on both sides of the present pond. This to define if there is earlier occupation in these areas that will be impacted by the new temporary bridge;
- The above to be followed by trial trenches if archaeology is identified in the geophysics or if the geophysics is not successful.

- Archaeological monitoring of geotechnical pits associated with the diversion of the river. Potential for targeted test pits along the length of the diversion to assess the archaeological depth of deposits.
- Archaeological monitoring of any further test pits excavated on the present bridge site.
- The bridge will require archaeological recording undertaken at some stage, it may be worth completing this now if a programme of work is being undertaken anyway.

5.6 Heritage Impact Assessment (October, 2021)

A Heritage Impact Assessment has been prepared as part of the developments evidence base, in order to assess the significance of heritage assets within proximity to the proposed development site. The assessment utilises the four-step process within Historic England's guidance: The Setting of Heritage Assets. The process is as follows:

- Identify which heritage assets and their settings are affected
- Assess the degree to which these settings make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated
- Assess the effects of the proposed development, whether beneficial or harmful, on that significance or on the ability to appreciate it.
- Explore ways to maximise enhancement and avoid or minimise harm.

The site is at the core of the Conservation Area and 14 listed buildings are located in the areas adjacent to the site; this includes both Grade I and II structures and non-designated heritage assets.

The assessment identified direct impacts arising from the replacement bridge on two of these structures, these being the Manse (Grade II) and the Greedy Duck (non-designated heritage asset). The replacement bridge is considered to pose the least potential impact provided that an appropriate traditional design is used. The temporary bridge is considered to have the most potential harm, both on the character and appearance of the Conservation Area and also on the setting of a number of listed buildings. There could also be direct harmful effects, arising from the road realignment required to facilitate the bridge.

All harm identified is considered to be less than substantial, paragraph 202 of the NPPF should be considered and additionally paragraphs 197(c) and 206.

5.7 Structural Assessment Reports (Building Surveys)

The Morton Partnership have been commissioned to undertake structural assessment reports on the various potentially effected listed buildings in proximity to the proposal area. These assessments identify the likely form of construction of each building, where this could have been established, and record any obvious defects. These reports form part of the submission documents associated with this planning application.

5.7.1 Brick House, Finchingfield, Essex, CM7 4JS (August, 2021)

The assessment for the Grade II listed Brick House identifies that the proposed temporary road will run close to The Brick House and Bridge House and be on reinforced earth across the pond with a pre-cast concrete box opening for the river. The position of the temporary road has been dictated by visibility and the width of Church Hill.

It adds that for Brick House the position of the temporary road in close proximity to the north elevation of the building and the boundary railing and plinth, means that the building is likely to be vulnerable to traffic vibration as well as possible construction activities, dependent on their nature which is not yet defined. The boundary railing is in extremely close proximity to the temporary road and thus at risk from damage. The new temporary bridge will be one way with traffic signals to manage flows.

The assessment highlights a number of potential issues related to the proposed construction activities. These include vulnerable lath and plaster ceilings, some lath and plaster to walls, loose pointing to external walls, which may collapse if construction vibration occurs, or opening up of existing previous crack and repair positions etc. to either brickwork or render. Due to the very high standard of finishing any repair works will need to be of the same high standard.

Mitigation is considered possible, however. The assessment considers that wherever works are carried out appropriate materials should be used which are compatible to an historic building, or to the later extensions respectively. Normally these will be traditional materials such as lime mortar. Wherever possible air flow should be incorporated or maintained, i.e., in the roof etc. Any works or alterations will require consent from the Local Authority and even repair works should be discussed for guidance to ensure that these are carried out appropriately.

5.7.2 The Greedy Duck, Finchingfield, Essex, CM7 4JS (August, 2021)

The Greedy Duck is in good structural condition with no evidence of any significant defects. The assessment for this non-designated heritage asset identifies that if underpinning is proposed it is assumed that this will be mass concrete traditional underpinning as opposed to piled underpinning with needle beams or similar. A careful methodology will need to be prepared for the sequencing of this as well as the details of the underpinning which will relate to the existing foundation details and ground conditions. With any underpinning scheme there will be some risk of differential movement between the parts underpinned, and those not, due to the different foundations, as well as any initial construction settlement as the structure 'settles down' on its new foundations.

The assessment adds that mitigation such as transition underpinning may assist in reducing this risk. Regarding the risks of differential movement between elements with new foundations and retained existing structures, the assessment concludes that there are no apparent significant vulnerabilities noted, although finishes could be affected by the nearby construction activities both within The Greedy Duck, if retained, or the adjoining building to the north, depending on where the construction delineation line is made.

5.7.3 Bridge House, The Green, Finchingfield, Essex, CM7 4JS (August, 2021)

The assessment identifies that Bridge House is in reasonable overall condition and is certainly performing acceptably from a structural perspective, with no evidence of any significant defects. The position of the temporary road would be in close proximity to the north elevation of the building, meaning that the building is likely to be vulnerable to traffic vibration as well as possible construction activities, dependent on their nature.

The assessment adds that work elsewhere that The Morton Partnership have undertaken suggests that the greatest vibration effects from traffic can occur when vehicles start and stop. Large lorries or similar can 'judder' as they brake as well as when they start from a standstill. The traffic lights outside the property mean that this effect is possible here. Whilst the level of such vibration, elsewhere, has been measured as below threshold values expected for damage, where fabric is vulnerable there is a risk that damage could occur.

Differential movement can also occur between different construction phases, in this case the original building and the later extensions, due to their different foundations. However, no particular signs of such movement were noted. Internally, some signs of movement were noted but not significant.

Mitigation is again possible, and materials used should be compatible to an historic building, or to the later extensions respectively. Normally these will be traditional materials such as lime mortar. Wherever possible air flow should be incorporated or maintained, i.e., in the roof etc. Any works or alterations will require consent from the Local Authority and even repair works should be discussed for guidance to ensure that these are carried out appropriately.

5.7.4 The Manse, The Green, Finchingfield, Essex, CM7 4JS (August, 2021)

The assessment identifies that the proposed works will include dismantling of the boundary wall to the south of the property, relocation of an oil tank, excavation for the new bridge construction, and temporary diversion of the watercourse. The assessment acknowledges that the edge of the excavation is likely to be no nearer than 8.0m from the building.

The assessment assumes that the temporary and permanent works are unlikely to affect ground water or ground moisture contents and thus unlikely to affect the building regarding ground related movement if bearing on shrinkable sub-soils. It adds that, *"the dismantling and re-building of the southern boundary wall appears to be from the new bridge up to the gate and path leading to the front door. This is predominantly of brick but in front of the house there is also metal railings. These will need to be carefully released, are likely to be corroded where built into the masonry. When re-built a substantial number of new handmade clay bricks will be needed, to match existing, and possible copings if these cannot be removed without damage. The new wall should be built in an appropriate lime based mortar which should thus avoid movement joints being required. The building is more likely to suffer from movement due to its inevitable shallow foundations, aggravated by any leaking drains etc."*

Regarding mitigation, the assessment concludes that this is possible, stating that *'wherever*

works are carried out appropriate materials should be used which are compatible to an historic building, or to the later extensions respectively. Normally these will be traditional materials such as lime mortar. Wherever possible air flow should be incorporated or maintained, i.e., in the roof etc. Any works or alterations will require consent from the Local Authority and even repair works should be discussed for guidance to ensure that these are carried out appropriately.'

6. Relevant Planning Policies and Conformity

6.1 National Policy

The National Planning Policy Framework (NPPF) provides guidance for local planning authorities and decision-takers both in drawing up plans and as a material consideration in determining applications.

The NPPF states that planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise. In assessing and determining development proposals, local planning authorities should apply the presumption in favour of sustainable development.

There are no elements of the NPPF that state or allude to the proposal for the replacement of Finchingfield Bridge and the construction of a temporary bridge at Finchingfield being notionally unsustainable. Further discussion of sustainability at the local level can be found against relevant policies in the following sub-sections of this Planning Statement.

6.2 Local / Sub-Regional Policy

6.2.1 Essex County Council – Development Management Policies (2011)

Policy DM1 – General Policy provides the criteria that ensures the safe and efficient movement of people in the County. Criterion vii of the Policy outlines that the Highways Authority will ensure that where existing access is to be used, substandard accesses will be improved and/or upgraded in accordance with the current standards for the category of road. Criteria v and vii ensure that all proposals are assessed and determined against current standards, having regard to safety and capacity, as well as ensuring that proposals will not create a significant potential risk or be detrimental to the safety of the highway network.

The proposal's conformity to Policy DM1

The replacement of Finchingfield Bridge with a marginally wider bridge and associated temporary crossing is strongly in adherence to criterion iv of Policy DM1. Structural assessments as to the safety and loading capacity of the existing bridge structure determine that the bridge does not meet loading requirements and is a width that results in more frequent vehicle impacts to both the adjoining structures and parapets. A replacement bridge with associated highways improvements is further considered the only feasible approach to address the deteriorating condition of the bridge and ensures current standards can be met. The proposed marginal increase in the width of the structure is to the minimum required to improve access and safety. It is strongly considered that evidence exists through this Planning Statement and other submission documents that the proposal is a necessity in order to maintain routes of strategic importance in the area and also to ensure the bridge is policy compliant in regard to modern safety standards.

Policy DM3 – Secondary Distributors, sets out that the Highway Authority will protect the function of secondary distributors within defined settlement areas by; ensuring alternative routes are available, new access points are designed and constructed to current standards and by seeking improvement to existing substandard accesses.

The proposal's conformity to Policy DM3

The existing bridge structure and wider network in and around the proposal area is classified as an 'secondary distributor' in this Plan's Development Management Route Hierarchy, and the Highway Authority identify the road as having a function of 'carrying traffic safely and efficiently between substantial rural populations and on through routes in built up areas.' The proposal directly accords with the policy requirement to improve an existing substandard access in regard to width requirements, notably for emergency service vehicles, and also weight. This is further reinforced by the strategic importance of the B1053 and B1057 roads locally and in the wider area.

4.2.2 Braintree District Council – Local Plan (adopted 2022)

The Local Plan seeks to guide future growth and development within the District up to 2033. Development of any kind that requires planning permission needs to adhere to the varied policies of the Local Plan. The policies identified in this section are those deemed relevant to the proposal and for each a narrative explains how and why the proposal adheres to the policies.

Policy LPP47 – Built and Historic Environment and **Policy LPP57 – Heritage Assets and their Settings** detail the requirements for all development in regard to respecting the existing built and historic environment, in particular the protection and enhancement of existing assets.

The proposal's conformity to Policy LPP50 & Policy LPP57

The proposed structure and associated temporary bridge have been informed by a suite of specialist documentation including an Archaeological desk-based assessment, Heritage Impact Assessments, and Structural Assessment Reports. All of these Reports have been suggested as required at this stage by the pre-application advice received by Essex County Council.

The Archaeological desk-based assessment examined the site itself and surrounding area and subsequently identified a medium to high potential for archaeological evidence for pre-historic to Roman period and medieval – post medieval period deposits respectively. As a result, a number of works have been recommended to ensure that archaeological deposits are monitored and recorded at key stages of the scheme. These can be ensured through condition associated with the planning permission.

The location of the existing bridge results in it being a prominent item in the existing setting of the surrounding listed buildings and contributes to the significance of many. The Heritage Impact Assessment identified that the replacement structure may cause localised

The proposal's conformity to Policy LPP50 & Policy LPP57

harm on the listed and non-designated heritage assets: 'the Manse' and the 'Greedy Duck'. The supporting information identifies that these impacts can be mitigated through a Construction Management Plan.

The temporary crossing elements of the application are identified as having the potential for harm, however, the alternatives to this temporary structure would produce not only widespread impacts to the local transport infrastructure through the need for diversion, but also potential negative impacts on multiple Conservation Areas in surrounding villages or otherwise Protected Lanes. The direct impacts on the Finchingfield Conservation Area will only be temporary and are identified in the Heritage Impact Assessment as less than substantial / significant. The reinstatement works to take place following the completion of the development as identified within the Feasibility Study are able to return the area to its original state, in particular the Village Green. Net gains to Common Land are also proposed in a separate application, which will be gifted to the Parish Council; this should be strongly considered.

Paragraph 202 of the NPPF states that "harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use". The public benefit of the replacement bridge in addition to the temporary structure while the development is constructed would be far greater than the infrastructure impacts arising from the diversionary route alternative. More consideration of this issue is located within this Planning Statement at Section 4.3.

Policy LPP52 – Layout and Design of Development contains the criteria which new proposals must adhere to, of particular note; criteria 2 relating to the architectural quality, criteria 3 relating to unacceptable impact on neighbouring property, criteria 5 relating to the requirement to be sensitive to existing historic assets particularly those within conservation areas, criteria 6 relating to environmental sustainability, criteria 9 relating to the landscaping and criteria 13 relating to highway safety.

The proposal's conformity to Policy LPP52

The evidence and supporting assessments commissioned to accompany this application have guided the proposed development, resulting in a replacement bridge scheme that broadly replicates the existing structure, with improvements to safety in accordance with modern minimum standards and requirements. The replacement structure will span a larger footprint as a result, to increase the loading capacity of the bridge, and allow easier manoeuvring for vehicles to halt occurrences of vehicles striking the adjoining parapets and structures.

The submitted drawings evidence the replacement structures appropriate design and scale to adequately conform to the Criteria of Policy LPP55. Details regarding the mitigation of potential effects on heritage assets are considered above in response to Policy LPP47 and elsewhere in this Planning Statement.

Policy LPP53 – Conservation Areas sets criteria to ensure that development within the District positively contributes to the character and appearance of Conservation Areas and their settings.

The proposal's conformity to Policy LPP53

The location of the existing bridge is within the Finchingfield Conservation Area and its various listed buildings. The Heritage Impact Assessment identifies that the replacement structure may cause localised harm on 'the Manse' and the 'Greedy Duck' without mitigation and sets out that any such impacts can be mitigated through a Construction Management Plan. Further, both the form and south elevation of the proposed replacement bridge structure will match the form of the bridge at present where it is practicable to do so making it appropriate to the existing local context.

Paragraph 202 of the NPPF states that "harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use". The public benefit of the replacement bridge in addition to the temporary structure while the development is constructed would be far greater than the infrastructure impacts arising from any diversionary / alternatively utilised route which in themselves may have various effects on other Conservation Areas and Protected Lanes. Details regarding the mitigation of potential effects on heritage assets in regard to the temporary bridge and road elements of the proposal are considered in response to Policy LPP47 and elsewhere in this Planning Statement.

Policy LPP54 – Demolition in Conservation Areas and **Policy LPP58 – Demolition of Listed Buildings or Structures** outline the District Council's criteria for demolition within a Conservation Area. These seek no negative impacts on street scene; that where existing structures make a negative contribution to character or appearance, that removal can be beneficial.

The proposal's conformity to Policy LPP54 & Policy LPP58

The proposal is a redevelopment scheme for Finchingfield Bridge which includes the demolition of the existing structure and instatement of a replacement bridge that broadly replicates the existing structure that is to be replaced. The replacement structure will span a larger footprint, however, this is to increase the loading capacity of the bridge, to allow easier manoeuvring for vehicles, and to reduce the number of vehicles striking the adjoining parapets and structures. This application concerns both the demolition and replacement structure, which ensures that the bridge to be instated is better fit for purpose and to futureproof a strategic route in the local area.

The demolition of the existing Finchingfield Bridge is being undertaken as a result of the bridge being deemed weak and unable to be strengthened to accommodate the required loading. Additionally, the structure is regularly struck due to its narrow construction. The scheme is supported by a number of specialist documents including a Heritage Impact

The proposal's conformity to Policy LPP54 & Policy LPP58

Assessment which advised that the demolition and replacement of the bridge would cause less than substantial harm. Due to the bridge's rating it is not suitable for all of the traffic that utilises the current road; removal and replacement would improve the infrastructure and still ensure the feature remains as a traffic calming measure due to the retained width of the road.

For the reasons detailed above, elsewhere within this Planning Statement regarding optioneering, and also the various other submission documents, the scheme is considered to be in conformity with the criteria found within Policy LPP54.

Policy LPP59 – Archaeological Evaluation, Excavation and Recording provides the District's requirement for the undertaking of archaeological evaluation prior to development taking place where the development could impact upon archaeological remains, scheduled ancient monuments or historic parks and gardens. An assessment of these potential impacts should be submitted alongside any application in the form of an archaeological evaluation.

The proposal's conformity to Policy LPP59

The proposed structure and associated temporary bridge have been informed by a suite of specialist documentation including an Archaeological desk-based assessment. This assessment has examined the site itself and surrounding area and subsequently identified a medium to high potential for archaeological evidence for pre-historic to Roman period and medieval – post medieval period deposits respectively. As a result, a number of works have been recommended to ensure that archaeological deposits are monitored and recorded at key stages of the scheme. These can be ensured through condition and the completion of this thorough investigation would ensure that the proposed scheme conforms to Policy ADM69.

Policy LPP63 – Natural Environment and Green Infrastructure and **Policy LPP66 – Protected, Enhancement, Management and Monitoring of Biodiversity** state that proposals must protect and where possible enhance the natural environment, including both biodiversity and geodiversity. Developments should also seek to protect from pollution where appropriate.

The proposal's conformity to Policy LPP63 & Policy LPP66

The replacement of Finchingfield Bridge and the proposal for a temporary crossing whilst bridge is constructed is guided by a suite of specialist reports related to assets of environmental value. An Ecological Impact Assessment (EIA) has been prepared for the scheme, which did not identify effects that would either adversely impact any protected species identified within the area or that could not be mitigated. Additionally, the assessment did not identify any legally protected sites within 5km, any locally designated sites within 1km, or any priority habitats within or adjacent to the site. Those effects that were identified are relevant only to the construction practices and are largely related to the

The proposal's conformity to Policy LPP63 & Policy LPP66

lighting scheme of the site. Relevant conditions regarding this can be ensured without affecting the principle of development in the first instance.

In regard to the policy's consideration of 'protection from pollution', the temporary route strongly adheres to this requirement as discussed in 4.3.3 of this Planning Statement. Without the temporary crossing, the diversion routes are likely to see significantly increased distances travelled along what is currently a strategic route and a crucial interchange in the local area for those travelling east-west and north-south (and vice versa) along the B1057 and B1053. This can be expected to have negative implications regarding air quality in many neighbouring villages.

Policy LPP65 – Tree Protection outlines the District Councils commitment to protecting established, healthy trees of significant amenity value. Trees of high quality should be treated as a material consideration as is best practice.

The proposal's conformity to Policy LPP65

The replacement of Finchingfield Bridge and instatement of a temporary crossing is guided by a suite of specialist reports which includes a Preliminary Arboricultural Impact Assessment and Method Statement. The trees found on site do not prove to be of significant constraint: one individual tree, one whole tree group and two partial tree groups will need to be removed to facilitate development, however none of these are identified as Category A trees. Replacement tree planting is confirmed to be carried out post-construction to mitigate the landscape impacts arising as a result of the scheme. Certain trees that require felling do not require mitigation due to their limited value.

Working methods identified within the assessment will ensure that the retained trees are protected, preventing adverse effects.

Policy LPP67 – Landscape Character and Features outlines the District Council's requirements for development with regards to the landscape of the locality. Development should be informed by the information provided within the Landscape Character Assessment (2006). Proposals should protect, conserve and enhance their surrounding landscape.

The proposal's conformity to Policy LPP67

The replacement of Finchingfield Bridge and instatement of a temporary crossing is guided by a suite of specialist reports which includes the documents 'Finchingfield Bridge Landscape Visual Appraisal (LVA)', and 'Landscape – Feasibility Study: Finchingfield Village Green Reinstatement Works.' These documents have shaped both the permanent and temporary works of the proposal, in order to fully adhere to the protection and conservation elements of Policy LPP67.

The LVA determines that the landscape has the capacity to absorb the proposed wider

The proposal's conformity to Policy LPP67

(but still single lane) replacement bridge, so long as the width does not extend beyond the currently proposed 1.5m and it is of the same materiality as the existing bridge i.e. as close to being a direct replica as possible. Given the location within the conservation area careful consideration should be given to any associated road line marking and signage. Doing so will ensure that the development meets the requirements of local planning policy.

Given the sensitivity of the landscape and its designation, it is important that the aesthetic quality and use of materials should be prioritised. This does not affect the principle of development, and the materials used will have a very similar look to the existing bridge with brickwork cladding installed to offer an outward appearance similar to the existing structure.

The Landscape Feasibility Study has been produced to investigate three methods of reinstating the three areas of grass (the Village Green) that will be affected through the demolition and construction of Finchingfield Bridge and the associated temporary crossing / carriageway. The implications to the Village Green will be rectified in a timely manner due to its historic significance and high-profile tourist value. The areas to be reinstated will be returned to their original state, such that the works that had taken place were undetectable. This will be through a replicating the current grass cultivar mix and reinstating the areas with new 'designed' turf. Additionally, net gains in Common Land are proposed in a separate application and indicated within the submission material which should be a strong consideration in determining the application.

Policy LPP69 – Protected Lanes outlines the District Council's approach to conserve the traditional landscape and nature conservation character of roads designated as Protected Lanes, including their verges, banks, ditches and natural features such as hedgerows, hedgerow trees and other structural elements contributing to the historic features of the lanes.

The proposal's conformity to Policy LPP69

The Policy identifies that *'any proposals that would have a materially adverse impact on the physical appearance of these Protected Lanes or generate traffic of a type or amount inappropriate for the traditional landscape and nature conservation character of a protected lane, will not be permitted.'*

As specified in Section 4.3.3 of this Planning Statement (regarding optioneering), the implications of not providing a temporary crossing in its current location is likely to have negative implications on the Protected Lanes that surround Finchingfield through their use as alternative shorter routes than the identified diversionary route. These likely routes are set out in that section of this document, with the stretches of Protected Lanes identified. It is strongly considered that there is real risk to the designation of these roads should they be used as alternative routes in and around Finchingfield, due to them all having an inappropriate width to accommodate modern vehicles and especially larger vehicles such

The proposal's conformity to Policy LPP69

as HGVs. This can cause damage to the features for which they are designated, and further implications regarding adverse impacts can be associated with the increased throughput they are likely to experience.

Policy LPP74 – Flooding Risk and Surface Water Drainage outlines the Council's requirements for development in areas of various degrees of flood risk.

The proposal's conformity to Policy LPP74

In the absence of requested modelling from the Environment Agency, this planning application has been submitted without a Flood Risk Assessment (FRA), however email documentation between ECC and the EA has been submitted accompanying this application. This documentation has influenced / ensured that a cautious approach has been proposed in regard to managing water flow, with the installation of temporary damming upstream and downstream of the existing / replacement bridge area together with linked flow pipes on the cross sectional area within the bridge opening. Additionally, regarding the temporary crossing, the carriageway is to be sufficiently low to allow overtopping and ensuring that the majority of flows will pass beneath. This approach maintains the existing cross sectional area and minimises the increase in flood risk to nearby properties.

As the submitted email documentation indicates, the proposal has been approved in principle with the Environment Agency, and as such is considered in accordance with Policy LPP74 of the Braintree Local Plan.

7. Conclusion

The need for the reconstruction of Finchingfield Bridge is established through assessment reports of its condition, its unsuitable width which has led to vehicle strikes, and its weight bearing capacity. The proposed replacement of the bridge and associated highway improvements is a necessary development for the purposes of safety, and it is demonstrated that the proposed scheme is in adherence to policy requirements at the national and local levels. Justification for the reconstruction of Finchingfield Bridge can be summarised as:

- Elements of the bridge being of poor condition;
- Its weight bearing capacity being unsuitable and deteriorating;
- The width of the bridge leading to numerous vehicle strikes over the years; and
- The strategic importance of the bridge in regard to the local transport network.

The works proposed to the bridge replacement element of the scheme will improve conditions moving forward and more widely the proposal will allow the continued use of what is a strategically important transport route.

All elements of the proposal have been influenced by the findings of various assessments that were highlighted as required by pre-application advice. That advice notably focused on the temporary elements of the proposal, the effects on heritage assets, and justification in light of possible diversion.

In all instances, the assessments identify that any possible identification of harm to local characteristics can be mitigated. These considerations are factored into the proposal as submitted at this stage. It should be reiterated however that none of the suggested mitigation measures or solutions to minimising harm are associated with the proposal 'in principle.'

Regarding the temporary crossing and its location, harm can be mitigated through imposing certain conditions and restrictions associated with the use of the temporary carriageway. In short, these amount to the installation of traffic lights to manage flow and associated vibration away from Brick House, and also ensuring fewer 'stopping / starting' near to the buildings themselves.

Notwithstanding this, this Planning Statement provides justification for the temporary crossing from social, economic and environmental standpoints. In justification of the temporary crossing elements of the proposal, in light of realistic alternatives, this can be summarised as:

- Ensuring that a strategic transport route is maintained;
- That access through and between Finchingfield (either side of the Brook) is retained for the benefits of local businesses, including those that rely on tourism;
- That regardless of a diversionary route, its length would likely lead to the use of shorter inappropriate routes, notably along Protected Lanes; and
- That the diversionary route itself may lead to effects on numerous villages associated with increased traffic and Conservation Areas.



With the above in mind, supported in more detail through all elements of this Planning Statement and the submitted material, it is considered that the proposals of this planning application should be granted permission on the balance of ensuring sustainable development in accordance with national and local planning policy.



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