



West Sussex County Council

THE STREET - AMBERLEY

Feasibility Report





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FEASIBILITY REPORT INTERNAL

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1 INTRODUCTION

1.1 BACKGROUND

West Sussex County Council (WSSCC) are undertaking feasibility options to improve the connectivity between two villages Houghton to Amberley by creating a direct link along the B2139 which is a 30mph single carriageway road. The distance between to the key points of interest to facilitate the footway is approximately 1km.

The objective of WSSCC and the wider community are that these proposals are to be delivered in a staged approach, with an interim stage solution to improve a footway access within Houghton (Initiative A) and a more ambitious stage to provide a direct access to and from Houghton to Amberley (Initiative C), as identified by the Amberley & Houghton CHS document. Initiative B of the Amberley and Houghton CHS refers to proposals to upgrade and provide better signage along the South Downs Way, Amberley Station and other surround areas using existing facilities.

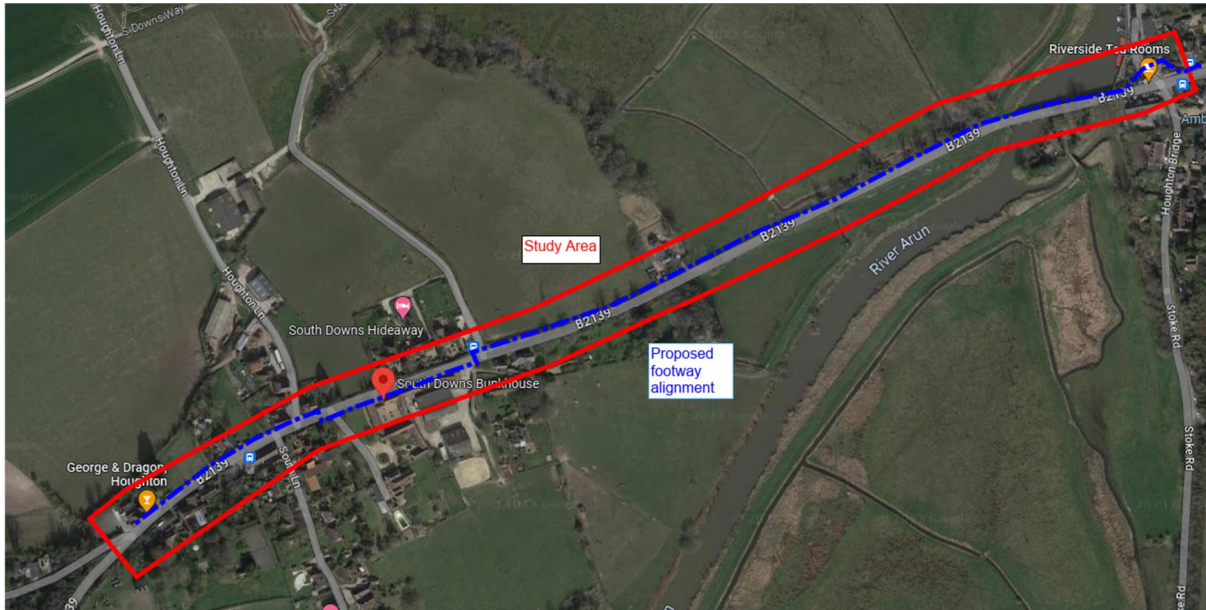
1.2 SCOPE

The scope of this scheme is to initially undertake the option assessment and potential of the preferred route from Houghton to Amberley (this document) in West Sussex. It does not provide any preliminary design options. The WSP design team have been provided with an indicative location of the preferred routes and a site visit was conducted to understand the nature and feasibility of the proposed undertakings.

The purpose of this feasibility study is to explore options for introducing a footpath along the B2139. This includes consideration of any factors which should must be, its impact and processes and ensuring that the proposals are compliant with the following:

- Impact on the existing biodiversity of the area
- Impact to the environment and compliance with the Environmental Agency, Rivers Trust, Historic England and the South Downs National Park
- Road safety
- Departures from Standard
- Any statutory undertaker's equipment
- Impact to private landowners
- Finished levels.
- Drainage impact
- Cost
- Buildability
- Maintenance

Figure 1 - Site Location



1.3 DOCUMENT PURPOSE

The purpose of this feasibility report is to identify potential solutions, using high level design criteria for footways and carriageways, other services which should be considered to design and implement any of the potential solutions, for the design and installation of civil engineering infrastructure to provide a safe, improved footway.

This feasibility report shall summarise the findings of the Amberley CHS document and Initiatives A B and C proposals and where interventions are required provides recommendations to be taken through to the next stage, following client approval.

Initiative A of the Amberley CHS proposes to implement a useable pedestrian footway between Monarch's Way (near the George and Dragon pub) and Houghton Lane

Initiative B of the Amberley CHS proposed to provide improved waypoint signing using existing facilities between Monarch's Way and Amberley railway station.

Initiative C of the Amberley CHS proposes a more ambitious proposal of providing pedestrian footway adjacent to the B2139 which requires land take/land dedication, environmental impacts, disruptions etc.

2 THE SITE VISIT

2.1 OBSERVATIONS AND ASSUMPTIONS:

A site visit was conducted by WSP engineers on Tuesday 16th May. The weather was sunny and clear. The traffic flow was heavy throughout the duration of the site visit. There were a mixture of different vehicle types including HGV's and on occasion larger types of vehicles which straddled the on-coming lane of the B2139.

WSP engineers observed on the approach to Houghton from the west that vehicle speeds increase which is also aided by the downhill slope towards Houghton. This increase in speed was also noticed on Smith's Hill towards the Causeway also travelling from the west and downhill.

3 FEASIBILITY STUDY OPTIONS

3.1 TRAFFIC CALMING

- 3.1.1 To increase conspicuousness WSP suggest introducing improved gateway features in the form of a prominent gateway features on both approaches utilising measures such as removing road markings in the 30mph zone and implementing traffic calming measures through the use of road signing and lining.
- 3.1.2 During the site visit it was observed that there is inconsistent repeater signage to highlight to motorists the required speed limit. There are roundels in place but according to the guidance in LTN1/07 reductions in traffic speeds are more effective when repeater signs are used.
- 3.1.3 To further reduce speeds, the removal of centre lines can be an option as it tends to bring more awareness to motorists to slow down. This intervention could be introduced at certain locations along the B2139.

3.2 FOOTWAY PROPOSALS – INITIATIVE “A”

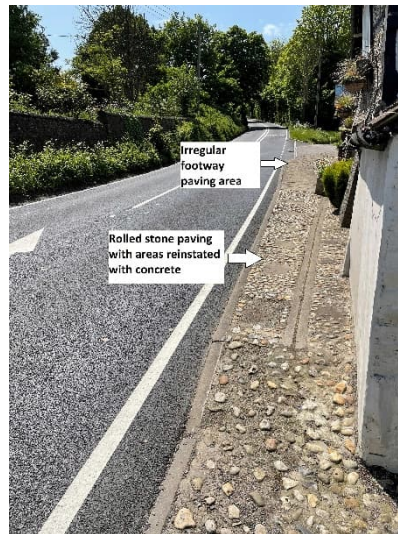
Initiative A is to consider the provision of a pedestrian footway from the B2139/Monarchs Way to the junction of the B2139/Houghton Lane



Location Plan for Initiative A

- 3.2.1 The footway widths outside the George and Dragon public house, in Houghton, are sufficient. The footway could be constructed within the highway red line boundary as supplied by WSCC. The current surface material is a mixture of rolled stones inset in concrete and part irregular concrete slabs with a concrete kerb upstand. This area of the footway with rolled stones inset may not provide adequate anti slip properties when wet. Further investigation is required to ensure that this surface is not a “slip or trip” hazard.

Figure 2 – The current footway adjacent to the George and Dragon public house with rolled stone insets.



3.2.2 The entire section of the footway between Monarch’s Way and end of the George and Dragon public house appears to be part of an English Heritage site and could be grade listed. An alteration to this section of footway maybe limited. Further investigation will be required to ensure modifications can be implemented in this section of footway.

Figure 3 – Section of footway outside the George and Dragon Public House



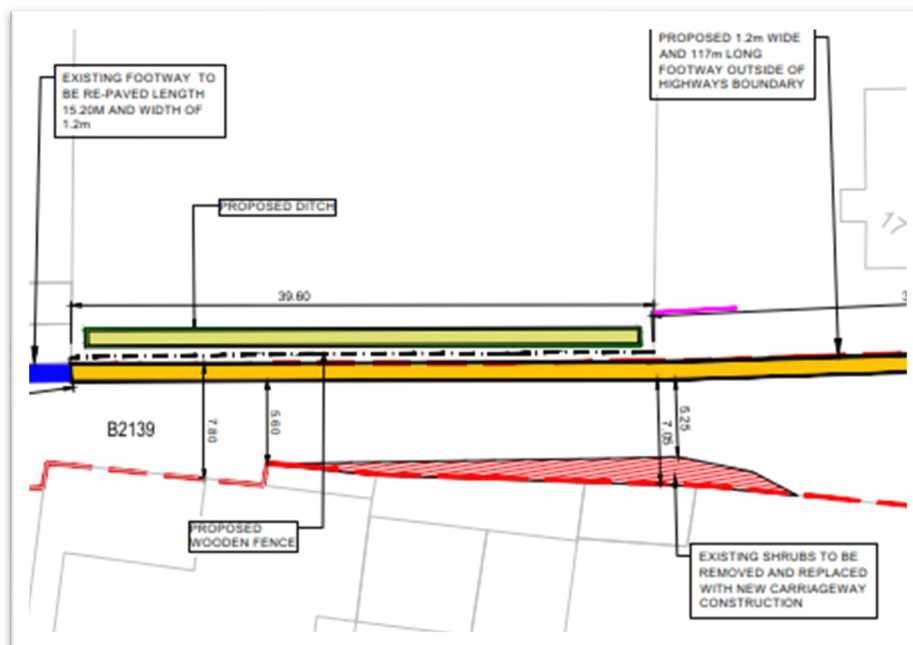
3.2.3 A dropped kerb should be installed at the start of the footway which leads from Monarch’s Way and the George and Dragon public house for better accessibility to persons with mobility issues.

Figure 4 – Location of proposed dropped kerb adjacent to the George and Dragon Public House



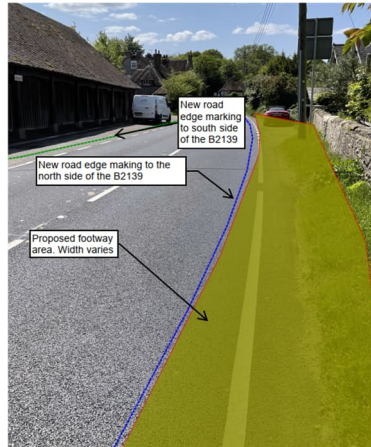
- 3.2.4 It is proposed to construct 40m of new footway using the same rolled stone specification surface and associated drainage. This section of footway additional land will be required to be purchased to implement this footway option.
- 3.2.5 The use of the rolled stones will need further investigation regarding its suitability for public use. The carriageway widths in this section varies from 4.5m to 5.0m and should not be affected adjacent to the proposed footway.

Figure 5 – Footway widening adjacent to the Norfolk Estate



3.2.6 Outside property no 17 Houghton Lane, the carriageway alignment could be adjusted to achieve more footway width to the north. To do this the road markings between this section could be changed however it is recommended that visibility in and out of South Lane is not compromised. The benefit of doing this will result in a reduced cost to relocate the telegraph/electrical pole but the unrestricted parking outside properties no's 17 and 18 will be lost.

Figure 6 – Proposed footway widening adjacent to No. 17 Houghton Lane



3.2.7 Outside property named Little Wyndham, the proposed footway will be at a higher level than the property threshold level, resulting in surface water falling back towards the property. Although it seems that existing doorways into the property from the B2139 have been relocated to the north side of the property. Drainage options will be required for this proposed section and the careful consideration between the interface with a proposed footway and the property wall should be considered to ensure there is no transfer of vibration from passing vehicles, especially HGV's.

Figure 7 – Photomontage showing the proposed footway at the junction with Houghton Lane and the B2139



- 3.2.8 The footway should return into Houghton Lane for at least 3.5m to incorporate a dropped kerb at the Houghton Land junction. The footway will continue along Houghton Lane to the South Downs Way to facilitate any likely future works to provide a footway/footpath towards Amberley Station.
- 3.2.9 Care should be taken to ensure that farmers vehicles can manoeuvre into Houghton Lane from the B2139 without over-running the proposed footway.
- 3.2.10 There is a triple service cover at this corner which would need to be adjusted.

Figure 8 – Photomontage showing the proposed footway in Houghton Lane looking south

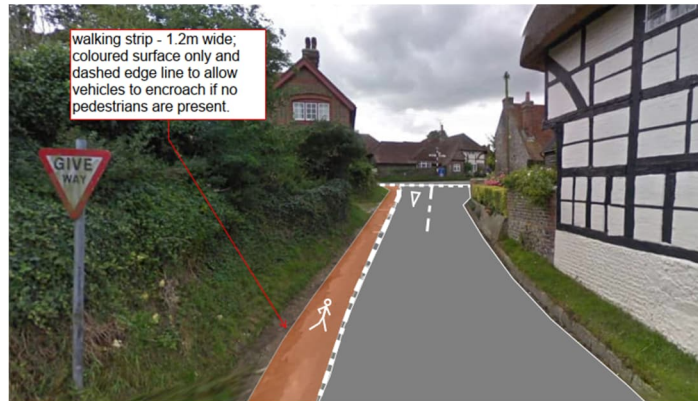


Figure 9 – Photomontage showing the proposed footway in Houghton Lane looking north



SITE ASSESSMENT SUMMARY FOR INITIATIVE A

Advantages	Disadvantages
At least 20-25% of the proposed footway between Monarch's Way and Houghton Lane can achieve the recommended footway width of 2.0m to 2.5m	Loss of some green spaces
Because of the agreement in principle by Norfolk Estates to dedicate land. Some additional benefits to traffic calming within these extents can be explored by installing extra traffic signing. This would be complementing any gateway feature implemented to further reduce speeds.	Environmental impact assessments required and other investigations for the 40m of land to be dedicated from Norfolk Estates
Reduced cost for not relocating 1 No. telegraph/electrical pole	Full depth reconstruction cost required for at least 25% for the length of footway in this section
Connectivity to Amberley Station (Initiative C) and South Downs Way)	The cost for 1No. telegraph/electrical pole and utility triple cover to be relocated/adjusted
	Recently resurfaced carriageway could be damaged by adjusting road marking to facilitate footway construction
	75-80% of the proposed footway will vary in width between 1.0m and 2.0m.
	Drainage design and suitable outfall to be determined.
	Carriageway horizontal alignment changes and carriageway build cost will be required.
	Traffic disruption during construction duration

SCHEME SUMMARY FOR INITIATIVE A

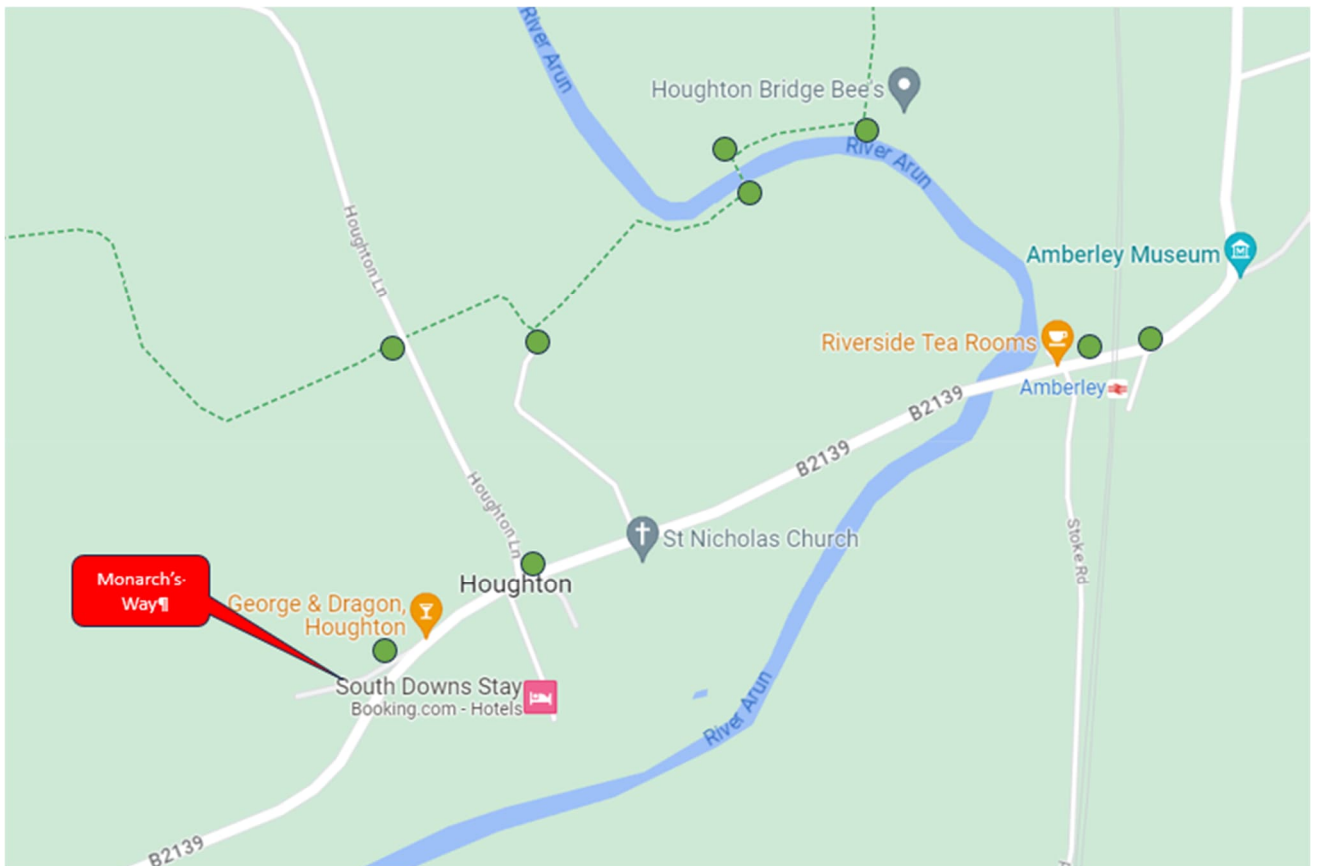
3.2.11 The proposed Initiative A has some positive attributes for the provision of a footway, albeit there will be instances where a preferred footway width cannot be achieved for most of this section. The cost for constructing the footway and the impact of changing the horizontal carriageway alignment should be considered, notwithstanding the statutory diversion cost and environmental impact.

3.3 WAYPOINT SIGNING – INITIATIVE “B”

3.3.1 DESIGN CRITERIA

The proposed Initiative B involves the installation of waypoint signing from Monarch’s Way to Amberley Station utilising the existing footways and footpaths. It may be possible to improve the existing footpaths to improve drainage. The improvements would utilise unbound material to match the existing footpaths. The installation of the waypoint signing is considered achievable and relatively in expensive. It assumed that at least 9 finger post signs will need installing as shown below:

Figure 10 – Location of likely finger post installations



It is assumed that the additional wayfinding signing would be wooden material, in keeping with current surrounding aesthetics as well as being located with the South Downs National Park. Waypoint finding is indicated by the green dots shown above. An example of waypoint signing is shown below.

Figure 11 – Current waypoint signing

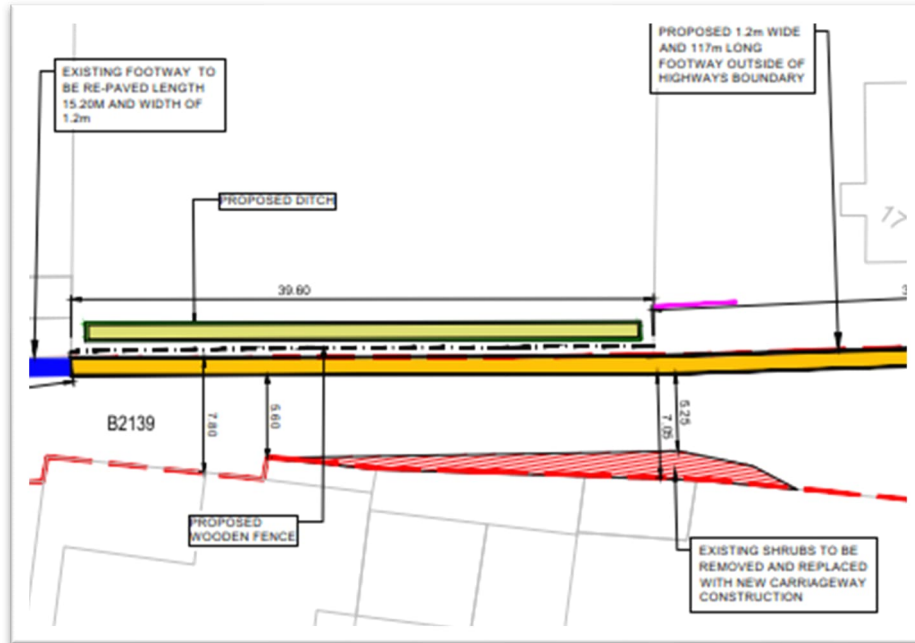


3.4 FOOTWAY PROPOSALS – INITIATIVE “C”

3.4.1 DESIGN CRITERIA

- 3.4.1.1 The carriageway alignment at Houghton Lane and the B2139 could be changed to improve the footway width but also taking into consideration any farm vehicles leaving Houghton Lane turning left into the B2139.
- 3.4.1.2 The threshold or entrance to the property no. 14 will be affected by the proposed footway. The achievable width of footway outside property No. 14 would vary between 0.9m – 1.2m for at least 12m.
- 3.4.1.3 EEA, biodiversity and arboriculture surveys will be required to construct a 1.5 to 2.0m wide footway in the Norfolk Estates section approximately 40m in length. Consultation and surveys cost should be considered. Great crested newts and other reptile species may be present.

Figure 12 – Footway provision adjacent to Norfolk Estate Land



- 3.4.1.4 An uncontrolled crossing will be required for pedestrians to cross from the northern side of the B2139 to the southern side. The location of this crossing could be located within the Norfolk Estate area.
- 3.4.1.5 The installation of a proposed footway along the southern side of the B2139 adjacent to the South Downs Bunkhouse will be difficult. There are existing drainage pipes which are connected to the South Downs Bunkhouse which require further investigation. The impact of a footway at this location is required to avoid the private land outside the “Sustins” property.

Figure 13 – Current verge adjacent to the South Downs Bunkhouse



3.4.1.6 There is a pinch point outside the Houghton Farm. Care is to be taken to ensure manoeuvres from the Houghton Farm and Holly House could be achieved. To increase the conspicuousness of the road narrow at this point the existing road centre lines could be removed.

Figure 14 – Proposed footway adjacent to Houghton Farm



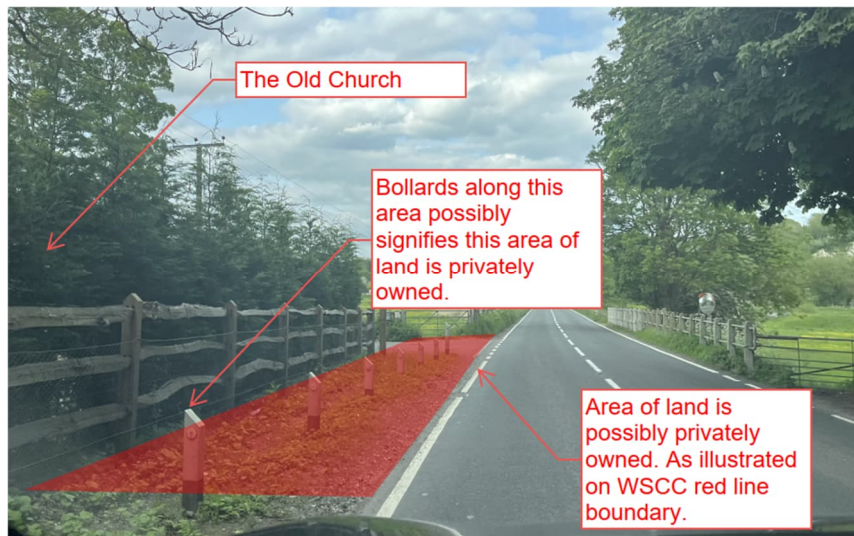
3.4.1.7 After crossing the access at the Houghton Farm, another uncontrolled crossing will be required to allow pedestrians to cross over to the northern side of the B2139 and into the Norfolk Estate section of the proposed route. This is the only location available which has safety and constraint challenges. These are the location proposed to cross the B2139 is at the crest of the incline travelling west along the B2139 and there is a private wall which reduces the possibility to install a footway to cross from the southern footway to the northern footway.

Figure 15 – Proposed footway across Houghton Farm Access



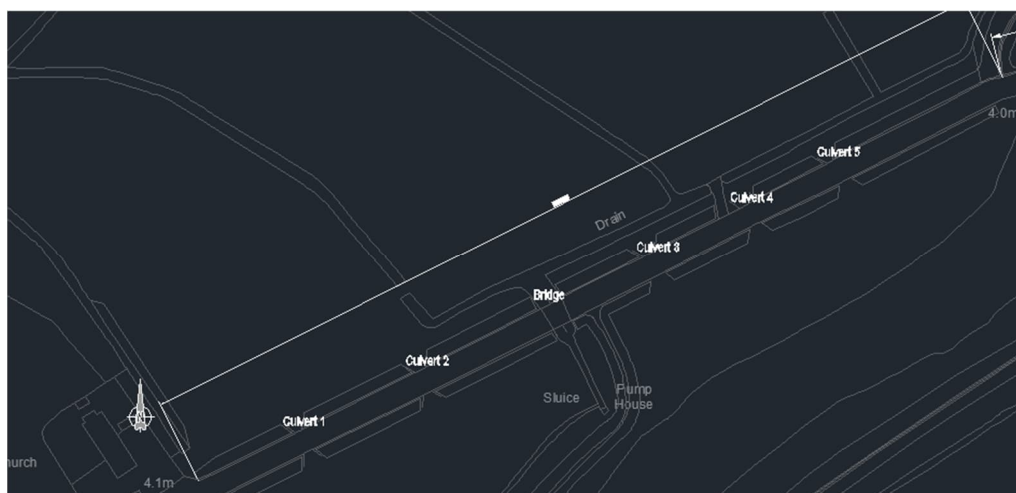
- 3.4.1.8 A new bullnose access should be constructed at the Holly House entrance which will link into the Norfolk Estate section all the way to The Old Church where a bullnose access would be installed.
- 3.4.1.9 A new footway should be constructed within the Norfolk Estate. An ecological and arboriculture survey should be conducted for approximately 150m of proposed footway.
- 3.4.1.10 Outside The Old Church bollards are currently installed to prevent parking and claim ownership. This area would need further investigating and consultation with the owners of The Old Church property.

Figure 16 – Proposed footway adjacent to the Old Church



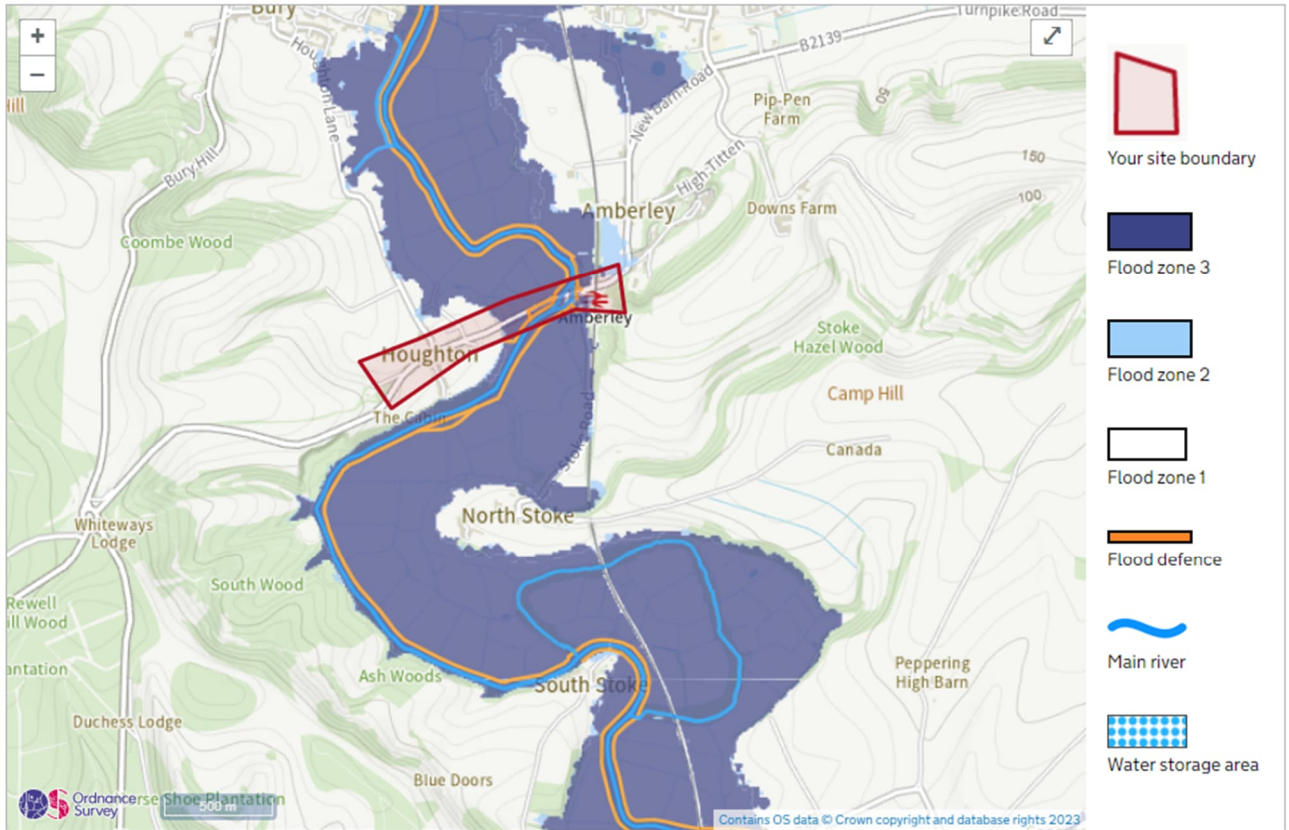
- 3.4.1.11 From the OS Map information (Figure 18 below) there are several culverts along the causeway section of the B2139. These would need to be reconstructed and the footway installed at an appropriate height to avoid any flooding.

Figure 17 – Location of existing flood relief culverts



3.4.1.12 A preliminary search of flood risk data for the extents of flooding indicates that part of the scheme falls within Flood zone 3. The area has a high probability of flooding and is classified as “main river due tidal effects in the River Arun”.

Figure 18 – Extents of river flooding at Amberley



3.4.1.13 A new pedestrian bridge could be constructed alongside the Houghton Bridge similar to the current pedestrian bridge on the South Downs Way, which would be conforming with the area aesthetics. The provision of a give way system on the existing River Arun bridge was investigated but due to the length between the section of the bridge it was deemed untenable and would also result in a convoluted route for pedestrians to walk over this section. It is assumed that the current bridge is grade listed which will mean any alterations to the structure will not be possible.

Figure 19 – Existing pedestrian footbridge



3.4.2 SITE ASSESSMENT SUMMARY FOR INITIATIVE C

Advantages	Disadvantages
At least 70% of the proposed footway between Houghton Lane and The Turnpike can achieve the recommended footway width of 2.0m to 2.5m	Loss of green spaces and change to the aesthetic of the area.
Because of the agreement in principle by Norfolk Estates to dedicate land as required.	Environmental impact assessments, biodiversity impact required and other investigations for the 90% of land to be dedicated from Norfolk Estates along Blacksmiths Hill
Informal crossings between the south and north of the B2139 can be implemented	Cost and consultation required to carry out any flood risk assessments for the area of proposed footway adjacent to The Causeway.
Connectivity to Amberley Station	Full depth reconstruction cost required for at least 25% for the length of footway section
	Construction of at least 6No culverts to be incorporated into a new footway to the north of The Causeway.
	There seems to be a large level difference on the Norfolk Land along Blacksmith’s Hill which would result in extensive excavation, drainage design and infrastructure in this area.
	Outside The Old Church seems to be private land and is confirmed by privately installed bollards
	The route from Houghton Lane to the Holly House is convoluted. Not the desired line of path for pedestrians

	Cost for constructing on the flood plain with associated drainage
	Cost to construct a new bridge adjacent to the listed Houghton Bridge
	Negative visual impact of a pedestrian bridge adjacent to the Houghton Bridge looking south
	Convolutd route from Houghton bridge to The Turnpike
	Traffic disruption during construction involving either road closures or night working

3.4.3 SCHEME SUMMARY FOR INITIATIVE C

This proposed Initiative C has major challenges namely cost benefit, impact to the biodiversity of the area and end user benefit. Sections of the scheme where land is dedicated from Norfolk Estates ensures comfortable footway widths but to the detriment of negative impact on green spaces and to the flood plain at The Causeway, alongside a change in the rural aesthetics of the area.

4 COST ESTIMATE

The likely high level cost estimate for Initiatives A B and C are shown below:

Scheme	Cost
Initiative A	£588,000
Initiative B	£7,000
Initiative C	£3,220,000

A breakdown of the cost estimates can be provided on request.

5 SUMMARY

Initiatives A and B would be the preferred options to investigate further. Reasons being the cost, viability and construction duration that would be more tenable than Initiative C.

Initiative A does have challenges regarding the biodiversity impact at the location between the George and Dragon pub and property number 17.

Initiative B is also a viable option; by upgrading of the existing signage and footpaths between Amberley Station and Houghton Lane via the South Downs Way. In addition to this; adequate signage for vulnerable pedestrian (signs to diagram 544.1 and supplementary plate) can be implemented. It should be also noted that the maximum distance for the supplementary plate from Houghton Lane to The Turnpike is at least 875 yards travelling east if Initiative A is implemented.

Initiative C has been discounted on grounds of cost and safety to pedestrians. Due to the restricted existing available highway width, large areas of land will need to be purchased to accommodate a new footway. It is likely that this scheme would receive objections from the South Downs National Park and the Environment Agency as a new section of footway would have to be constructed on the existing flood plain. Currently the existing bridge that crosses the River Arun is Grade II listed which prohibits any modifications that would be necessary to incorporate a pedestrian footway. Therefore, a new pedestrian footbridge would be required and installed next to the existing footbridge which would be subject to additional land purchase agreements including construction compound site location and access and overall extensive costs.



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