



FAO. Vale of White Horse Planning Committee  
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05<sup>th</sup> June 2018

Dear Charlotte,

**Listed Building Consent ref: P17/V1154/LB - Demolition of listed railway bridge, and provision of replacement bridge.**

We are writing in response to the request for further information in support of Planning Application P17/V1154/LB - Steventon overbridge. This follows the consideration, and subsequent deferral of the application, at the Vale of White Horse Planning Committee meeting on Wednesday 9<sup>th</sup> May.

In what follows we provide, as requested, information pertaining to:

- Flood risk;
- Track lowering;
- Train capacity - the impact of the 25 second delay; and
- The temporary parapet amendments, and why this can't be a permanent measure.

In preparing this letter, we have drawn from the various documents as submitted with the original application, and also from the independent report (prepared by Peter Brett Associates) commissioned by the Council to provide external professional analysis of the application.

In response also to the report prepared by Solka on behalf of Steventon Parish Council, we have enclosed a copy of our email sent to the Council and Historic England in response to the report, and the queries raised. In the Planning Committee meeting, the query of track lowering was raised in reference to the Solka report, and further comment is provided in this letter.

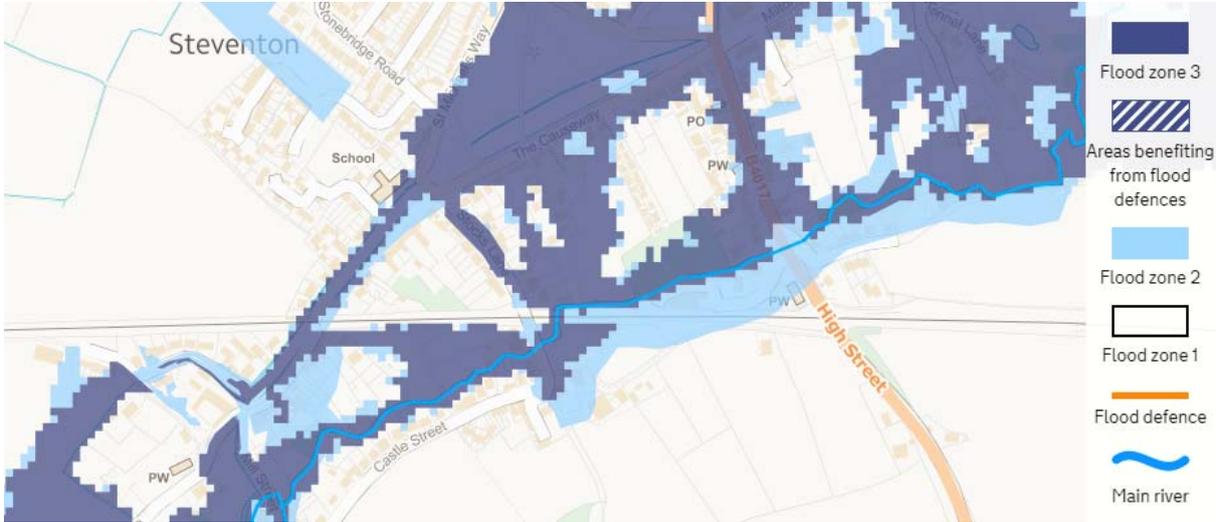
**Flood Risk**

The flood risk in the area is one of the key constraints that affects the viability of all options at this location.

As stated in the Vale of White Horse District Council Committee Report for this application, the Environment Agency has recently changed their view that the "land surrounding the railway has been upgraded from a Flood Zone 1 location, the lowest zone likely to flood, to a

Flood Zone 3 location, this being a functional floodplain". Flood Zone 1 is an area least likely to flood (either fluvial (rivers) or sea), whereas land that sits within a Flood Zone 3 is most likely to flood.

In terms of flood risk assessments, the railway line, Steventon Road Bridge, and the level crossings are within the area denoted as extreme flooding risk from rivers and seas. This is illustrated in the Environment Agency flood map below.



Network Rail is aware of two important flood events in the last 10 years. The first was following significant storms in Steventon village in July 2007. The second, more recently, was in the winter of 2013/14. A number of roads and properties were affected including the area around The Causeway, Stocks lane, Mill Street and a section of the High Street. The photograph below gives an indication of the extent of the impact on the village.



The following extract from the independent PBA report, commissioned by VoWH Council highlights the problem with Ginge Brook, which runs through Steventon Village and crosses underneath the railway.

Mill Stream Culvert carrying the Ginge Brook (a main river) beneath the railway. The VOWH Strategic Flood Risk Assessment states "The Ginge Brook and associated drains flow through the centre of Steventon, and the existing village is at high risk of

fluvial flooding. Flood grants were claimed by 62 properties in 2007 and there are 13 incidents in VOWH Flood Database, mainly associated with Ginge Brook”.

(<http://www.southoxon.gov.uk/sites/default/files/VOWH&SODC%20SFRA%20Final%20Report%20AppendicesReducedPart2.pdf>)

It is understood that the culvert has limited fill over the top of it and minimal freeboard between the soffit and the water level. Therefore, options to lower the track over this culvert are unlikely to be viable as a reconstructed culvert is highly unlikely to obtain a Flood Risk Activity Permit from the Environment Agency.

Site investigations have been conducted by Network Rail that further proves the case that the risk of flood is real. These are not ‘desk top’ exercises and Network Rail rebukes the claim that it has not carried out sufficient work on site to substantiate the claim that there is an unacceptable risk of flooding posed by track lowering.

Track Bed Investigation Reports conducted in both June 2016 and September 2017 substantiate the claim that a track lower is not possible through Steventon. It should be noted that Peter Brett Associates – at the request of Vale of White Horse – independently reviewed these reports.

Local ground investigation conducted at Steventon High Street Bridge June 2016 includes:

- Trial holes undertaken to determine the localised geology below the track bed.
- Ground penetrating radar also utilised to determine depth of each sub layer.

Track-bed drainage was found to be poor throughout the site with wet material encountered at a minimum depth of 550mm below rail on the Down Main and 380mm below rail on the Down Steventon Goods Loop. Standing water was encountered on the Down Main at a minimum depth of 900mm below rail and on the Down Steventon Goods Loop, at a minimum depth of 380mm below rail. Investigations were undertaken on a dry day.

Whilst there is without a doubt a high risk of flooding in the area, we cannot consider the potential for flooding in isolation; given the inextricable link with two of the discounted options considered and rejected by Network Rail; namely a full or partial lowering of the railway track. There is inevitably a link between lowering the track and managing water flow and drainage. Track lowering would give rise to significant and unacceptable problems with drainage. This is covered further below.

## Track Lowering

It is important to be clear about the requirements of a track lower and what this would mean for the village of Steventon. The sketch below provides an overview of the requirements in this regard.

**Section through bridge:**



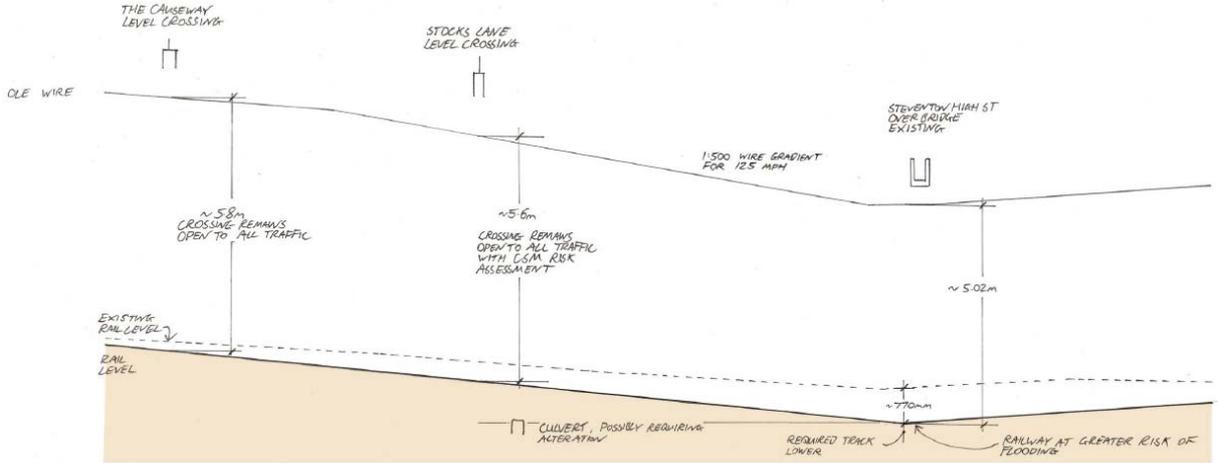
← Length of track lowered depends on how far the track is dropped; the slope either side needs to have a length of 100m for every 100mm of the lowering at the bridge →

In order to create an acceptable gradient for trains, 100 metres of track either side of the bridge has to be re-laid for every 100mm of lowering (which would necessitate works to and past Stocks Lane to the west).

Among other discounted options, both a full track lower, and a partial track lower were discussed further within Network Rail submission documents. These two options took into account other factors such as the level crossings in the area, the necessary OLE wire gradient, and of course the flood risk.

### Full Track Lower

In order to achieve sufficient clearance at both crossings (for OLE wires), the track lower at the bridge would need to be about 770mm – as indicated in the sketch below. This would require approximately 800 metres of track and ballast to be renewed both sides of the bridge along with the lowering of The Causeway (listed Grade II\*) and would include lowering a four track section to the east of the bridge.



This would also require an excavation of approximately 1500 mm depth at the bridge to form the new track bed. A dig of this depth would likely destabilise the toe of the cutting and so require significant earth retaining structures to be installed around the bridge. This would probably be a reinforced concrete wall with ground anchors tying back into the cutting. The structural strengthening of the bridge to allow for the excavation works would be significant and require a long closure of the railway to achieve.

The technical reports written by CH2M Hill concluded that a significant lower of the track level would introduce a very high risk to the railway of flood events. Considering the risk of flooding to the rail network, and to the local community, Network Rail could not consider this option as a viable solution.

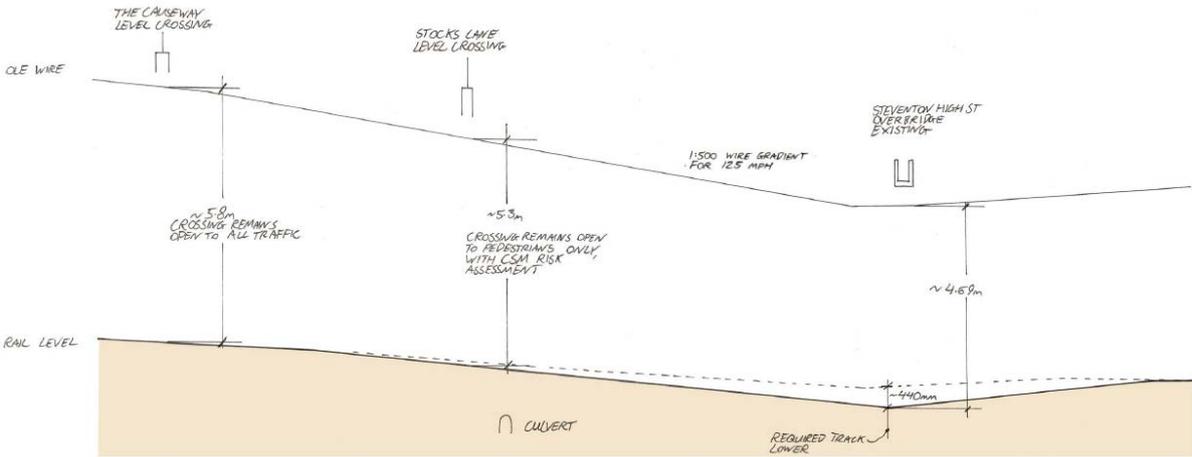
Furthermore, and as noted previously, the PBA report also concluded that the reconstruction of the culvert is very likely to have adverse flood risk consequences for Steventon village. PBA did not consider this to be a viable solution either.

### Partial Track Lower

Based on site survey information, Network Rail has assessed the minimum depth required in order to provide both the minimum overhead line clearances and pantograph to bridge clearances to be 444mm.

If a track lower of 444mm was undertaken, the Causeway level crossing could remain open, but this would require the closure of Stocks Lane level crossing to traffic. The Stocks Lane closure to vehicles would be required because of the reduced OLE wire height of 5.3m through the crossing (due to the change in track gradient associated with the track lower).

A track lower of 444mm would still incur many of the issues associated with a full track lower as well as other matters. The extent of track requiring to be rebuilt would be a minimum of 444 metres either side of the bridge, and require a total depth of excavation of around 1,100mm to form the track bed.



The closure of Stocks Lane level crossing to vehicular traffic would also require modification to the Byway Open to All Traffic (BOAT) along with Mill Street and Castle Street as there is no alternative route suitable for large vehicles other than the Causeway level crossing. This change to the access route into the southern half of Steventon would affect how vehicles and pedestrians move around the village. The highway improvements would also impact on the appearance of the southern part of the village.

As part of Network Rails consideration of the options, as the partial track lower resulted in many of the same issues as a full track lower, and introduced further permanent impacts on the local community through highway restrictions and local highway amendments, this option was discounted as unviable.

As part of PBA’s assessment of our application it was queried whether a reduced wire gradient of 1:400, or indeed 1:300 could be implemented reducing the engineering challenges and making this a viable option. This is considered below.

**Wire Gradient**

Whilst Network Rail acknowledges that the gradient could be slightly improved by lowering the wire and restricting vehicles through the crossing; a significant speed restriction will still be required as indicated within the report by Peter Brett Associates. To retain Stocks Lane and to be open to traffic, Network Rail has raised the wire height and increased the gradient to 1:295 resulting in a speed restriction of 60mph - the temporary solution. The secondary option is to close Stocks Lane level crossing which has to date been opposed.

At the existing bridge there are two separate issues associated with the low height of the bridge which limit the speed at this location. The first being the sub-standard gradient between the level crossing and the bridge, the second being the limited clearance between the train pantograph and the bridge.

When considering the gradient, Network Rail has raised the height of the wire to the maximum permissible. Any further height increase will result in the train pantograph detaching from the wire due to insufficient uplift force. Network Rail's current engineering solution will facilitate all existing road traffic through the level crossing. Whilst Network Rail acknowledges the gradient could be slightly improved by lowering the wire and restricting vehicle height through the crossing; a significant speed restriction will still be required as indicated within the report by Peter Brett and Associates. To retain Stocks Lane open to traffic, Network Rail has raised the wire height and increased the gradient to 1:295 resulting in a speed restriction of 60mph – the temporary solution. The secondary option is to close Stocks Lane level crossing which has to date been opposed.

The challenge by Historic England noted in the Peter Brett Associate report to the Vale of White Horse, appended in Vale of White Horse District Council – Committee Report – 9th May 2018 was as follows:

The presented track lower of 444mm is based on a contact wire gradient of 1:500. Historic England have challenged this gradient within their pre-application advice, stating "we also need clarity as to whether the problem could be solved by adopting a steeper wire gradient". Subsequently referring to a steeper gradient of 1:400 and possibly even 1:300 in the context of 125mph running. This does not appear to have addressed within NR's reports.

PBA would observe that a steeper wire gradient would reduce the required track lower in this option, with a 1:300 gradient eliminating the need for a track lower. A steeper wire gradient would therefore reduce the engineering challenges and make this a viable option.

Network Rail has responded to this in previous correspondence with Historic England and Vale of White Horse District Council in relation to the OLE wire gradient. We would like to highlight the following points or key factors when considering any option in relation to the reconstruction of Steventon High Street Bridge.

Where there are variations in contact wire height, the gradient shall not be steeper than 1:5 x line speed, measured in mile/h (i.e. 125 mph line-speed would give a grading of 1:625).

In the context of 125mph running:

- 1:500 = 100mph
- 1:400 = 80mph
- 1:300 = 60mph

If a variation in contact wire height is required, this should be achieved with as small a gradient as possible. For speeds, up to and including 125mph (200km/h) the design values for gradient shall not exceed 1:5 times the line speed in miles per hour. The design values for changes in gradient shall not exceed 1:10 times the line speed in miles per hour.

In direct response to the Solka report – see the excerpt below, Network Rail believes that the statement made below is in direct contradiction to current Network Rail and RSSB standards. Maximum change in gradient is actually 1:10. A maximum gradient of 1:300 would therefore equate to a speed of 60mph and not 100mph as quoted. Also note that the standards referenced below are GE/RT8025 issued 2001.

Based on a speed of 100mph (160kph), a maximum change of gradient of 1.7 ‰ (1/600) is allowed. The maximum gradient would be 3.3 ‰ (1/300). The height curve between Steventon Road bridge and Stock Lane Crossing calculated with these data is shown in Table 2 (pole positions assumed).

The Council must note that significant elements of this document have since been superseded.

- The following parts are to be superseded by GLRT1210 Iss 1 as of 07/03/2015: B4.1, and parts of B4.2, B4.3, B4.5.1, B4.5.2, B4.5.3 and B4.6.
- The following parts are superseded by GLRT1212 Iss 1 (part of B5.5) and GMRT2113 Iss 1 (parts of B5.5 and B5.6) on 05/12/2015.
- The following parts are to be superseded by GMRT2111 Iss 1 as of 03/06/2017: B4.8.

It is also noted that an assessment of a track lower was outside of the scope of the study undertaken by Solka. The reference to track lowering, already referenced in this letter, is stated as an engineering option which Network Rail has previously considered and provided our engineering assessment to the Vale of White Horse District Council and other stakeholders.

Alternatively, while outside the scope of this study, it would normally prove possible to further improve clearances through:

- a track-lower to make bigger the clearances under the Steventon bridge or over the Stocks Lane level crossing; or

For speeds, greater than 125mph (200km/h) the design values for gradient and changes of gradient shall not exceed the values set out in BS EN 50119 Table 11. For speeds that fall between the values in BS EN 50119 Table 11, the gradient of the greater speed shall be applied. A level span should be provided between changes of direction of gradient.

The existing Network Rail temporary solution is to impose a 60mph PSR (speed restriction until such time as the bridge is reconstructed or other solution) due to the existing wire gradient of 1:295 which is in line with the PBA proposed 1:300.

The second issue at the bridge (described in the above diagram) relates to the clearance between the train pantograph and the bridge. When calculating pantograph clearance 'sway' must also be considered which relates to the dynamic movement of the pantograph itself. Due to the low bridge height, the clearance between the pantograph and the arch of the bridge is such that a speed restriction is required to mitigate the risk of the pantograph striking the bridge. This issue is unrelated to the wire gradient.



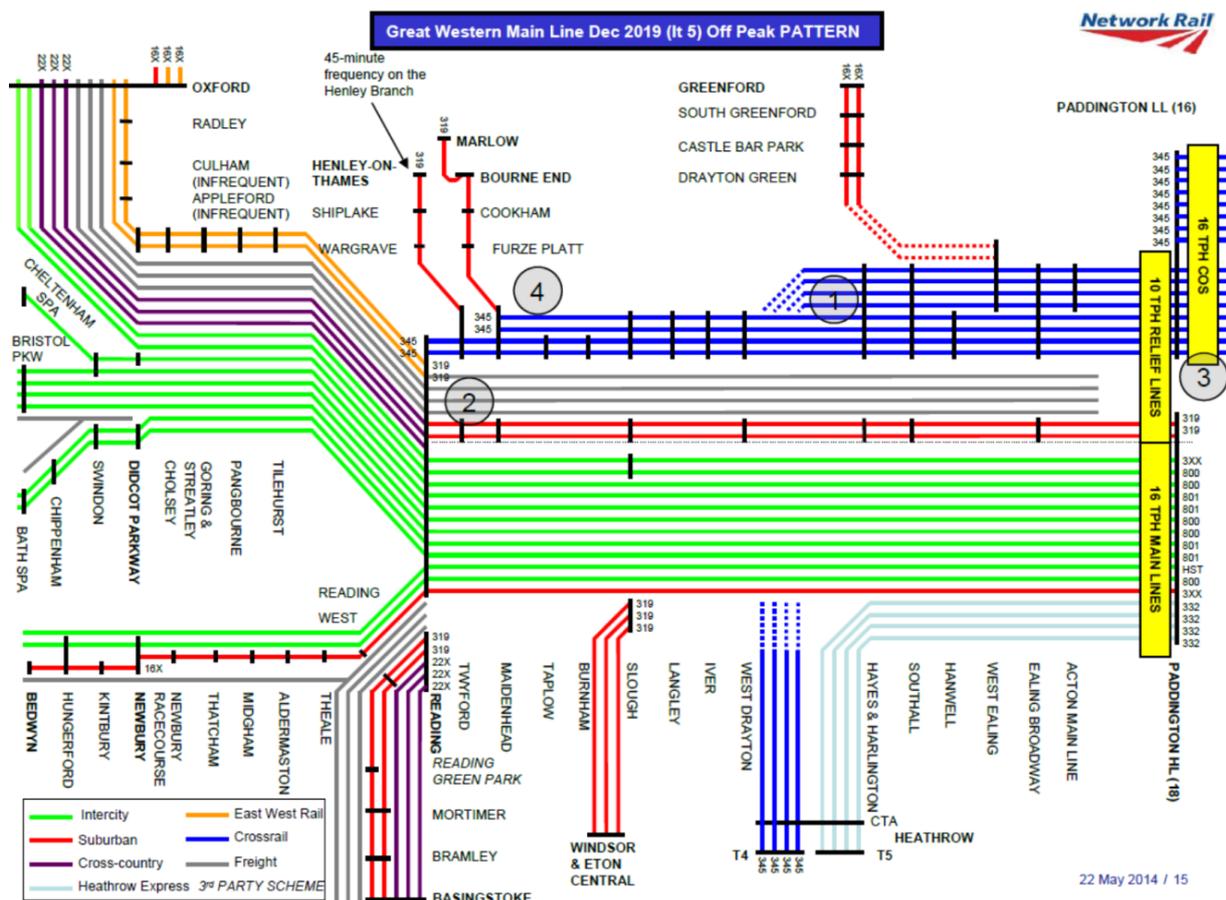
Furthermore, the track has already been slewed as far as possible within industry safety limits to provide maximum clearance which has still resulted in a maximum speed available of 60mph through (under) the bridge.

To summarise, notwithstanding the necessary reduction in line speed with the queried increase of OLE wire gradient, the speed restrictions resulting from pantograph sway still restricts the line speed through the bridge to 60mph. Restricting the line speed underneath the structure, and obviously beyond with the trains having to slow down / speed up to line speed, results in impacts on the use of the rail network and its efficiency. The impacts of these time delays are discussed further below.

### Train capacity - the impact of the 25 second delay

Progressing from the issues discussed above, queries were raised over the significance of the 25 second delay / loss of time as a result of the 60mph speed restriction. Whilst the 25 second delay might not at first seem significant in itself when taken out of context, the impact should not be underestimated.

The off peak train pattern in the indicative diagram below gives an indication of the number of train paths from London Paddington (in the east) to the various destinations to the west, including those that go through Steventon via Didcot Parkway.



This can be summarised as follows:

7 x Intercity Express Trains (IETs) and 2 x Freight per hour, off peak, in either direction between Didcot and Swindon i.e. a total of 14 x IETs + 4 freight = 18 Trains per Hour.

The diagram above and tables below only covers current traffic, and does not consider the Class 387 ECS to/from Swindon Cocklebury which will also run through Steventon.

Note the peak has not been shown as this only represents two hours of the day.

The following information has been provided by the train operator Great Western Railway.

Trains Per Hour	Journey Plan	Trains Per Hour	Journey Plan
2	London to Bristol via Box	2	Bristol to London via Box
2	London to Bristol via Badminton	2	Bristol to London via Badminton
2	London to South Wales	2	South Wales to London
1	London to Kemble and Cheltenham Spa	1	Kemble to London
2	Freight paths	2	Freight paths

The above does not include Empty Coaching Stock (ECS) which will run between Cocklebury (Swindon) and Didcot for stabling, cleaning and minor maintenance.

Line	Stopping or through service	Within Section (Timing Point to Timing Point)	Diagramming assumption	Time (section running time)	Total loss
Down	Stopping	Didcot to Wantage Rd	Electric mode	5minutes	
	Stopping		With power changeover	6 minutes	1minute
Down	Through	Didcot to Wantage Rd	Electric mode	3 minutes	
	Through		With power changeover	4 minutes	1 minute
Up	Stopping	Wantage Rd to Didcot	Electric mode	3.5 minutes	
	Stopping		With Power Changeover	4 minutes	30seconds
Up	Through	Wantage Rd to Didcot	Electric mode	3minutes	
	Through		With power changeover	3minutes	Nil

Above information is based on an assessment undertaken by GWR. Indication of time difference within one section between timing points

Note that whilst the time loss through the Steventon site is approximately 25 seconds this will result in the above loss within the above timing point locations.

Determining the full timetabling impact of this is currently impossible without having a firm timetable offer. It is highly likely that slightly slower journey times will make the pathing of some services more difficult through the critical Swindon-Didcot section, and will therefore contribute towards any path rejections (reduction of trains from the required specification). The timetable is back-timed from Paddington, so the impact is more likely to be west of Steventon.

For Class 387 ECS to/from Swindon Cocklebury, complying with a 60mph PSR will probably add 2-3 minutes to the running time, which is nearly an entire path (4 minutes headway) and will no doubt make pathing extremely difficult beyond early morning / late night.

Due to the above, GWR will be required to bid for diesel timings between Swindon and Didcot (current HST timings) without the improved timings associated with the introduction of IET's.

This is likely to result in a reduction to services from the current specification.

To implement this as a permanent solution would result in a reduction of the number of trains that could run on the network, and a reduction in the efficiency of the network removing the public benefits of electrification.

## **Temporary Parapet Amendments**

The temporary measure - an extension of the bridge parapet heights - has been implemented as an interim solution. It is not sustainable in the long term.

The reason for installing this temporary measure is to allow the electrification of the railway line to proceed. OLE carries 25,000 volts of electricity and is highly dangerous. Network Rail must reduce the risk of electrocution as far as reasonably practicable in accordance with UK and European safety standards. This is a safety requirement for any bridge over a railway line which is powered by Overhead Line Electrification (OLE).

The key constraint of the temporary measure is the requirement for a 60 mph speed restriction on trains as discussed above. The introduction of the speed limit cannot be seen as progress in delivering a nationally significant infrastructure programme; the electrification of the railway line as part of the Greater West route modernisation project.

## **Summary**

The electrification of the Capital to Capital route will result in the first electrified railway between London and South Wales. It will allow for the introduction of new electric trains which are greener, quieter, faster to accelerate and lighter.

Steventon Bridge was built as part of Brunel's original Great Western Railway from Paddington to Bristol, one of the country's 'pioneering phase' lines. Completed to a standardised three-arch design, the bridge has undergone several phases of alteration in its history, including the replacement of its copings, insertion of tie plates and re-facing in engineering brick. However, the most unsympathetic alteration was the insertion of concrete tie bracing to the side arches in 1963.

The option to demolish Steventon Bridge follows a long series of consultations with local and national stakeholders, as well as Network Rail's re-evaluation of the 10 listed overbridges originally identified as requiring full reconstruction. The exceptional engineering challenge of getting the wires under Steventon Bridge is caused by the bridge's position adjacent to two level crossings. The engineering solution required is also exceptional in terms of The Greater West – the decision to demolish a listed bridge.

We hope this provides the Council with the information that they were seeking answers to, and that agreement can now be reached on the above Listed Building Consent application and associated Prior Approval application.

Yours sincerely



Ian Wheaton MRTPI  
**Town Planner**

Enc - Network Rail email response to Solka report dated

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<b>APPLICATION NO.</b>	<a href="#">P17/V1154/LB</a>
<b>SITE</b>	Steventon Overbridge High Street Steventon Abingdon, OX13 6RS
<b>PARISH</b>	STEVENTON
<b>PROPOSAL</b>	Demolition of listed railway overbridge, and provision of replacement bridge. As amended by plans received on 10 August 2017 (additional information received 16 March 2018: Options Review from PBA)
<b>WARD MEMBER(S)</b>	Matthew Barber
<b>APPLICANT</b>	Network Rail
<b>OFFICER</b>	Charlotte Brewerton

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## 1.0 **RECOMMENDATION**

### 1.1 **Listed Building Consent for demolition of the Grade II listed overbridge at Steventon subject to the following conditions:**

**1 : Commencement 3 yrs - Listed Building Consent**

**2 : Approved plans**

**3 : Sample materials (walls - panel)**

**4 : Historic Records**

## 2.0 **BACKGROUND & CONTEXT**

2.1 This application has been called to planning committee by Councillor Matthew Barber.

2.2 The Steventon Overbridge is a grade II listed, brick built 3-arched bridge, with central wide Elliptical arch and flanking narrower round arches located on the edge of Steventon prior to the Milton Interchange. The bridge, which is owned by Oxfordshire County Council, carries the B4017 public road (High Street) over the Great Western Main Line and was listed in 1988.

2.3 In 2011 Network Rail concluded that Steventon Overbridge would need to be demolished to achieve electrification of the Great Western mainline in the upgrade from London to Cardiff.

2.4 Currently the bridge does not have sufficient electrical and physical clearance to allow the safe use of Overhead Line Electrification (OLE) equipment through the bridge. The low clearance through the bridge is exasperated by the need for OLE contact wire to have a minimum safety clearance of 5.8m through the adjacent Level Crossing's, at The Causeway and Stocks Lane, and to maintain a compliant gradient to the contact wire.

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- 2.5 This application has been submitted for Listed Building Consent to demolish the Listed Overbridge. Network Rail have provided justification of the following options, which have been considered and found to be unviable to implement:
1. A full Track lower underneath the bridge
  2. A partial track lower and closure of the Stocks Lane Level Crossing to vehicles
  3. A permanent speed restriction along this section of the line
  4. Closure of Stocks Lane and the Causeway Level Crossings and a new link road.
  5. Bridge lifting (Jacking) Or
  6. Total demolition of the listed bridge
- 2.6 Throughout the application process, Officers have liaised with Network Rail, Historic England and Oxfordshire County Council, who own the bridge, having regular meetings to discuss and consider the most appropriate course of action to ensure the electrification project, which is of national importance, is completed in a timely manner.
- 2.7 The latest delay in the determination of this application has been the need for the Council to gain an Independent Options Review of the Alan Baxter Report and CH2M Hill Report. The Council have requested Peter Brett Associates (PBA) to independently analyse these options to ensure a thorough assessment of the possible alternatives and enable an understanding of the technical issues surrounding the choice for demolition of a listed heritage asset.
- 2.8 The PBA Options Review, **attached** at Appendix 1, has concluded that ‘an exceptional engineering solution to achieve the 125mph running of the Intercity Express Programme (IEP) trains without demolition of the existing listed bridge, may be achievable through a combination of some or all of the following’:
- Closing of Stocks Lane level crossing to vehicles (but remaining open to pedestrians)
  - Exceeding the maximum recommended contact wire gradient on an exceptional basis and
  - Undertaking a partial track lower
- 2.9 In addition to the PBA report, Steventon Parish Council have also commissioned their own independent report, The Solka Report. This report concludes that additional details could be submitted which relate to vertical track alignment, depths of existing ballast and identification of any underground drainage systems which would enable an optimum track lower to allow OLE under the existing bridge. Therefore, demolition is not proven and there are possible technical solutions. A copy of this report is **attached** at Appendix 2.

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3.0 **INTRODUCTION**

- 3.1 The railway passes through Steventon east to west dividing the village into northern and southern parts. The bridge carries the High Street over the railway providing access to the northern part of the village.
- 3.2 The primary routes to the southern half of the village are from the northern part of the village utilising two level crossings, one on Stocks Lane and another on The Causeway.
- 3.3 The southern part of the village includes residential areas and commercial properties including a small business park and a farm located near to the structure. These properties all rely on the level crossings for access. There is an unmade track which is a designated BOAT (Byway Open to All Traffic) but this is narrow with tight turns and not suitable for vehicular traffic (except 4x4's and farm vehicles).

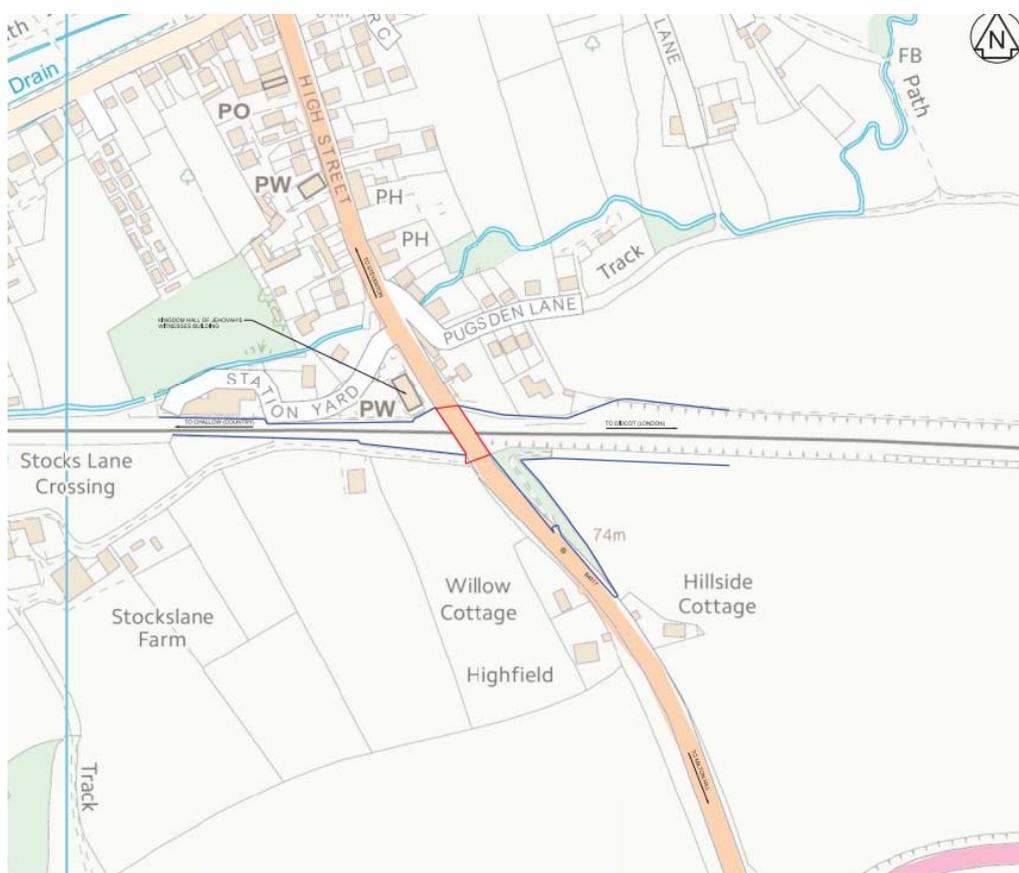


Fig 3.1

- 3.4 Steventon Overbridge forms part of a group of listed station yard buildings including Brook House, Station House and The Sycamores in Steventon Station Yard which were designed by IK Brunel c.1839.
- 3.5 These structures have group value with other listed structures along the route of the GWR from London to Cardiff and Swansea beyond, which were designed by IK Brunel.

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- 3.6 The site abuts the Steventon Conservation Area but is not located in it. The recently updated Flood Maps provided by The Environment Agency identify the site to be located within Flood Zone 3: Functional Floodplain.
- 4.0 **PROPOSAL**
- 4.1 The proposal seeks to demolish the listed bridge and to replace it with a higher contemporary structure as part of the Network Rail electrification of the GWR mainline. A copy of the site location and proposed plans is **attached** at Appendix 3.
- 4.2 This application was registered by the council on 27 April 2017. Included in the supporting documents was an options report which set out 5 alternative options to demolition (as noted above). In addition, a Heritage Statement justifying the demolition of the bridge was also included. A full copy of these documents can be viewed on the councils website at [www.vwhdc.gov.uk](http://www.vwhdc.gov.uk).
- 4.3 Amended drawings have been submitted that show the inner facing of the overbridge, to be used by vehicular traffic, will be faced with red brick panels to retain some of the historic appearance on advice from our Conservation Officer. These plans altered the inner fascia of the bridge from concrete to a red brick slip panel with matching mortar to the existing bridge.
- 4.4 Additional information sought throughout this application process includes:
- Amended bridge design dated 10 August 2017 submitted by Network Rail
  - Explanation from Network Rail regarding temporary measures to the track dated 22 September 2017 – This statement was submitted due to the delay in the application and the need to continue to be able to run electric trains along this part of the track whilst the application was pending. It explains that this temporary option could not be considered a permanent solution in order to retain the bridge.
  - Peter Brett Associates Options Review dated 16 March 2018 – Independent review of the options commissioned on behalf of Vale of White Horse DC.
  - Solka Report commissioned on behalf of Steventon Parish Council dated 23 March 2018.
- 4.5 Alongside this listed building application Network Rail have submitted a prior approval application. P17/V1161/P18 considers the works under Part 18, Class A, Schedule 2 of the Town and Country Planning (General Permitted Development) Order 2015 by Network Rail (NR) in their capacity as statutory undertaker. This application is a process whereby details are notified to the local planning authority prior to the development taking place.

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5.0 **SUMMARY OF CONSULTATION COMMENTS AND REPRESENTATIONS**

The consultation comments received are summarised below. For a full copy of these responses can be viewed online at [www.vwhdc.gov.uk](http://www.vwhdc.gov.uk).

Consultee	Original Proposal	Amended information
<b>Steventon Parish Council</b>	<p><b>Object</b> (11 June 2017)</p> <ul style="list-style-type: none"> <li>• Great historic importance – a symbol of the coming of the GWRL through VOWH</li> <li>• Great effect on Steventon - LBC does not take into account</li> <li>• Not fully investigated – due process not investigated by NR</li> <li>• Options not analysed in depth – rushing application through</li> <li>• No consideration of objections from the village</li> <li>• Costs affect NR – costs by others irrelevant</li> <li>• Alternatives have not been costed in depth</li> <li>• No transport appraisal – no evidence of this within documents</li> <li>• Bridge jacking company not consulted</li> <li>• Heriate Statement not sufficient justification</li> </ul>	<p><b>Object</b> (4 April 2018)</p> <ul style="list-style-type: none"> <li>• Insufficient information to justify demolition</li> </ul>
<b>Drayton Parish Council</b>	<p><b>Object</b> (10 June 2017)</p> <ul style="list-style-type: none"> <li>•Traffic often queues at the double roundabout in Abingdon, so Draytonians often drive South to the Milton interchange (via this bridge) to get onto the A34 to then drive north. Traffic from Steventon will also be forced to take alternative routes.</li> <li>•Three major housing sites are being built in Drayton and the closure of the bridge will</li> </ul>	<p><b>Object</b> (26th March 2018)</p> <ul style="list-style-type: none"> <li>• improvement (albeit a small one).</li> <li>• concerns regarding the disruption and the knock-on effects on Drayton remain.</li> <li>• Amendments do not address</li> </ul>

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	<p>force construction traffic to go via Milton or Abingdon.</p> <ul style="list-style-type: none"> <li>•Major traffic issues will arise if the A34 is shut.</li> <li>•The condition on the Hanney Road is poor so it is not a viable alternative route.</li> <li>•Cycling from Abingdon to Harwell will be disrupted.</li> <li>•Bus route will be disrupted.</li> <li>•Any possibility to keep the road open must be considered.</li> <li>•Cost to the local economy.</li> <li>•The listed bridge will be replaced by a concrete structure.</li> </ul>	<p>our previous concerns regarding the proposal to replace the bridge.</p>
<p><b>Sutton Courtenay Parish Council –</b></p>	<p><b>Object (30 June 2017)</b></p> <ul style="list-style-type: none"> <li>• harm to the historic environment and importance of the bridge and surrounding area,</li> <li>• not enough justification for loss of bridge.</li> </ul> <p><b>Object (11 September 2017)</b></p> <ul style="list-style-type: none"> <li>• Aware the proposal materials have changed</li> <li>• Main concern is traffic impact</li> <li>• Route is main access and local village roads are at capacity</li> <li>• Parish fully supports local view with regards to traffic impact</li> <li>• Full investigation into diversion routes required</li> <li>• S106 funding should be sought for local traffic schemes.</li> </ul>	<p><b>Object (6 April 2018)</b></p> <ul style="list-style-type: none"> <li>• an engineering solution should be found to keep the existing structure.</li> <li>• Traffic impact</li> </ul>
<p><b>Historic England (South East) – (</b></p>	<p><b>No objection (11 August 2017)</b></p> <ul style="list-style-type: none"> <li>•Adequate justification for demolition has been given by</li> </ul>	<p><b>No Objection (8 September 2017)</b></p> <ul style="list-style-type: none"> <li>• Cladding the inner face of</li> </ul>

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	<p>Network Rail in order to meet the requirements of paragraph 132 of the NPPF.</p> <ul style="list-style-type: none"> <li>• All the potential options are either impossible, would pose a risk to the running of the railway or would involve lengthy closures.</li> <li>• With regret we conclude that the Network Rail have made a clear enough case for the bridge to be demolished in order for electrification to be delivered on time and compromising the service provided by the railway is to be avoided.</li> </ul> <p><b>Holding Comment (23 March 2018)</b></p> <ul style="list-style-type: none"> <li>• The PBA report does not offer a practical alternative solution to demolition and this report does not change our stance. We do not object to the application.</li> <li>• The Solka Report raises serious questions about the necessity for demolition.</li> <li>• The Solka Report concentrates on the technical details of electrifying the line which need clarifying by Network Rail.</li> </ul>	<p>the parapet of the proposed bridge with brick slips would markedly improve its appearance.</p> <ul style="list-style-type: none"> <li>• Our position regarding the principle of demolition remains as set out in our previous letter.</li> </ul> <p><b>No Objection (18 April 2018)</b></p> <ul style="list-style-type: none"> <li>• Obtained clarification from NR on a number of issues</li> <li>• Any speed restriction would prove disruptive to the line reducing maximum capacity</li> <li>• Strong justification for demolition</li> </ul>
<p><b>Conservation Officer (VOWH)</b></p>	<p><b>In-principle objection (21 July 2017)</b></p> <ul style="list-style-type: none"> <li>• Since the bridge is listed and its' condition appears sound, there is, in isolation, no structural reason to justify the demolition of the bridge.</li> <li>• The proposal would affect the character and appearance of the Steventon</li> </ul>	<p><b>No Objection (1 September 2017)</b></p> <ul style="list-style-type: none"> <li>• Highly regrettable in proposing the total demolition of one of a number of bridges.</li> </ul>

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	<p>Conservation Area and would neither preserve nor enhance it by means of the proposed total demolition.</p> <ul style="list-style-type: none"> <li>• The bridge is worthy and capable of retention and significant locally and nationally as a bridge which was designed and constructed by a nationally important engineer.</li> <li>• In my view the proposal constitutes substantial harm, as it results in total loss of the designated heritage asset under section 133 of the NPPF.</li> <li>• It is recognised that the Planning Officer must take into account the wider public benefits of the national electrification scheme and consider whether the public benefits of the scheme outweigh the harm of the demolition and replacement of the bridge.</li> </ul> <p><b>Holding comment</b> (3 April 2018)</p> <ul style="list-style-type: none"> <li>• Network Rail is given the opportunity to respond to the SOLKA Report before a decision is made on the fate of the bridge.</li> <li>• Historic England is the government's expert advisors on heritage matters. It is therefore important that the Council follows the advice of Historic England in obtaining these points of clarification</li> </ul>	<ul style="list-style-type: none"> <li>• Should demolition be deemed on balance acceptable by the Planning Officer, details should be supplied by condition.</li> </ul> <p><b>No Objection</b> 19th April 2018</p> <ul style="list-style-type: none"> <li>• I regrettably concur with the recommendations of Historic England as the government's advisors on national heritage.</li> </ul>
<b>OCC Highways</b>	No statutory requirement to consult on an LBC application	Sent a statement with regards to traffic implications. <b><u>Attached</u></b> at Appendix 4

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<p><b>Wantage &amp; Grove Campaign Group</b></p>	<p><b>Object (6 June 2017)</b></p> <ul style="list-style-type: none"> <li>• No sufficiently detailed analysis</li> <li>• 10months no turning at traffic lights, traffic problems on A34 and hold ups at Milton Road and additional traffic at Hanney and Drayton</li> <li>• Options to lower track, lift bridge and track slew but NR don't want to do it NR Not following due process</li> <li>• Should have analysed all alternatives thoroughly not dismissed them</li> <li>• Evidence must be provided to demonstrate demolition only solution – dispute</li> <li>• EA says no flood risk therefore lower track. If flooding can use a pump to pump it away</li> <li>• Open a new station at Grove for new railway line from Oxford to Bristol – hope the new design can accommodate this and not need more road closures and replacement for this too.</li> </ul>	
<p><b>Neighbours Object (46)</b></p>	<ul style="list-style-type: none"> <li>• Whilst it is acknowledged that the current bridge cannot accommodate the electrification of the railway, the proposed solution is an ill-considered and generic solution that might be satisfactory for other locations along the line but is completely unsatisfactory for Steventon.</li> <li>• Due process not followed</li> </ul>	<ul style="list-style-type: none"> <li>• No alternative options have been seriously considered by NR.</li> <li>• combination of options would allow the passage of electrically powered trains without undue</li> </ul>

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	<ul style="list-style-type: none"> <li>• Lack of communication from NR to public</li> <li>• No costings for all options shown – not justified</li> <li>• Lack of evidence to make informed or reasoned decision</li> <li>• No structural survey – surely required to assess justifiable?</li> <li>• Historic importance</li> <li>• Group value – remove one element devalue group</li> <li>• VOWH should stand up for LB</li> <li>• Design not in keeping nor does it preserve historic significance</li> <li>• Other options are available</li> <li>• Significant historic value will be lost</li> <li>• Not a sympathetic design</li> <li>• Inappropriate materials, appearance and design</li> <li>• Road closure for 10 months unacceptable</li> <li>• Detrimental to setting of within a conservation area – unique vista</li> <li>• Ugly proposed replacement</li> <li>• Driven by cost and speed of construction</li> <li>• Historic context a secondary consideration</li> <li>• Not fully considered the alternatives</li> <li>• Commercial and political decision</li> <li>• More exploratory work required</li> <li>• Bi mode trains should be used in this location</li> <li>• Traffic implications</li> <li>• Disregard of existing landscapes.</li> </ul>	<p>delays, and without</p> <ul style="list-style-type: none"> <li>• closing the Stocks Lane crossing.</li> </ul>
<b>Neighbours Support (2)</b>	<ul style="list-style-type: none"> <li>• Modernisation and upgrade of the Railway line.</li> </ul>	

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<b>Neighbours No Strong View (2)</b>	<ul style="list-style-type: none"> <li>• Historic asset but unfit for purpose</li> <li>• Modernisation but at expense of listed structure?</li> </ul>	
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6.0 **RELEVANT PLANNING HISTORY**

6.1 P17/V1161/P18 –

Prior Approval for demolition of Steventon Overbridge and replacement bridge as part of the Electrification of the GWRL.

6.2 [P14/V2644/PEM](#) - (12/03/2015)

Great Western electrification project, Steventon Overbridge.

6.3 [P13/V1380/ES](#) - Approved (27/09/2013)

Environmental Statement for the scheme of works to electrify the Great Western Main Line Railway.

7.0 **PLANNING CONSIDERATIONS**

7.1 The main issues in relation to the consideration of this application are:

- The demolition of the bridge which is a Grade II heritage asset

7.2 Saved Policies HE1, HE4 and HE5 of the Vale of White Horse 2011 seek to preserve and enhance heritage assets and protect their setting. In addition, Core Policy 39 of Vale of White Horse 2031 Part 1, has regard to the Historic Environment.

7.3 Paragraph 132 of the NPPF and paragraph 133 of the Framework, states that: Where a proposed development will lead to substantial harm to or total loss of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

- The nature of the heritage asset prevents all reasonable uses of the site; and
- No viable use of the heritage asset itself can be found in the medium term
- Through appropriate marketing that will enable its conservation; and
- Conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and
- The harm or loss is outweighed by the benefit of bringing the site back into use.

7.4 In addition, Officers have to assess this application in accordance with Paragraph 132 of the NPPF which requires “the Council to give “great weight” to the conservation of the bridge and section 16 of the Planning (Listed

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- 7.5 Buildings and Conservation Areas) Act 1990 requires the Council to have “special regard to the desirability of preserving the building or its setting”.
- 7.6 The proposal seeks consent to demolish a grade II listed structure which would lead to the loss of historic fabric and in isolation Officers should recommend refusal of such an application.
- 7.7 However, the proposal seeks to improve the running efficiency of the GWR and in doing so would lead to wider public benefits both nationally and locally. In order to weigh up the balance Officers have considered the options below against Paragraph 132 of the NPPF.
- 7.8 The Council, having considered advice from all statutory consultees must consider the necessity test - whether the total demolition of the bridge is necessary to deliver the substantial public benefits that electrification of the Great Western Main Line would bring. As part of this assessment the alternative options which retain the bridge have been assessed.
- 7.9 **Review of the options**  
**Bridge Jacking**  
Bridge lifting, or jacking up, is a relatively new concept which seeks to raise the entire bridge to achieve the required height underneath to enable the Overhead Line Equipment (OLE) to be placed safely underneath. Whilst it has been achieved successfully in the UK this bridge is slightly different in that it is a 3-arched bridge and the track underneath is on a partial slew. The front face of the bridge has already been refaced in concrete and its arches have concrete bracings with infilling of the lateral pier arches to strengthen them.
- 7.10 Our Conservation Officer has advised that ‘*Jacking is likely to so alter, disfigure and compromise the appearance and proportions of the bridge in relation to its surroundings that even if it were feasible it would not achieve desirable or successful outcomes*’.
- 7.11 Officers consider that in Heritage terms both the Conservation Officers and Historic England advice would not look favourably at this option. Officers accept that this is not a viable option for the bridge.
- 7.12 **Full Track Lower**  
Mill Stream culvert carries Ginge Brook beneath the railway. NR has discounted this option due to the likeliness of flooding that could occur if the track was lowered.
- 7.13 PBA have also concluded that this option would not be viable due to the likeliness of flooding. The Environment Agency have recently updated their hydraulic testing of Ginge Brook which has resulted in them making changes to their flood maps. The land surrounding the railway line has been upgraded from a Flood Zone 1 location, the lowest zone likely to flood, to a Flood Zone 3 location, this being a functional floodplain. Therefore Officers consider that any lowering of the track, whether partial or full, is likely to result in flooding of the railway line. This is therefore not a viable option.

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- 7.14 Permanent Speed Restriction  
NR have eliminated this option as a reduced track speed has disadvantages to train running times and the wear and tear upon the pantograph and contact wire gradient of electrified trains. This in turn would lead to increased maintenance costs.
- 7.15 PBA conclude that this option could be viable (for electric trains only) but would have an operational consequence with running a train at a reduced speed through Steventon (approximately 40mph rather than 125mph).
- 7.16 The Solka Report notes that it is unlikely that trains are passing through Steventon at speeds greater than 100mph due to the changes in tracks from 2 to 4.
- 7.17 Officers note that any speed restrictions would affect the arrival times of trains between London and Cardiff which is contrary to the electrification project of the mainline railway. In a response to the Solka Report HE state that *'contrary to the assumptions made in the Solka report, trains are indeed currently running at 125mph through Steventon.'*
- 7.18 HE advises that should the bridge be retained *'A further issue, that of pantograph sway, has been raised. This would mean that trains are restricted to passing under Steventon bridge at 60mph if the tracks are slewed to obtain maximum clearance. While doubtless the issue of pantograph sway could be addressed by a partial track lower it looks unlikely that full line speed can be achieved here if both the crossings are to be kept open.'*
- 7.19 Furthermore, *'Network Rail have confirmed that at peak times up to 18 trains an hour are passing under the bridge and it is at these peak times that even a relatively small slowing of the line-speed would prove disruptive. The PBA report concludes that even a minor reduction in maximum speed to 105-110 mph (the maximum speed of current bi-modal trains) reduces the maximum capacity of the line here to 18 trains an hour, so presumably a reduction below that would indeed cause issues at peak times and make intensification of traffic very difficult.'*
- 7.20 Officers do not wish to compromise the effectiveness of a national project. Given the likeliness of later arrival times and the increased costs that may be incurred from increased wear and tear to the wires Officers consider that this would not be wholly desirable to the national project resulting in very little gains nationally. Whilst PBA have advised us that this option could be a possibility in reality, when assessing a trains efficiency, maintenance costs versus a considerable improvement to the line and running efficiency Officers consider on balance this option is not viable in this instance.
- 7.21 Reduced Track Lower combined with closure of Stocks Lane Level Crossing to vehicles  
PBA have advised that this option would require more work by NR to understand viability in more detail. It would result in closing Stocks Lane to

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vehicles but open to pedestrians with a maximum track lower of 444mm under the bridge which may present some engineering challenges.

- 7.22 The Solka Report advises that with additional testing and detailed information an optimal track lowering scheme could achieve retention of the bridge.
- 7.23 Officers note that in order to assess Solka Report conclusions additional testing and detailed information is required. This would delay the process, and the overall scheme, even further which already has time pressures from Central Government. The partial lower of the track has already identified that in this location the line could be at risk from flooding and therefore the conclusions put forward by Solka, whilst possible, in this location would not be a viable option.
- 7.24 Officers consider that closing one of the level crossings to vehicles would have significant impacts upon Steventon village and its residents. Retaining the bridge, compromising the project and resulting in highways upheaval elsewhere in the village does not result in significant gains in this instance but only provides to pass a logistics problem elsewhere along the trainline.
- 7.25 Officers consider that retrofitting a scheme around a bridge that is not the best example of a Brunelian structure, increasing project funding and delaying the National scheme further, whilst adding local traffic upheaval to residents of Steventon does not appear to be a pragmatic approach. Therefore, on balance Officers weigh in favour of loss of the bridge when considered against this option.
- 7.26 Closure of Stocks Lane and The Causeway Level Crossings and a New Link Road  
PBA confirm that this option *‘would close Stocks Lane Level Crossing and closes the Causeway Level Crossing to vehicles allowing access only by pedestrians. This would then allow train speed to reach 125mph. Closing both level crossings to vehicles would have a significant effect on the village of Steventon and would require significant highways works to reinstate suitable vehicular access to the south side of the village.’*
- 7.27 Closing the two Level Crossings to vehicular traffic would have a detrimental long term impact on traffic within Steventon and result in significantly more upheaval to the Village road network than closure of the bridge for 10months.
- 7.28 There is a BOAT adjacent to the railway line but this access route is very narrow and does not present an easy option to upgrade for use by heavy traffic flow.
- 7.29 In addition, OCC have advised that they would not permit closure of the level crossings and so officers weigh in favour of bridge demolition based upon the public impact and the benefits a replacement bridge would have versus this option.
- 7.30 Historic England objected to the original proposal. However having reviewed the options and the Heritage Statement they do not object to this application

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and are now satisfied that adequate justification for the demolition of the bridge has been provided.

- 7.31 Officers are mindful that closing the Stocks Lane level crossing would result in an objection from OCC, as Highways Authority, and could result in lengthy public enquiries to get the necessary permissions in order to secure this. In addition, closing of this level crossing would result in significant traffic implications to local residents with the need to find an alternative vehicular route around the village. This would not be beneficial to the public and could result in significant disruptions to the traffic network which could last longer than the planned closure of the road for 10 months.
- 7.32 A number of objections have been received in relation to the demolition and replacement of the bridge due to the road closure and long diversion route which would have to be put in place for approximately 10 months. Closure of the bridge would be extremely inconvenient to residents but in the longer term, once the upgrade of the railway line has been completed, it would return to a fully functioning road through the village without resulting in traffic implications further around the village.
- 7.33 A number of other bridges along this mainline route have been retained throughout the undertaking of this electrification project. Steventon Overbridge given its design as a 3 arched bridge, its location within a floodplain, its partial track slew and its identification at not being '*the best example of a 'Brunealien' structure*' have provided difficulties in its retention.
- 7.34 There is no option to fit in alternative road links in this part of Steventon and as such a replacement, purpose built bridge is considered, regrettably, the most beneficial option in this instance.
- 7.35 The bridge abuts the Conservation Area. Officers consider that the loss of the bridge would not be materially detrimental to the wider visual significance of the Conservation Area. This is due to the limited views from public vantage points that the bridge commands. Its loss would not cause severe visual harm to The adjacent Conservation Area.

## 8.0 CONCLUSION

- 8.1 Having regards to Paragraph 132 of the NPPF, to give great weight to the conservation of the bridge and section 16 of the Planning (Listed Buildings and Conservation Areas) Act 1990, to have special regard to the desirability of preserving the building or its setting, whilst there would be significant harm from the loss of a historic asset, demolition is outweighed by the public benefits both locally and nationally.
- 8.2 Demolition and the provision of a replacement structure allows important modernisation to the railway network. Whilst officers are aware that in the short term there would be significant traffic implications to Steventon and the wider area, once the upgrading works are completed there will be no longer term traffic implications to residents and the village of Steventon from its loss.

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- 8.3 Given the location of the bridge within Flood Zone 1 and the probability of flooding of the railway line, Officers consider that any lowering of the track would cause severe implications to the running capacity of the track. This is not in the national interest nor would it result in public benefits that the electrification project is trying to achieve.
- 8.4 The closure of the levels crossings and a speed restriction on this part of the line has been discounted due to the extremely disruptive impact it would have upon running capacity of a busy line. Furthermore, a speed restriction along this part of the line would have implications to the maintenance of the OLE equipment.
- 8.5 There would be no possibility of an alternative route to allow vehicles from this part of Steventon to gain access to the wider surrounding area. The adjacent BOAT is too narrow with any upgrading works needing to be considerable to provide for a heavy flow of local traffic.
- 8.6 Officers therefore consider that having assessed all viable options, on balance and regrettably, the justification for the total demolition of the bridge is necessary to deliver the substantial public benefits that electrification of the Great Western Main Line would bring. This is in accordance with Policies HE1, HE4 and HE5 of the Vale of White Horse Saved Policies 2011 and Core Policies 37, 39 and 40 of the Adopted Vale of White Horse Local Plan 2031.

**9.0 POLICIES**

- 9.1 The following planning policies have been taken into account:
- 9.2 Vale of White Horse Local Plan 2011 (SOLP 2011) policies;  
HE1- Preservation and enhancement- implications for development  
HE4- Development within the setting of a listed building  
HE5 - Development involving alterations to a listed building
- 9.3 Vale of White Horse Local Plan 2031 Part 1  
CP37- Design and Local Distinctiveness  
CP39- The Historic Environment  
CP40- Sustainable Design and Construction

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