

Infrastructure Projects

Northern Programmes



The Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order

Wheatley's Overbridge (MVL3/103) Heritage Assessment

Network Rail

March 2021



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1. INTRODUCTION

1.1 Report objectives

- 1.1.1 The Scheme is part of a wider programme of works known as the Transpennine Route Upgrade (TRU) (herein referred to as the Programme) which will improve the Transpennine railway between Manchester, Huddersfield, Leeds and York and improve connections between key towns and cities across the north of England. The Scheme will contribute to the overall TRU Programme aims of increasing service capacity and offering journey time benefits through:
- Four tracking and upgrading of the existing railway line including track realignment (currently the majority of the railway in the Scheme area has two tracks);
 - Electrification of the line;
 - Increase in line speeds;
 - Provision of sections of new railway;
 - Provision of new grade-separated junction within the Ravensthorpe area;
 - Remodelling of stations including platform extension works at Deighton, Mirfield and Huddersfield; and
 - Provision of replacement station at Ravensthorpe.
- 1.1.2 As well as the works identified above, various other engineering works are necessary including strengthening and replacement of bridge decks (rail and highway); electrification of the line and provision of associated infrastructure will require raising the height, demolition of or replacement of bridge structures.
- 1.1.3 The Transport and Works Act 1992 introduced section 12(3A) into the Planning (Listed Buildings and Conservation Areas) Act 1990, the effect of which is to "call-in" for determination by the Secretary of State applications to the local planning authority for Listed Building Consent where such consent is required in consequence of proposals included in an application for a Transport and Works Act Order (TWAo). The procedures in the Transport and Works Applications (Listed Buildings, Conservation Areas and Ancient Monuments Procedure) Regulations 1992 then apply to the call in of such Listed Building Consent applications.
- 1.1.4 Wheatley's Overbridge (MVL3/103) was designated a Grade II listed building in March 2018. The Historic England list description (included in full in Appendix B) names the listed building as "Railway overbridge MVL3/103, Colliery Lane (Wheatleys)". Throughout this Heritage Assessment the structure is referred to as "Wheatley's Overbridge (MVL3/103)".
- 1.1.5 This Heritage Assessment has been compiled in support of an application for Listed Building Consent by Network Rail in respect of the proposed works on the Grade II Listed Wheatley's Overbridge (MVL3/103) (NHLE 1450537), Kirklees, West Yorkshire.
- 1.1.6 This Heritage Assessment will seek to:
- Identify and discuss the heritage significance of the listed structure;
 - Present the design requirements of the Scheme at the structure;
 - Present the process of design development and optioneering which has led to the design proposal for the Scheme in relation to the structure;
 - Identify the impacts of the design proposal on the significance of the structure, in the context of current national planning policy and guidance;
 - Discuss any mitigation and/or compensation recommended in relation to the structure; and

- Consider the public benefits to be gained from the design proposal in relation to the structure, weighed against the impact on significance, in line with current national planning policy and guidance.

1.1.7 The construction methodology for the proposals, is set out in the Code of Construction Practice (CoCP). Part A of the COCP is provided in Appendix 2-1 in Volume 3 of the Environmental Statement (ES) submitted as part of the TWAO submission. Part B of the CoCP will incorporate a Noise and Vibration Management Plan, a Nuisance Management Plan and a Demolition Methodology Statement. These documents will be submitted to and agreed by the Local Authority pursuant to a condition to be attached to the deemed planning permission¹ prior to construction works commencing. Specific details of mitigation and compensation measures will be detailed in the Conservation Implementation and Management Plan (CIMP) for the Scheme to be submitted pursuant to a condition attached to the Listed Building Consent.

1.2 Current Condition

- 1.2.1 Wheatley's Overbridge (MVL3/103) is a two span, masonry arch, pedestrian and cycle bridge located close to the settlements of Deighton and Bradley, in Kirklees, West Yorkshire (Grid Reference SE1709919855). The bridge carries the National Cycle Route 66 over the railway.
- 1.2.2 The overbridge (see Insert 1-1) was constructed in two phases; originally built in 1849 as a single span masonry arch bridge, in the 1880's a second span was added to the south consisting of a brick arch ring with stone voussoirs, as part of the London & North Western Railway (LNWR) widening of the railway. The later alteration shows a great degree of care and effort to duplicate the original structure in a manner sympathetic to the original bridge's design and detailing. The substructure is made of stone and consists of two abutments, with wingwalls of different geometries to suit the surrounding embankment, and a central pier.
- 1.2.3 Two railway tracks pass under the north-western span 1 (the 1849 span); the Up line to Huddersfield and the Down line to Bradley. A Network Rail vehicle access track currently passes under the south-eastern span 2 (the 1880s span).
- 1.2.4 The structure was subject to a detailed examination as part of Network Rail's maintenance regime in 2012, which identified that it was in a fair condition.

¹ On making an order under the Transport and Works Act 1992, the Secretary of State may direct that planning permission shall be deemed to be granted, subject to such conditions (if any) as may be specified in the direction.



Insert 1-1 Wheatley's Overbridge (MVL3/103), viewed from the north-east. The original 1849 span is on the right, with the later 1880s span on the left.

1.3 Summary of proposal

- 1.3.1 To achieve the TRU Programme objectives of improving the reliability and resilience of the railway, the railway lines will be increased from two to four lines at the location of Wheatley's Overbridge (MVL3/103). The electrification of the lines with Overhead Line Electrification (OLE) will also be required at this location. This will result in the proposed new track alignments clashing with the north-east abutment and intermediate pier of MVL3/103 Wheatley's Overbridge (see Insert 2-8). Additionally, the bridge's existing arches have inadequate headroom for the proposed OLE.
- 1.3.2 In order to accommodate the additional tracks and OLE, it is proposed to demolish the Grade II Listed Wheatley's Overbridge (MVL3/103), to provide the adequate required horizontal and vertical clearance. A replacement structure will be constructed.
- 1.3.3 The design development process for the proposals at the structure has included appraisals of various options to identify an approach which delivers the operational requirements, whilst minimising, where practical, impacts on the heritage significance of the structure. This is outlined in Section 3.2. The design has been developed alongside consultation with Historic England and the Kirklees Council Conservation Team; this is detailed below in Section 1.5.

1.4 Legislative and policy context

Legislation

- 1.4.1 The Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended) governs the designation and works to listed buildings in England.
- 1.4.2 The Act states in **s.1 (5)**:

'In this Act "listed building" means a building which is for the time being included in a list compiled or approved by the Secretary of State under this section; and for the purposes of this Act—

- (a) any object or structure fixed to the building;*
- (b) any object or structure within the curtilage of the building which, although not fixed to the building, forms part of the land and has done so since before 1st July 1948, shall be treated as part of the building.'*

1.4.3 Under the Act, no one is permitted to undertake or cause to be undertaken any works that would affect the character of a listed building unless the works are authorised. **Section 16** of the Act identifies that whether such works can be carried out is determined by the local planning authority or the Secretary of State:

'(1) Subject to the previous provisions of this Part, the local planning authority or, as the case may be, the Secretary of State may grant or refuse an application for listed building consent and, if they grant consent, may grant it subject to conditions.

(2) In considering whether to grant listed building consent for any works the local planning authority or the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses.

(3) Any listed building consent shall (except in so far as it otherwise provides) ensure for the benefit of the building and of all persons for the time being interested in it.'

1.4.4 In relation to the granting of Listed Building Consent, Section 17 of the Act stipulates that conditions attached to Listed Building Consent may include those with respect to:

'(a) the preservation of particular features of the building, either as part of it or after severance from it;

(b) the making good, after the works are completed, of any damage caused to the building by the works; [and]

(c) the reconstruction of the building or any part of it following the execution of any works, with the use of original materials so far as practicable and with such alterations of the interior of the building as may be specified in the conditions'.

1.4.5 It is also defined in s.17 (2) that a condition *'may also be imposed requiring specified details of the works (whether or not set out in the application) to be approved subsequently by the local planning authority or, in the case of consent granted by the Secretary of State, specifying whether such details are to be approved by the local planning authority or by him'.*

1.4.6 The Act also states in **s.66 (1)**:

'In considering whether to grant planning permission or permission in principle for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses'.

National Policy

1.4.7 The National Planning Policy Framework (NPPF, 2019) provides the Government's national

planning policy on the conservation of the historic environment, supported by the Planning Practice Guidance (updated July 2019). It was published in March 2012 and revised in February 2019. This Heritage Assessment aims to address relevant policy within the NPPF in relation to Section 16 'Conserving and enhancing the historic environment' and includes an assessment of significance of the heritage assets and their setting that may be affected by the proposed works, in compliance with paragraphs 189-202.

1.4.8 The following paragraphs as set out in the NPPF include key provisions considered of particular importance to this application.

- **Paragraph 189** - *In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance [...]*
- **Paragraph 193** - *When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss, or less than substantial harm to its significance.*
- **Paragraph 194** - *Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification.*
 - a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional;
 - b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional².
- **Paragraph 195** - *Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:*
 - a) the nature of the heritage asset prevents all reasonable uses of the site; and
 - b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and
 - c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and
 - d) the harm or loss is outweighed by the benefit of bringing the site back into use.
- **Paragraph 196** – *Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including, where appropriate, securing its optimum viable use.*
- **Paragraph 197** – *The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgment will be required having regard to the scale of any harm or loss and the significance of the heritage asset.*

1.4.9 The National Planning Practice Guidance (Historic Environment) (PPG) gives further information on how national policy is to be interpreted and applied locally. The PPG includes

² Non-designated heritage assets of archaeological interest, which are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets

particular guidance on matters relating to protecting the historic environment. The PPG for historic environment was significantly updated in 2019 to reflect the changes made in 2018/19 to NPPF policy.

Local policy

- 1.4.10 The Kirklees Local Plan was adopted in February 2019 and is now the statutory development plan for Kirklees providing a set of planning policies.
- 1.4.11 Kirklees Council recognises that *heritage assets are an irreplaceable resource and should aim to conserve them in a manner appropriate to their significance*³. Section 14.1 of the Local Plan sets out **Policy LP35** relating to the historic environment. The entire text of this policy is reproduced below:

Policy LP35 Historic Environment

1. *Development proposals affecting a designated heritage asset (or an archaeological site of national importance) should preserve or enhance the significance of the asset. In cases likely to result in substantial harm or loss, development will only be permitted where it can be demonstrated that the proposals would bring substantial public benefits that clearly outweigh the harm, or all of the following are met:*
 - a) *the nature of the heritage asset prevents all reasonable uses of the site;*
 - b) *no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation;*
 - c) *conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and*
 - d) *the harm or loss is outweighed by the benefit of bringing the site back into use.*
2. *Proposals which would remove, harm or undermine the significance of a non-designated heritage asset, or its contribution to the character of a place will be permitted only where benefits of the development outweigh the harm having regard to the scale of the harm and the significance of the heritage asset. In the case of developments affecting archaeological sites of less than national importance where development affecting such sites is acceptable in principle, mitigation of damage will be ensured through preservation of the remains in situ as a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before or during development.*
3. *Proposals should retain those elements of the historic environment which contribute to the distinct identity of the Kirklees area and ensure they are appropriately conserved, to the extent warranted by their significance, also having regard to the wider benefits of development. Consideration should be given to the need to:*
 - a) *ensure that proposals maintain and reinforce local distinctiveness and conserve the significance of designated and non-designated heritage assets;*
 - b) *ensure that proposals within Conservation Areas conserve those elements which contribute to their significance;*
 - c) *secure a sustainable future for heritage assets at risk and those associated with the local textile industry, historic farm buildings, places of worship and civic and*

³ Kirklees Council, Kirklees Local Plan Strategy and Policies, 2019, 144. <https://www.kirklees.gov.uk/beta/planning-policy/pdf/local-plan-strategy-and-policies.pdf>

institutional buildings constructed on the back of the wealth created by the textile industry as expressions of local civic pride and identity;

- d) identify opportunities, including use of new technologies, to mitigate, and adapt to, the effects of climate change in ways that do not harm the significance of heritage assets and, where conflict is unavoidable, to balance the public benefit of climate change mitigation measures with the harm caused to the heritage assets' significance;*
- e) accommodate innovative design where this does not prejudice the significance of heritage assets;*
- f) preserve the setting of Castle Hill where appropriate and proposals which detrimentally impact on the setting of Castle Hill will not be permitted*

1.5 Consultation

- 1.5.1 Historic England and Kirklees Council have been involved in ongoing stakeholder consultation with Network Rail through the development of the Transpennine Route Upgrade between Huddersfield and Westtown (Dewsbury).
- 1.5.2 Regular meetings with both these historic environment stakeholders have been held to discuss structures of heritage significance on the alignment of the railway which are subject to impacts during the construction or operation of the proposed scheme. The first of these meetings was held in September 2019⁴, with subsequent meetings held approximately every six to eight weeks, each meeting covering a group of structures (with not every structure discussed at every meeting). Each meeting is referred to as a 'round' of consultation in the bullet point list below.
- 1.5.3 The design development and proposals for Wheatley's Overbridge (MVL3/103) were presented to and discussed during meetings with the statutory historic environment stakeholders on the following dates:
 - 4 September 2019 - W3 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (1st round);
 - 17 October 2019 - W3 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (2nd round);
 - 5 December 2019 - W3 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (3rd round);
 - 23 January 2020 - W3 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (4th round);
 - 10 March 2020 - W3 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (5th round);
 - 21 April 2020 - W3 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (7th round); and
 - 13 August 2020 - W3 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (10th round).
- 1.5.4 The engagement with Historic England and Kirklees Council between September 2019 and August 2020 focussed on the design development around the Scheme which attempted to avoid the need to demolish the Listed bridge. This included presentation of the Scheme requirements, as well as the results of optioneering and reverse engineering exercises; in

⁴ Meeting held on 4 September 2019 in Leeds.

some cases, such as considering the extent to which original fabric within the bridge might be retained in a replacement (see below, paragraphs 3.2.4 – 3.2.10), such processes were instigated by the discussions with stakeholders in the meetings.

- 1.5.5 The meeting on **4 September 2019** introduced the newly listed (March 2018) Grade II Wheatley's Overbridge (MVL3/103) and why it is considered of special interest. The potential constraints it posed to four tracking (narrow railway corridor) and limited headroom under the bridge arches for accommodating OLE, were also explained. Stakeholders accepted that there were specific challenges at this location, which could result in substantial modification or demolition of the bridge if optioneering for achieving retention and less optimum improvements did not work.
- 1.5.6 The meeting on **17 October 2019** re-affirmed the design constraints and the inability to accommodate the improvements with the current bridge. Challenges around buried water services within the bridge were also mentioned. It was agreed to consider options that looked to retain as much historic fabric as possible through a modified bridge option.
- 1.5.7 At the meeting on **5 December 2019**. The results of the optioneering exercises were presented (see paragraphs 3.2.4 - 3.2.8 below for more detail). The approaches for reverse engineering the track alignment was shown which revealed that changes to the horizontal alignment of track would affect third party landowners outside of Network Rail's boundary. Even if the horizontal alignment could be made to fit, the OLE clearance from the vertical alignment would not be sufficient. It was also shown that some historic fabric could be retained within a newly constructed bridge, but it would be minimal and limited only to the southern abutment. This would fail to bring about design legibility and an understanding of the change. Discussions on retention of historic fabric concluded that this was not an appropriate solution due to the limited amount of historic fabric that could be incorporated into a new structure (see paragraphs 3.2.9 and 3.2.10 below for more detail). Agreement was made to develop options for a wholly new bridge in this location, with the acceptance that the historic fabric would be totally lost.
- 1.5.8 At the Meeting on **23 January 2020**, it was agreed with stakeholders that clear justification and explanation of optioneering to be provided to support conclusion that MVL3/103 Wheatley's Overbridge would need to be demolished and the public benefits that result from enabling the Scheme to go ahead. Stakeholders were then presented with 4 options for a new bridge (discussed below in paragraphs 3.2.12 - 3.2.15) which would deliver the TRU improvements, with further architectural inputs to refine design at next meeting.
- 1.5.9 The **10 March 2020** meeting provided information on the preferred materials for the new bridge. The idea of using weathering steel for the parapets was well received as it reflected the industrial nature of the bridge (as an access point across the railway between Wheatley's colliery and the canal). Discussion explored the opportunity for embedding interpretation into the bridge structure and this was an action noted for the following meeting.
- 1.5.10 In the meeting of **21 April, 2020**, a fly-through model was presented and final clarifications made on the design and choice of materials with agreement to pursue interpretation within design which was understood to be a crucial element to compensate for the loss of the structure. The fly-through and new bridge style was warmly received as it reflected the original purpose of a crossing here through use of material to signify industrial credentials. It was also commented that the structure was honest and new which is the best solution, with historic material being considered for re-use elsewhere.
- 1.5.11 In the final **13 August 2020** meeting with stakeholders, concept designs for interpretation were revealed and were positively received. Stakeholder expressed their desire to continue to engage with the interpretive element during the final design phase. Final visualisations

were also shown (see Insert 3-3) and the new structure was accepted as a suitable replacement for the historic bridge. It was noted that full justification and design choices were to be documented in a Heritage Assessment.

- 1.5.12 Engagement with Historic England and Kirklees Council with regards to Wheatley's Overbridge (MVL3/103) will continue throughout the period of submission and determination of the TWAO and subsequently into the discharge of conditions to be attached to the Listed Building Consent.

2. HERITAGE ASSETS AND THEIR SIGNIFICANCE

2.1 Wheatley's Overbridge (MVL3/103) (Grade II Listed, NHLE 1450537)

Historic background

History of the Transpennine Route

- 2.1.1 The Transpennine Route between Huddersfield and Westtown (Dewsbury) was constructed and opened between 1836 and 1849. The route today comprises sections of rail line developed by different railway companies, characteristic of the wider Transpennine Route between York, Selby and Manchester. The complex chain of companies and projects is a typical product of the "Railway Mania" of the mid-1840s, the height of a period of commercial confidence and expansion in the railways⁵.
- 2.1.2 Between Huddersfield and Westtown (Dewsbury), the Transpennine Route is made up of sections of:
- The Manchester & Leeds Railway, constructed 1836-39, between Ravensthorpe and Heaton Lodge;
 - The Leeds, Dewsbury & Manchester Railway, constructed 1845-47, between Westtown (Dewsbury) and Ravensthorpe; and
 - The Manchester & Huddersfield Railway, constructed 1846-49, between Heaton Lodge and Huddersfield.
- 2.1.3 The line formed a new, more direct route to the West Riding from Manchester, in competition to the earlier Manchester & Leeds Railway which had been constructed through the Calder Valley in the late 1830s. The more direct route was enabled partly through the advances in tunnel construction and large-scale engineering technology, notably realised through the construction of the 3-mile Standedge Tunnel under the Pennine watershed to connect the line between the Upper Thame and Colne Valleys. Between Huddersfield and Westtown (Dewsbury), the line is partly characterised by such examples of large scale and/or pioneering engineering structures, including tunnels, viaducts and both masonry and cast-iron bridges.
- 2.1.4 The development and expansion of the railways and their associated infrastructure during the first half of the 19th century, was characterised by the considerable influence on those towns which experienced the development of this new mode of transport. The railways resulted in place-making and industrial growth, as towns benefited from the connections and influences which they brought with them. The Transpennine Route between Huddersfield and Westtown (Dewsbury) certainly had an influence on towns, forming an additional infrastructure element of the expansion of settlements, such as Huddersfield, which was already underway as a result of the growth of textile, mining and maltings industries.

⁵ Alan Baxter Associates, 2019. TransPennine Route Upgrade Route-wide Statement of Significance. 14.

- 2.1.5 Wheatley's Overbridge (MVL3/103) is located on the section of the Transpennine Route constructed by the Manchester & Huddersfield Railway between 1846 and 1849. The line was engineered by Alfred Stanistreet (A.S.) Jee and Joseph Locke. Before construction was complete, the company was absorbed, along with the Leeds, Dewsbury & Manchester Railway into the London & North Western Railway (LNWR) company. Following the creation of the route in 1846-9, there were a series of staged changes to the railway to update the infrastructure and increase capacity across the route. This section of line was widened during the expansion of the railway by the LNWR in the 1880s and 1890s to incorporate four tracks in place of the previous two.
- 2.1.6 Further alterations to the railway in the early 20th century resulted in additional changes to the railway infrastructure, mostly relating to the opening and closure of stations and railway lines, around Wheatley's Overbridge (MVL3/103) in Deighton and Bradley. The original station at Deighton closed in 1930 and reopened in 1982, the spur lines from Kirkburton closed in 1971 and Bradley Station closed in 1950. The track through Bradley Junction remains in operation, linking the Transpennine Route with the Calder Valley Line; services from Huddersfield have used this link to the Calder Valley Line since 2000.
- 2.1.7 The history and significance of the Transpennine Route is discussed at more length in the Route-Wide Statement of Significance (Alan Baxter, 2019). This was produced to characterise the overall heritage significance of the Transpennine Route as a whole and is included in Appendix 6-1 of the ES for the Scheme.

Wheatley's Overbridge (MVL3/103)

- 2.1.8 Wheatley's Overbridge (MVL3/103) was constructed in 1845-1849, during the Heroic Age (1841-1850) of railway building. The single-span overbridge was designed by A.S. Jee for the Huddersfield and Manchester Railway. A bridge, named as 'Colliery Bridge', is shown in this location on the first edition 1:10,560 Ordnance Survey (OS) map of 1854 (see Insert 2-1 below); the bridge is thought to have been built to allow access down to the canal where there is an industrial complex shown, named on the 1854 map as Colne Bridge Colliery. This colliery is no longer present on mapping by 1890 but is believed to be the source of the bridge's name in reference to the owner of the colliery, Charles Wheatley J.P. The Wheatley family was a wealthy coal mining family, and Charles Wheatley owned several land and coal mines in the area, one of which is believed to be Colne Bridge Colliery, which Wheatley's Overbridge (MVL3/103) served. In 1851, Wheatley had 110 men and 140 boys working in his coal mines. He was operating the Hagg Wood and Whitley Wood day holes in Dewsbury, the Bradley and Helm coal mines in Huddersfield and the Ledgard Bridge and Calder Day Holes at Mirfield.



Insert 2-1 First Edition Ordnance Survey Six-inch map of Yorkshire (surveyed 1848-50, published 1854) showing Wheatley's Overbridge (MVL3/103) (in blue circle)

- 2.1.9 The quadrupling of the railway in the early-mid 1880s by LNWR resulted in extensive alteration to the original bridge structure. This included constructing a second segmental arch allowing the bridge to span four tracks. As discussed below, it is noteworthy that this widening of the structure was conducted in a sympathetic manner.
- 2.1.10 In 1910, the Midland Railway opened a branch line from Mirfield to Newton Goods Depot Huddersfield; this new line crossing the colliery site and the LNWR mainline just south of Wheatley's Overbridge (MVL3/103), navigating across the River Colne valley by way of a considerable viaduct which is still extant. When the line closed in 1937, Wheatley's Overbridge (MVL3/103) remained largely disused until 2000 when both the bridge and the disused Midland Railway branch line were combined into The Calder Valley Greenway, part of Sustrans National Cycle Network (NCN) Route 66, from Manchester to Spurn Head. A disused bridge abutment (MVL3/106) from the former Midland Railway branch line is also still visible today.

Description

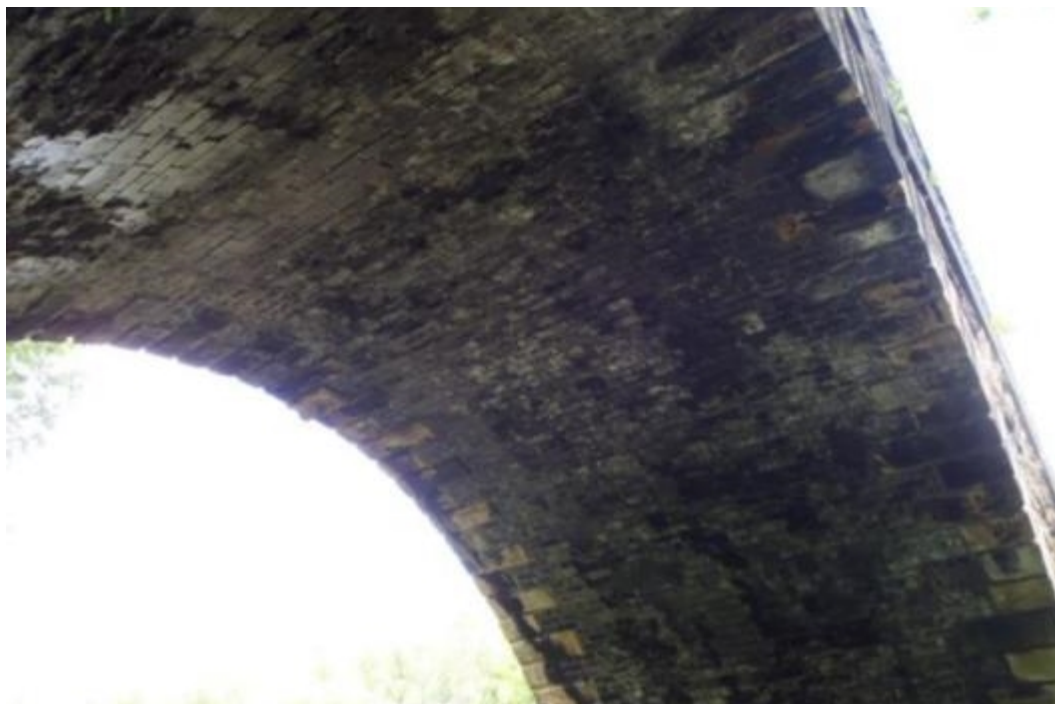
- 2.1.11 The bridge spans over the railway which is in cutting at this section of the line, and both the structure's ends are buried into the embankments on either side of the railway corridor. The double-span segmental arch bridge has a semi-circular span, with the original north-western span (span 1) (Insert 2-2 and 2-3) consisting of an approximately 9.09m masonry arch bridge and the later 1880s south-eastern span (span 2) (Insert 2-4) consisting of an approximately 7.62m brick arch ring. Both faces of the arches have tooled keyed rusticated v-jointed gritstone voussoirs with projecting key stones and tooled edges resting on slightly projecting ashlar impost bands. The voussoirs project out slightly from the surfaces of the soffits of the arches. The arch soffit is comprised of narrow courses of masonry, with tooled detailing.



Insert 2-2 Original 1840s north-western span (1) detailing



Insert 2-3 Original span (1) masonry arch detailing



Insert 2-4 1880s south-eastern span (2) brick arch detailing

- 2.1.12 The substructure of the bridge consists of two approximately 1.6m thick abutments, with wingwalls of different geometries to suit the surrounding embankment, and a 2.7m thick central pier. The abutments are built of coursed quarry-faced gritstone. The quoins of the abutments are of quarry-faced stone with tooled edges. The central pier and the ends of the bridge are supported by canted buttresses.



Insert 2-5 South-eastern abutment wingwall on west side



Insert 2-6 Central pier south face, viewed from access road

- 2.1.13 The spandrel walls are also of coursed quarry-faced gritstone which are even in height and are topped by an ashlar string course that acts as a base for a parapet wall with ashlar coping stones. The parapets are protected by a triple tubular steel fence with cast-iron fence posts that are supported by bolted struts recessed into the sides of the coping stones; the date of this addition is not known.
- 2.1.14 The bridge deck has been raised and given a tarmacadam surface, with the sides protected by modern steel mesh fencing, supported by steel posts (Insert 2-7). A bench currently sits in the centre of the bridge, believed to protect a utilities manhole (see Insert 2-8). The bridge contains a number of utilities, including a water main. It is not known when these features were added to the bridge, but the modern mesh fencing would appear to post-date the tubular steel railings atop the parapets.



Insert 2-7 Bridge deck and parapet, viewed from the south-eastern end of the bridge.



Insert 2-8 Bench located approximately above central pier. Note the manhole beneath for accessing the buried services within the bridge.

- 2.1.15 Due to the structure's position within its surrounding landscape, the setting of Wheatley's Overbridge (MVL3/103) is somewhat localised; the bridge is largely secluded with very limited visibility towards or across the structure. Views of the bridge are mostly obscured by mature trees along the railway corridor, though views along the railway can be experienced by those crossing it. The only fortuitous view offered towards the structure is from the next

overbridge along the line to the north-east, Bradley's No. 2 Overbridge (MVL3/105). The structure's relationship with the railway also contributes to the asset's setting, though the reduced visibility of the structure limits the degree to which this can be understood. Nevertheless, those crossing the bridge can understand the structures relationship with the railway, even if any historic legibility of its wider setting and association with the colliery has been lost.

Significance

- 2.1.16 Wheatley's Overbridge (MVL3/103) derives significance from its historic integrity and association with the railway, its engineering importance and the nature of its sympathetic alteration in a later period.
- 2.1.17 Wheatley's Overbridge (MVL3/103) was designated a Grade II listed building in March 2018. The Historic England List Entry⁶ description identifies the following elements of significance from which the structure is considered to have special interest:
- Historic interest:
 - an original 1840s overbridge constructed during the Heroic Age (1841-50) of railway building on what is now one of the main railway lines in northern England; and
 - designed by the noted railway engineer Alfred Stanistreet Jee.
 - Architectural interest:
 - a double-span segmental arch bridge; and
 - sympathetically altered in visually indistinguishable design and detailing.
- 2.1.18 The bridge's original construction in 1849 places it within the Heroic Age (1841-50) of railway development and links it to the period of 'railway mania' which marked a time of commercial confidence and expansion in the railways. Its association with the heightened phase of railway construction and its relation to historic railway companies from that time (Huddersfield and Manchester Railway and LNWR) and notable railway engineer A. S. Jee, who also designed similar structures along the route (see 2.1.22 below), give the structure historical value from which it derives significance.
- 2.1.19 The bridge derives significance from its aesthetic value in relation to its sympathetic design alterations during the 1881-83 widening phase. The resulting double-span segmental arch design possesses architectural interest as this later alteration shows a great degree of care and effort in duplicating the original span in a manner similar to the original bridge's design and detailing. Enhanced by the limited further alteration to the structure since the widening, the sensitive design of the widening is also testament to the quality of design and engineering of the LNWR during the later 19th century, as well as preserving and responding to the language of A. S. Jee's original design.
- 2.1.20 The structure also possesses some evidential value, particularly considering the limited alterations which it has undergone since its widening. The structure evidences 19th century construction techniques and sourcing of materials both in the original 1840's span and the later 1880's addition during the widening phase. The bridge also evidences the historic industrial activity in the area as it was originally constructed to help provide access down to the colliery site by the canal, which has since been removed. In both cases, there is the potential for the structure to reveal more about these elements, due to the historic integrity of its fabric and lack of alteration.
- 2.1.21 Wheatley's Overbridge (MVL3/103) does not derive particular significance from its setting.

⁶ <https://historicengland.org.uk/listing/the-list/list-entry/1450537>

The structure is located in a relatively secluded position, with very limited visibility from public roads or footpaths. Similarly, though it has a relationship with the railway, the legibility of this can currently only be appreciated by those actually using the structure, with historic legibility of its association with the adjacent colliery and wider industrial landscape lost. Setting therefore makes little contribution to the overbridge's overall significance.

Group value

- 2.1.22 Wheatley's Overbridge (MVL3/103) is one of a number of mainly masonry structures designed by A. S. Jee for the Huddersfield and Manchester Railway (1845-49). Although these structures were appreciated for their quality of design, they were considered typical and conventional structures of the era⁷. Other Jee bridges on the line include:
- Heyrod Hall Overbridge (MVL3/7) (Grade II Listed, NHLE 1449242);
 - Heyrod Footbridge (MVL3/8) (Grade II Listed, NHLE 1452382);
 - Heyrod Overbridge (MVL3/9) (Grade II Listed, NHLE 1449241);
 - Manchester Road (MVL3/10) (Grade II Listed, NHLE 1452392);
 - Scout Hall Tunnel (MVL3/11) (south end) (Grade II Listed, NHLE 1452399);
 - Mill Lane Underbridge (MVL3/15);
 - Roughtown Road Overbridge (MVL3/17) (Grade II Listed, NHLE 1452405);
 - Wrights Mill Overbridge (MVL3/20) (Grade II Listed, NHLE 1452406);
 - Wrights Overbridge (MVL3/23) (Grade II Listed, NHLE 1452409);
 - Oaklands Road (Royal George) Underbridge (MVL3/25) (Grade II Listed, NHLE 1451848);
 - Railway accommodation underbridge footway (MVL3/26) (Grade II Listed, NHLE 1451852);
 - Oldham Road Overbridge (MVL3/28) (Grade II Listed, NHLE 1451853);
 - Wickens Underbridge (MVL3/29) (Grade II Listed, NHLE 1451854);
 - Uppermill Viaduct (MVL3/31) (Grade II Listed, NHLE 1068120);
 - Slaithwaite Viaduct (MVL3/61) (Grade II Listed, NHLE 1224049);
 - Golcar Viaduct (MVL3/70) (Grade II Listed, NHLE 1276344);
 - Milne Viaduct (Longwood Viaduct) (MVL3/76) (Grade II Listed, NHLE 1220121);
 - Church Street (MVL3/82) (Grade II Listed, NHLE 1452083);
 - Huddersfield Viaduct (MVL3/92) (Grade II Listed, NHLE 223531);
 - Hill House Lane Underbridge (Willow Lane East) (MVL3/94) (Grade II Listed, NHLE 1432641);
 - B6118 Bridge Road Overbridge (MVL3/107) (Grade II listed, NHLE 1450265); and
 - Huddersfield Broad Canal Underbridge (MVL3/108).
- 2.1.23 Although Wheatley's Overbridge (MVL3/103) derives some significance from group value with all the above structures, the most notable comparator examples that are similar in form to Wheatley's Overbridge (MVL3/103) and share a common design language with the bridge are MVL3/7 Heyrod Hall Overbridge (Grade II Listed, NHLE 1449242), Heyrod Overbridge (MVL3/9) (Grade II Listed, NHLE 1449241), Roughtown Road Overbridge (MVL3/17) (Grade II Listed, NHLE 1452405), Wrights Mill Overbridge (MVL3/20) (Grade II Listed, NHLE 1452406), MVL3/23 Wrights Overbridge (Grade II Listed, NHLE 1452409) and particularly Colne Bridge Overbridge (MVL3/107) (Grade II listed, NHLE 1450265) which was also

⁷ 2017, ABA, TransPennine Route Statement of History and Significance: West of Leeds January 2017 Draft, 27.

sympathetically widened in the 1880s.

- 2.1.24 The group value of Wheatley's Overbridge (MVL3/103) makes some contribution to its overall significance, as it comprises one element of the wider surviving group of structures associated with A. S. Jee on the Transpennine Route; and in particular shares group value with those bridges that share commonly styled construction as outlined above. Similarly, the other bridges designed by Jee also derive part of their value from their group relationship with Wheatley's Overbridge (MVL3/103).

2.2 Other heritage assets

Listed Buildings

- 2.2.1 There are no other designated heritage assets located in the immediate vicinity of Wheatley's Overbridge (MVL3/103).
- 2.2.2 The closest other Listed Building is the Grade II Listed Johnsons Lock (NHLE 1134347), located approximately 200m south of the structure on the Huddersfield Broad Canal (see Location Plan in Appendix A). There are no inter-relationships between the listed canal lock and Wheatley's Overbridge (MVL3/103), including no inter-visibility. Neither Listed structure contributes to the other's significance.

Non-designated heritage assets

- 2.2.3 The ES (Chapter 6 of Volumes 2i and 2ii) produced for the Scheme, to be submitted as part of the TWAO submission, has identified three non-designated heritage assets located in proximity to Wheatley's Overbridge (MVL3/103). They comprise sites of a coal staith, a coke kiln and Colne Bridge Colliery, located in a cluster approximately 50m to 100m east of the bridge (see Location Plan in Appendix A).
- 2.2.4 The cluster of sites are associated with the 19th century industrial activity in the area and formed part of the colliery complex to which Wheatley's Overbridge (MVL3/103) was built to provide access. The sites are no longer extant and are likely to have been disturbed by modern development in the area, particularly the sites of the coke kiln and Colne Bridge Colliery. There are no current direct relationships between the non-designated assets and Wheatley's Overbridge (MVL3/103), and their historic association is not understood or appreciated within the current landscape. Although the non-designated assets make some contribution to the significance of Wheatley's Overbridge (MVL3/103) in helping understand the purpose and origins of the bridge and its association with the wider industrial landscape of the area, the removal and disturbance of the sites and the loss of the direct access that the bridge provided to the sites have greatly impacted the degree in which they derive significance from one another.

3. PROPOSALS

3.1 Background to proposals

- 3.1.1 To achieve the TRU Programme objectives of improving the reliability and resilience of the railway, several improvements need to be delivered in this location:
- Increase from 2 to 4 tracks;
 - Introduction of OLE within safety clearance standards;
 - Re-transfer of Yorkshire Water services across the railway line (3 pipes: clean water, raw water and rising main);
 - Retention of public right of way and cycle way over the railway in a manner that meets public safety standards.
- 3.1.2 In order to meet the above requirements and ensure the viability of the Scheme and the wider TRU Programme, this will result in the proposed new track alignments clashing with the northeast abutment and intermediate pier of Wheatley's Overbridge (MVL3/103). Additionally, the bridge's existing arches have inadequate headroom for the proposed OLE.
- 3.1.3 Several variations on track arrangement were investigated to minimise the impact on the Grade II Listed structure, however these demonstrated that in order to achieve the Scheme requirements it is necessary to demolish and replace Wheatley's Overbridge (MVL3/103) to provide the adequate required horizontal and vertical clearance.

3.2 Design development and justification

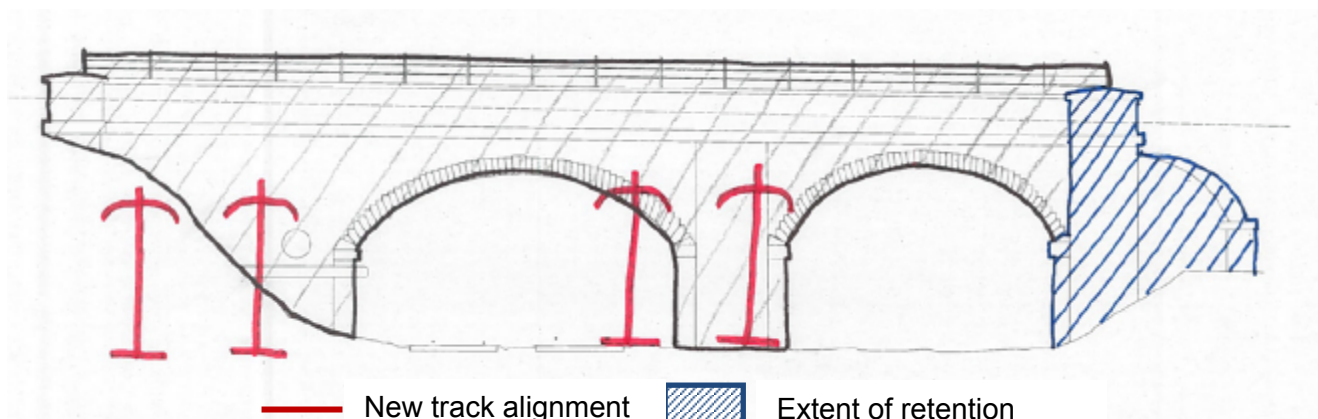
- 3.2.1 Design development for Wheatley's Overbridge (MVL3/103) has taken into consideration a number of factors including the significance of the Listed structure, operational requirements, utilities and services, and constructability. The design development process has also involved engagement with a number of different stakeholders, including Historic England and Kirklees Council (as detailed above in Section 1.5).
- 3.2.2 The design development process considered alternative approaches, including reverse engineering exercises, to attempt to avoid or reduce the impact to the Grade II Listed structure, which included aiming to retain as much of the existing fabric of the structure as possible. The design approach aimed to avoid permanently diverting the cycleway and maintaining the existing utilities within the structure.
- 3.2.3 The first stage of the design development process aimed to address the constraints posed by the location of Wheatley's Overbridge (MVL3/103), whilst also retaining the Grade II Listed structure. The location of the structure within the constrained railway corridor meant a number of issues had to be addressed.
- 3.2.4 Several options were considered to try to retain the structure. These comprised:
- Adjusting the horizontal rail alignment to attempt to fit the existing lines and new fast lines through the arches of the existing bridge;
 - Adjusting the vertical rail alignment through track lowering to provide adequate clearance for the required OLE through the arch of the structure; and
 - Bridge jacking to increase the height of the arches over the lines to provide sufficient clearances.
- 3.2.5 It would be necessary to adjust the horizontal alignment of both the proposed slow and fast lines underneath the structure in order to fit them through the existing arches. Reverse engineering demonstrated that, if this horizontal alignment adjustment was made to fit

through the existing structure, there would be significant land required from commercial premises on either side of the railway cutting to the south-west of the structure. This would potentially include the requirement to remove existing commercial buildings. Moreover, the alignment would have to tie in with the structures up and down the line from the bridge, notably A62 Leeds Road Overbridge (MVL3/102) and Bradley's No.2 (BBW/1) Overbridge (MVL3/105), as well as Bradley Junction, which would result in trains having to slow down through this section of track, thereby being detrimental to the TRU Programme objectives of achieving 100mph on this part of the route.

- 3.2.6 To achieve the required clearances for the OLE underneath the structure, it would be necessary to adjust the vertical alignment of the railway through track lowering. This would be problematic at the location of Wheatley's Overbridge (MVL3/103), due to rock preventing the increase in depth of the railway cutting. Even if this could be engineered to lower the track, the alignment would need to tie back in to the existing track level for other structures within proximity along the line, notably the crossing of the Huddersfield Broad Canal over underbridges MVL3/108 and MVL3/108S, approximately 800m north-east. Huddersfield Broad Canal (MVL3/108S) has limited headroom over the canal so would not be possible to lower the fast lines over the canal to benefit the rail alignment under Wheatley's Overbridge (MVL3/103). The differential in track level would result in poor passenger comfort.
- 3.2.7 Bridge jacking would involve the bridge being increased in height through raising the structure from the bottom of the piers. There are no previous examples of multi-span arches being jacked, and only one example of a single-span masonry arch being jacked⁸. Not only does this mean the approach is untested in terms of constructability, but also the long-term viability of the approach in terms of structural condition is unknown. Furthermore, utilities within the bridge would require temporary diversion to undertake the jacking works, and considerable alteration to tie back into their alignment once the structure had been altered.
- 3.2.8 While each of the possible approaches would result in increased chances of retaining the structure, they each pose their own considerable problems. In addition, not one of the approaches considered would address all the constraints on its own; for example, any solution to address the vertical clearance issues of OLE, such as track lowering or bridge jacking, would not address the horizontal alignment issues, and therefore slewing the track would also be required, and vice versa. Consequently, pursuing any combination of the approaches to retain the bridge was not feasible. As noted above in paragraph **1.5.7**, this design development was presented to and discussed with Historic England and Kirklees Council in December 2019, and it was agreed in principle that no option to retain the entirety of the structure was practicable.
- 3.2.9 The second stage of the design development process considered what extent of the historic fabric of Wheatley's Overbridge (MVL3/103) could be retained. Based on the outcome of the first stage, it was considered necessary for an amount of the Listed bridge to be removed and reconstructed. An exercise was carried out to consider what amount of original fabric could be retained within the replacement span, based on the required track alignment and clearances required for the OLE. Due to the clashes with the north-eastern abutment and central pier of the bridge, both arches of the existing bridge would need to be removed, and the height of the structure would also need to increase.
- 3.2.10 It was determined that the maximum portion of the bridge which could be saved while achieving TRU Programme aspirations in providing an alignment that delivers the necessary track speed is the south-eastern abutment; the extent of fabric which could be retained is shown in Insert 3-1 below. This would not be sufficient in retaining the legibility of the

⁸ This was undertaken in 2014 on the East West Rail phase 2 route at Moco Farm occupation bridge that dated to 1850: <https://www.railengineer.co.uk/planning-for-a-worlds-first-elevarch-masonry-arch-jacking-trial/>

structure and the ability to understand and appreciate its significance. As noted above in paragraph 1.5.71.5.7, the outcome of this exercise was presented to and discussed with Historic England and Kirklees Council in December 2019, and it was agreed in principle that retaining this extent of historic fabric would not retain any of the historic structure's significance.



Insert 3-1 Sketch showing the south-western elevation of the structure, demonstrating the alignment clash with the structure, and the practicable extent of the existing bridge that could be retained.

- 3.2.11 Given the Scheme involves upgrading the railway and therefore must comply with the current rigorous design and safety standards adopted by Network Rail, it was recognised that the Scheme's compliance requirements combined with the structure's constraints and limitations resulted in exceptional circumstances. Consequently, the proposal to demolish and replace MVL 3/103 Wheatley's Overbridge was deemed necessary to best respond to these constraints and requirements. As identified above in paragraph 1.5.7, Historic England and Kirklees Council agreed in principle to the demolition of the Grade II Listed bridge.
- 3.2.12 Three options were further considered in the design development process for the location of the new replacement bridge. The options considered were:
- Option 1 - On-line construction;
 - Option 2 - Slight offline construction; and
 - Option 3 - Offline construction (approximately 70m south-west of the existing bridge).
- 3.2.13 Option 1 comprised the demolition of the existing bridge and building the replacement bridge on the same alignment as the existing. This option would require two diversions of the existing utilities and an approximately 2.6km (1.6 mile) detour of the cycleway during the construction phase. While this provided benefits of staying on the existing alignment, each diversion would cost approximately £500,000, as well as providing considerable disruption to both utilities and the cycleway users. In addition, this option would require the temporary support of fragile services such as a cast iron pipe or other services with a large diameter, during the construction phase, which was not considered feasible. Therefore, this option was discounted.
- 3.2.14 Option 2 involved constructing the new bridge with an alignment directly adjacent to the south-west of the existing structure. Upon completion of the new bridge, the existing bridge would be demolished. This option could allow the cycle route to remain open for much of the works and would require only a single diversion of the utilities. This was agreed as the most favourable option as it posed relatively low disruption to the utilities and cycleway.
- 3.2.15 Option 3 consisted of constructing the new bridge approximately 70m to the south-west of

the existing structure using the existing disused bridge abutment (MVL3/106) from the former Midland Railway branch line as part of the new structure (see 2.1.10). Upon completion of the new bridge, the existing bridge would be demolished. This option could allow the cycle route to remain open for much of the works, however this would require a significant diversion of both the existing utilities and cycleway route, as well as potentially the requirement to purchase land to reconnect these elements on the north-west side of the railway. The structure required would also have a significantly increased span length compared to the replacement structures in Options 1 or 2. Additionally, although it aimed to use an existing abutment, the condition of this historic abutment is unknown and may not be of sufficient structural integrity to enable its use. This option was viewed less favourably due to the required land take; larger diversion to the utilities; structural and constructability issues posed by the realignment and was consequently discounted.

3.2.16 Option 2 was chosen for the replacement structure.

3.3 Description of proposals

3.3.1 The proposed works relating to the construction of the new replacement overbridge (as shown in Insert 3-2) and demolition of the Grade II Listed bridge, will comprise:

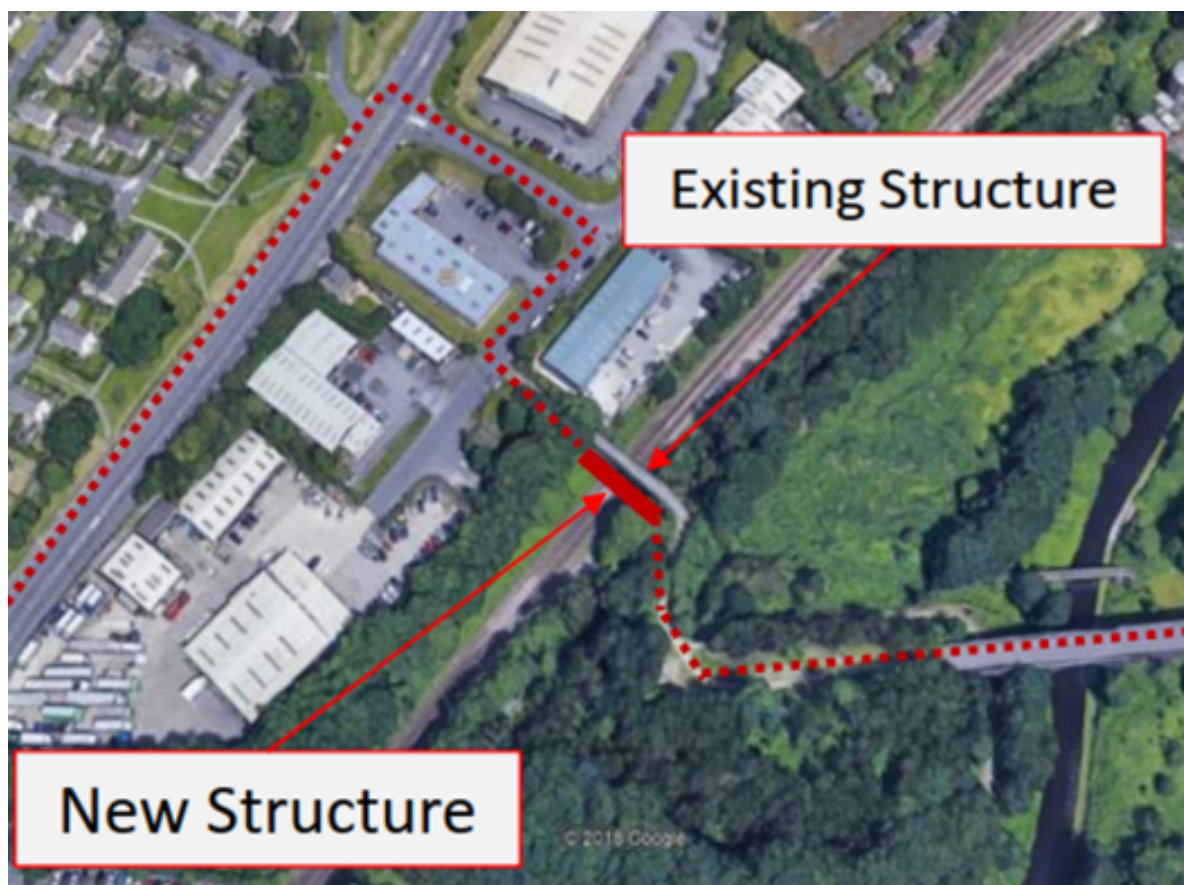
- Construction of a single span replacement overbridge of approximately 23m length, with 1.8m high parapets, directly to the south-west of the existing Listed bridge. The bridge deck would be of Glass Re-inforced Plastic (GRP) or steel plates and the main girders of weathering steel beams, with outward leaning webs to improve the aesthetics of the parapets;
- Cladding the reinforced concrete approach walls and abutments of the new bridge in stone where appropriate and practicable, as a reflection of the lost historic structure;
- Supporting existing utilities below the deck of the new bridge in conduits;
- Diversion of the utilities into those constructed within the new bridge structure;
- Realignment of the approach of the cycle path on either side of the structures;
- Incorporation of heritage interpretation (see paragraph 4.2.11) into the design of the new replacement bridge (final design of interpretive elements to be agreed with stakeholders as outlined in Section 1.5); and
- Demolition of the existing Wheatley's Overbridge (MVL3/103) structure. This will involve approximately 1300m³ of material that will be crushed for reuse and would take place after the completion of the new replacement bridge.

3.3.2 The new bridge's design philosophy took into consideration several sympathetic design solutions that aimed to reflect the historic bridge's original design and character. This included the careful choice of materials and finishes such as weathering steel in the replacement bridge's design to portray and enhance the area's historic industrial character, the cladding of the new bridge's approach walls and abutments with stonework that is similar to the historic fabric to reflect the overbridge's original design and aesthetic and finally the simplistic design style to clearly delineate that this is a new structure, in the same location. It was agreed that heritage interpretation would be incorporated into the new design to illustrate and celebrate any historic connections with the original bridge. Such measures would provide opportunity for the retention of understanding and legibility of the history of the Grade II Listed bridge, including its use and historical associations, after the structure is lost.

3.3.3 This option would also balance the costs and impacts from the temporary and permanent diversions of the utilities and of the alignment of the cycleway itself. The demolition of Wheatley's Overbridge (MVL3/103) would take place after the completion of the new replacement bridge. This would allow the highway and utilities to be kept in operation

throughout much of the works, with only relatively minor interruptions during the diversion of the services. This would minimise disruption to cyclists and to the existing utilities. The new bridge would be partially encroaching on Yorkshire Water land located next to the bridge where a pumping station is currently installed.

- 3.3.4 The proposed demolition and replacement of the Wheatley's Overbridge (MVL3/103), which would be done in a sympathetic manner as outlined above, was deemed the only practical way to deliver the Scheme's operational requirements, whilst minimising, where possible, impacts on the heritage significance of the structure.



Insert 3-2 New replacement structure in relation to existing structure, with the cycle path route shown as dotted line



Insert 3-3 Visualisation of new replacement proposal, view looking north towards Leeds

3.3.5 The proposed works to Wheatley's Overbridge (MVL3/103) are shown in the following drawings which accompany this application:

- Location plan (1:1250);
- Existing and Proposed Plan (151667-TSA-32-MVL3-DRG-T-LP-163300); and
- (1) Existing and Proposed Elevation (2) Existing and Proposed Sections (151667-TSA-32-MVL3-DRG-T-LP-163301)

4. IMPACT OF PROPOSALS

4.1 Impact on heritage assets

Impact on Wheatley's Overbridge (MVL3/103)

- 4.1.1 As identified above, in order to construct the Scheme, the proposed works will require the demolition and replacement of the Grade II Listed Wheatley's Overbridge (MVL3/103) (NHLE 1450537). This will result in total loss of the Grade II Listed structure, which should be exceptional⁹.
- 4.1.2 The understanding and contributions to significance of the structure (see 2.1.8) through historic, evidential and aesthetic values will be eradicated through its complete removal.
- 4.1.3 The total loss of this asset will mean the removal of an historic bridge that is part of the physical infrastructure associated with the Heroic Age (1841-50) of railway construction. It is not only a loss in its own right, but also detrimental to the historic character and group value that this structure contributes as part of the Transpennine railway line.
- 4.1.4 The proposed demolition of the structure in combination with that of B6118 Bridge Road Overbridge (MVL3/107) would have an impact on the group value of the bridges designed by A. S. Jee on the Transpennine Route. The loss of the bridge would remove one element of this group of 22 bridges designed by A.S. Jee (see paragraph 2.1.22) and one of six bridges with which it shares a common design language (see paragraph 2.1.23). The other bridges designed by Jee derive part of their value from their group relationship. The significance of each of the other bridges will therefore be slightly diminished by the removal of one of their number. The group would however, substantially survive and the impacts to other bridges would amount to considerably less than substantial harm.
- 4.1.5 The removal of Wheatley's Overbridge (MVL3/103) and loss of its contribution to the significance of the Transpennine railway, would be considered as substantial harm in line with National Planning Policy within the NPPF and Local Planning Policy LP35 within the Kirklees Local Plan.

Impact on other heritage assets

- 4.1.6 The proposals would have no direct impact on any other nearby designated or non-designated heritage assets. Any temporary impacts arising from the construction of the Scheme have been assessed in the ES (Chapter 6 of Volumes 2i and 2ii) for the Scheme, to be submitted as part of the TWAO submission, and will be appropriately mitigated where possible.
- 4.1.7 Although an inter-relationship and historic association was present between Wheatley's Overbridge (MVL3/103) and the cluster of non-designated sites related to the colliery complex it provided access to, the removal and disturbance of the colliery sites and the loss of the direct access that the bridge originally provided has already impacted the relationship between the non-designated sites and Wheatley's Overbridge (MVL3/103), and the proposed demolition and replacement of the bridge will not further impact any contribution either of them makes to the other's significance.
- 4.1.8 As such, the proposals satisfy the National Planning Policy within the NPPF and the Local Planning Policy LP35 within the Kirklees Local Plan in relation to impacts on other heritage assets.

⁹ NPPF, 2019, paragraph 194 a)

4.2 Mitigation and compensation

- 4.2.1 Mitigation has been used in three separate ways: embedded mitigation; additional mitigation measures and compensation. These are briefly described below and have their basis in the hierarchy of mitigation as detailed in LA 104 Environmental Assessment and Monitoring¹⁰.
- 4.2.2 Embedded mitigation occurs within the design stage and is intended to include elements within the design that avoid or substantially reduce negative change to the significance of a historic asset. It can also include elements where loss of historic significance is compensated through high quality new design and use of materials. There may also be changes that enhance or improve the historic asset. Embedded mitigation is discussed as part of the design development (see above, Section 3.2).
- 4.2.3 Additional mitigation measures are applied post-design stage and are intended to include processes and activities that will reduce the level of negative change to the significance of an historic asset.
- 4.2.4 Compensation measures are applied post-design stage and recognise that the impacts cannot be removed or reduced. These measures are intended as a means of recording the negative change to the significance of an historic asset; enabling future dissemination of information about this change.

Mitigation

- 4.2.5 Design proposals were developed through an iterative process which has taken into consideration potential alterations to the Scheme design and reverse engineering to attempt to avoid or reduce the impact on Wheatley's Overbridge (MVL3/103). Additional information with respect to these elements of design development is included above in Section 3.2.
- 4.2.6 Regular consultation with historic environment stakeholders and the design team were held throughout the new bridge's design development process (see Section 1.5). Historic environment stakeholders, including Historic England and Kirklees Council, have been involved in the development of the design mitigation described below.
- 4.2.7 The design development process has resulted in mitigation being embedded within the design of the replacement bridge for Wheatley's Overbridge (MVL3/103). The following design considerations have been taken into account in response to the loss of the listed structure:
- Use of materials and finishes for the new bridge span and deck to reflect the area's historic industrial character such as Weathering Steel. Final materials and finishes are under discussions with statutory consultees; and
 - New abutments to be clad with stonework that is similar to the historic fabric to reflect original design. Salvaged stone from the demolished structure will also be considered for reuse if feasible.

Recommended compensation

- 4.2.8 Requirements to undertake compensation in relation to historic buildings, including Listed Buildings, where the proposals of the Scheme will result in physical impacts to them, have been outlined in the ES (Chapter 6 of Volumes 2i and 2ii) for the Scheme, to be submitted as part of the TWAO submission. These compensation measures (given below) will be

¹⁰ Design Manual for Roads and Bridges, LA 104, Sustainability & Environmental Appraisal, Environmental assessment and monitoring. Revision 1 (August 2020).

secured as conditions of the Listed Building Consent (LBC) and aim to offset some of the harm which will occur to the assets' significance as a result of the Scheme.

- 4.2.9 A CIMP will be produced which will further define mitigation and compensation measures for historic buildings. Those measures discussed below will be detailed within the CIMP. The CIMP will be secured via a condition of the LBC and its contents will be agreed with the Local Authority in consultation with the appropriate stakeholders (Historic England) prior to construction works.
- 4.2.10 **Historic building recording:** recording of Wheatley's Overbridge (MVL3/103) will be required prior to, or during, the construction of the Scheme, as agreed with the appropriate historic environment stakeholders via the CIMP. This would help to compensate the harm to significance resulting from the demolition by providing opportunity to document the structure which will be lost as a result of the demolition. The historic building recording would be undertaken to Level 3 in accordance with Historic England guidance¹¹, and would include:
- Drawings;
 - Photography; and
 - A written account.
- 4.2.11 **Themed interpretation:** As compensation for the loss Wheatley's Overbridge (MVL3/103), it will be a requirement to incorporate heritage interpretation in the design of the new replacement bridge. There will be further engagement with stakeholders with respect to the final design and interpretive elements to be incorporated; this will be secured as a condition of the Listed Building Consent. Such measures would provide opportunity for the retention of understanding and legibility of the history of the Grade II Listed bridge, including its use and historical associations, after the structure is lost.
- 4.2.12 **Material reuse:** It is recommended that the possibility of sustainable recovery and reuse of masonry from the removal of the Grade II Listed Wheatley's Overbridge (MVL3/103) is explored as it can partly compensate adverse impacts arising from the work. The opportunity for this to be explored will be detailed within the CIMP.

4.3 Public benefit

- 4.3.1 In order to achieve the public benefits of the Huddersfield to Westtown (Dewsbury) Scheme, it will be necessary for the demolition of Wheatley's Overbridge (MVL3/103). This will give rise to substantial harm to the significance of the bridge and justification for its removal is based on the benefits that would be realised from economic, social and environmental objectives of the TRU Programme.
- 4.3.2 The Scheme, as part of the wider TRU Programme, would directly and indirectly play a role in improving connectivity through journey time, capacity and reliability improvements, alongside particular improvements for Huddersfield Station enhancing some of Britain's busiest rail track.
- 4.3.3 The Scheme is vital in supporting the North of England's long-term, low-carbon economic growth, and better-connecting people to jobs, services, education and leisure. The Kirklees Local Plan (paragraph 10.2) recognises the critical connection between effective transport systems and local business productivity and district prosperity. The construction of a new overbridge to replace Wheatley's Overbridge (MVL3/103) is essential to allow for four-tracking and to make provision for OLE, and without these changes the Scheme would be

¹¹ 2016, Historic England, Understanding Historic Buildings, <https://historicengland.org.uk/images-books/publications/understanding-historic-buildings/heag099-understanding-historic-buildings/>

unable to go ahead. Chapter 21 (Socio-economic) of the ES (Volume 2i Scheme-wide Assessment) has been referred to in identifying these benefits.

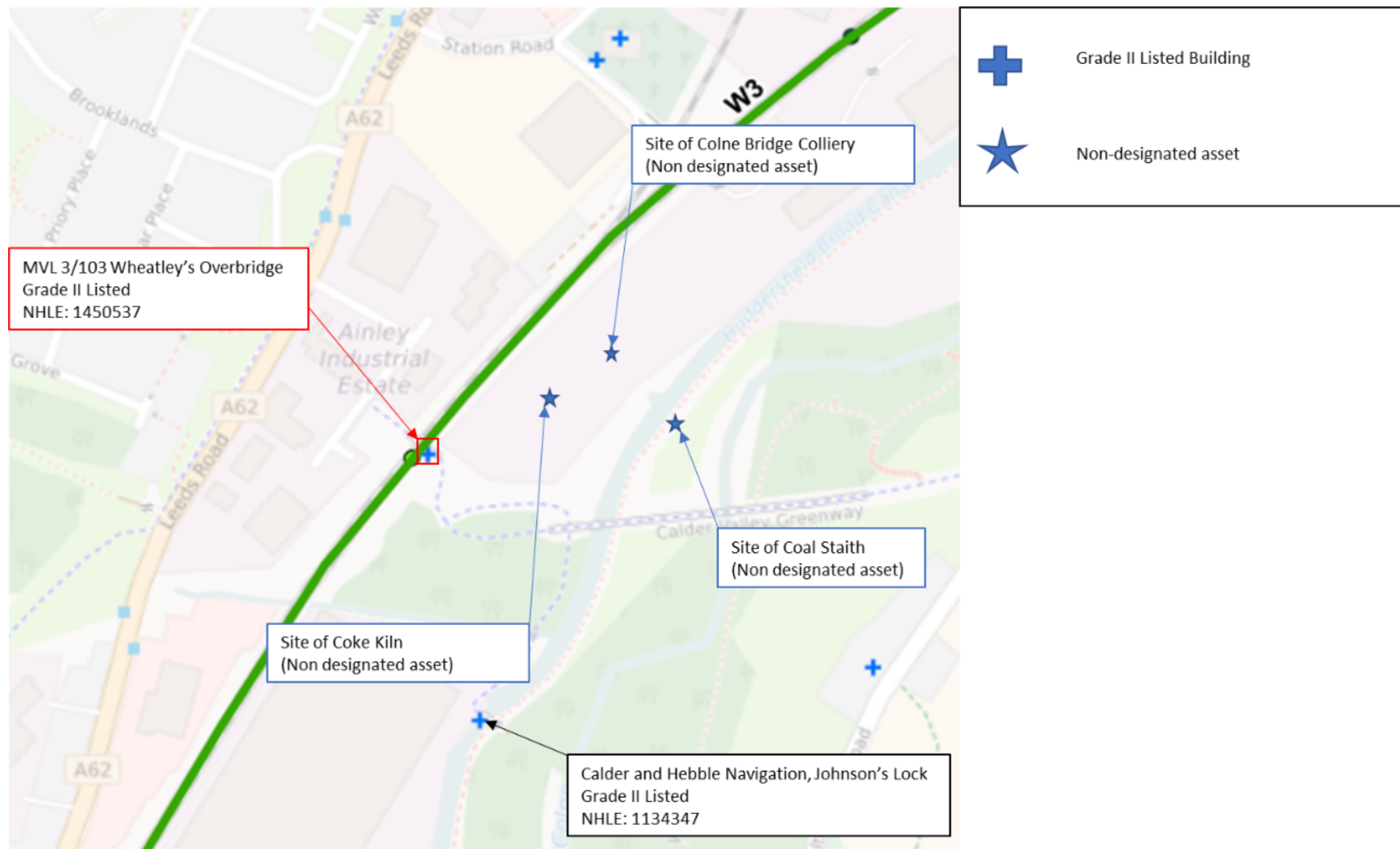
- 4.3.4 There are economic and social benefits to be had from the improved Transpennine Route proposals. These include reduction in journey times along this part of the Scheme with the aim of achieving 43-44 minutes between Manchester Victoria and Leeds Central. This will be partially facilitated by enabling line speeds of between 70 – 100 mph along the Scheme and as well as through other projects on the route. The increase in capacity through more train services and longer trains will reduce congestion, increase passenger comfort and improve journey quality. Future passenger modelling has indicated that the numbers of people using the Transpennine Route will increase from 5.33 million to 8.22 million in 2042/43. This would be partially achieved through the creation or enhancement of four tracking, allowing for express trains to by-pass slower trains and freight services. The increased movement of people and goods along this key part of the railway network that connects major cities, towns and transport hubs supports a more economic and socially viable transport solution. The Scheme forms part of the West Yorkshire Transport Strategy for harnessing economic prosperity through a better-connected transport network.
- 4.3.5 As part of the Scheme, there are environmental and sustainable benefits that arise from the improvements to public transport services and the introduction of more environmentally viable energy solutions. The electrification of the line through this part of the Scheme is an investment in 'greener' energy technology meeting Network Rail's Decarbonisation Strategy and bolstering national targets for reducing harmful emissions that cause climate change, which are set out in Government legislation for achieving net zero carbon by 2050.
- 4.3.6 There are particular challenges with overbridges in that, by their very nature, they are dangerous as they cross over live operational railway. This is particularly pertinent for historic railway bridges as they were built to designs that had very different safety parameters to today's standards. In upgrading bridges to meet appropriate specifications for health and safety standards, it ensures that the public remain safe, but also retain right of access across the railway. The new bridge will meet the most rigorous codes for public safety, whilst ensuring continued use of the cycleway (Sustrans NCN Route 66) and public right of way.
- 4.3.7 There are three water pipes that run across the railway in this location, which are embedded in the current historic bridge structure. The improved and new service pipes for these utilities as part of the new structure will ensure the continued water provision to residents in this location.

5. CONCLUSION

- 5.1.1 The proposed Scheme requires the demolition of Wheatley's Overbridge (MVL3/103) which would mean substantial harm to the significance of the structure, as defined in NPPF.
- 5.1.2 The significance of Wheatley's Overbridge (MVL3/103) lies primarily in its historic integrity and association with the railway, its engineering importance and the nature of its 1880s sympathetic alteration. The bridge, built in 1849, derives historic significance from its association with the Heroic Age (1841-50) of railway development and the period of 'railway mania', as well as its association with historic railway companies and A.S.Jee, the line's chief engineer. The bridge also derives some significance from its evidential value which lies in its potential to reveal more about 19th century construction techniques as well as the area's industrial history, due to the historic integrity of its fabric and lack of alteration. Its aesthetic value lies in its sympathetic design alterations during the 1881-83 widening phase which shows a great degree of care and effort in duplicating the original structure. While Wheatley's Overbridge (MVL3/103) does not derive particular significance from its setting, it does possess group value as one of a number of A.S. Jee structures on the Transpennine Route which share a common design language.
- 5.1.3 A number of design options were pursued to achieve the required horizontal and vertical clearance for the additional tracks and OLE. The additional tracks and OLE are a fundamental part of the Scheme to deliver a faster service (reduced journey time); with capacity to utilise more trains on the network, and to make provision for electrification and the operation of a 'greener' transport solution.
- 5.1.4 The first range of options were focused on the retention of the Bridge and employing engineering solutions to facilitate the Scheme within the current physical confines of the structure. These options included:
- Adjusting the horizontal rail alignment to attempt to fit the existing lines and new fast lines through the arches of the existing bridge;
 - Adjusting the vertical rail alignment through track lowering to provide adequate clearance for the required OLE through the arch of the structure;
 - Bridge jacking to increase the height of the arches over the lines to provide sufficient clearances;
- 5.1.5 However, as discussed in paragraph **3.2.83** these options did not fit with safety regulations, operational drivers and buildability. In these options, design compromises to retain the bridge also resulted in engineering challenges elsewhere on the route, which were insurmountable.
- 5.1.6 Options were then pursued which accepted the loss of the historic bridge and made attempts to achieve an optimum new bridge design solution that retained the relationship with the railway and compensated for the removal of the old structure. This was done through material choices (use of weathering steel to reflect the industrial connections and reason for construction of the historic bridge); simplistic design style to clearly delineate that this is a new structure, in this same location; and the agreement to develop an interpretive element within the new build to tell the story of the historic bridge.
- 5.1.7 The loss of Wheatley's Overbridge (MVL3/103), which is a Grade II Listed Building, should be considered exceptional. This will mean the loss of an irreplaceable piece of historic railway infrastructure, dating to the Heroic Age (1841-50) of railway building and the expansion phase in 1880s. It is also a loss to the collection of AS Jee bridges that are located along this section of the Transpennine route. Although it is recognised that the majority of A.S.Jee structures are retained in their original form and that Wheatley's Overbridge (MVL3/103) is not unique or rare.

- 5.1.8 The design process has been undertaken in a strongly collaborative manner and has sought historic environment professional support from the outset. The desire to maximise heritage benefits and limit harm was the primary position. Every effort was made to retain this historic structure as part of the Transpennine upgrade. However, this was unachievable with the operational parameters set. Regular consultation with historic environment stakeholders and the design team were held throughout the new bridge's design development process and several mitigation measures have been considered to attempt to avoid or reduce the impact on Wheatley's Overbridge (MVL3/103). Historic England and Kirklees Council have accepted that the approach of demolishing the structure is necessary to deliver the proposed Scheme, and that alternative approaches are not viable. The design development process, including engagement with historic environment stakeholders, resulted in mitigation being embedded within the design of the replacement bridge for Wheatley's Overbridge (MVL3/103) (see Section 4.2), as well as compensation measures being agreed, to be secured as conditions of the LBC (see Section 4.2).
- 5.1.9 With the removal of Wheatley's Overbridge (MVL3/103), the Scheme can achieve key improvement objectives as outlined in 4.3.1. It would also deliver specific public benefits related to: improved passenger services (in journey time saving and number of trains); supporting sustainable transport development through use of OLE technology; improving public health and safety in providing safe routes across the railway and through ensuring continued use of public rights of way and cycleways on overbridges; and enabling utility services to remain functioning (incorporated into bridge structure in order to cross the railway).
- 5.1.10 Whilst the demolition of Wheatley's Overbridge (MVL3/103) is regrettable its loss is outweighed by the considerable public benefits that accrue from its removal.

APPENDIX A – LOCATION PLAN



APPENDIX B – HISTORIC ENGLAND LIST DESCRIPTION

Overview

Heritage Category: Listed Building

Grade: II

List Entry Number: 1450537

Date first listed: 23-Mar-2018

Location Description: Calder Valley Greenway, Bradley

Location

The building or site itself may lie within the boundary of more than one authority.

Location Description: Calder Valley Greenway, Bradley

District: Kirklees (Metropolitan Authority)

Parish: Non Civil Parish

National Grid Reference: SE1709919855

Summary

Railway overbridge built 1845-1849, designed by A S Jee for the Huddersfield and Manchester Railway, with an additional span of 1881-1884 for the London and North Western Railway.

Reasons for designation

Colliery Lane Bridge (Wheatleys) MVL3/103 of 1845-1849, by Alfred Stanistreet Jee for the Huddersfield & Manchester Railway, and extended 1881-1884 for the London and North Western Railway. is listed at Grade II for the following principal reasons:

Historic interest:

- * an original 1840s overbridge constructed during the heroic age of railway building on what is now one of the main railway lines in northern England;
- * designed by the noted railway engineer Alfred Stanistreet Jee.

Architectural interest:

- * a double-span segmental arch bridge;
- * sympathetically altered in visually indistinguishable design and detailing.

Group value:

* with the other listed structures designed by Jee on the former Huddersfield & Manchester Railway line.

History

In contrast to the main trunk lines of the late 1830s that were constructed by single railway companies the route from Stalybridge to Leeds had fragmented origins and was the work of three different railway companies: the Huddersfield & Manchester Railway, Leeds, Dewsbury & Manchester Railway, and the Manchester & Leeds Railway.

The Huddersfield & Manchester Railway was authorised in 1845 and followed the route of the Huddersfield Narrow Canal for much of its length, including a railway tunnel through the Pennine hills set alongside the earlier Standedge Canal Company tunnel of 1811; in 1846 the railway company also acquired the canal. Joseph Locke and Alfred Stanistreet Jee were appointed to survey and design the new line, the two engineers having already worked together on a major project linking Manchester and Sheffield. Jee became the lead engineer for the Huddersfield line, which passed through challenging terrain, assisted by resident engineers that included his brother Moreland Jee (until 1848) and Herbert F Mackworth. Construction of the line was divided into various contracts, with many contractors being only responsible for a single cutting, viaduct or tunnel portal. The largest contract for the Standedge Tunnel between Diggle and Marsden was let to a single contractor, Thomas Nicholson in 1847. The tunnel's completion in 1849 marked the opening of the line.

The Leeds end of the route, which was also authorised in 1845, was constructed by the Leeds, Dewsbury & Manchester Railway. The engineer was Thomas Grainger who had previously largely worked in Scotland, and the line was completed in 1849.

A short three-mile section of the route between Heaton Lodge Junction and Thornhill Junction near Mirfield was developed by the Manchester & Leeds Railway and was constructed between 1837 and 1840, with George Stephenson as the chief engineer. The structures on this line were designed by Thomas Gooch under the oversight of Stephenson. In 1847 the railway company changed its name to the Lancashire & Yorkshire Railway.

In 1847 the Huddersfield & Manchester Railway and the Leeds, Dewsbury & Manchester Railway were acquired by the London & North Western Railway (LNWR) so that the company could access the city of Leeds and the textile towns of West Yorkshire. This pitted them as rivals to the Lancashire & Yorkshire Railway, although at points on the route the two companies had to work together. By 1851 the London & North Western Railway had an overall mileage of railway track of 800 miles and it became the most prominent railway company in the country and the largest joint-stock concern in the world in the late C19. Although the LNWR had a general manager, Captain Mark Huish, the lines of the Stalybridge to Leeds route still managed their own affairs. LNWR later carried out expansion works, including the widening of tracks and bridges, the construction of additional tunnels, and station alterations. In 1923 the line became part of the London Midland & Scottish Railway, and subsequently part of the nationalised British Railways in 1948. The line, its structures and track are currently (2018) owned by Network Rail, and the passenger services operated by TransPennine Express and Northern Rail.

Colliery Lane Bridge is thought to have been originally built as a single-span overbridge to carry an access road from Bradley to the Colne Bridge Colliery, which was situated between the Huddersfield and Manchester Railway and Sir John Ramsden's Canal. The colliery is depicted on the first edition

1:10,560 Ordnance Survey map of 1854, at which time there were no sidings and the colliery is shown served by coal staiths for loading barges on the canal. The bridge was extended southward to a double-span by the LNWR, between 1881 and 1884, allowing it to cross four tracks. The Midland Railway opened a branch line from Mirfield to Newton Goods Depot Huddersfield in 1910, with the new line crossing the colliery site and the LNWR mainline just south of Colliery Bridge. This line was short-lived and closed in 1937, and since then Colliery Bridge and MR Huddersfield Branch remained largely disused until June 2000 when they were both combined into The Calder Valley Greenway, part of Sustrans NCN Route 66, from Manchester to Spurn Head.

Details

Railway overbridge built 1845-1849, designed by A S Jee for the Huddersfield and Manchester Railway, and extended with a second span in 1881-1884.

MATERIALS: squared coursed quarry-faced gritstone and tooled gritstone.

DESCRIPTION: a double-span, segmental arched bridge built over a cutting with the ends obscured by the adjacent embankments. The faces of the arches have tooled keyed voussoirs with projecting key stones, with tooled edges resting on slightly projecting ashlar impost bands. The voussoirs project out slightly from the surfaces of the soffits of the arches. The abutments and the spandrels are built of coursed quarry-faced gritstone. The quoins of the abutments are of quarry-faced stone with tooled edges. The central pier and the ends of the bridge are supported by canted buttresses. The stone courses in the spandrels are even in height and rise to an ashlar string course. The string course to either side of the bridge acts as a base for a parapet wall. Each parapet has ashlar coping stones and terminates in a rectangular stone pier that breaks forward from the face of the bridge. The north-western ends of the parapet walls splay out slightly, while the southern abutment has curved and canted wing walls to either side. The parapets are protected by a triple tubular steel fence with cast-iron fence posts marked - SYDNEY RAINES WAKEFIELD, supported by bolted struts that are recessed into the sides of the coping stones. The bridge deck forms part of the Sustrans National Cycle Route 66 and has been raised and given a tarmac surface, with the sides protected by modern steel mesh fencing, supported by steel posts.

This list entry was subject to a Minor Amendment on 04/12/2018

Sources

Books and journals

Wood, L V (Author), Bridges for Modellers, (1985), 66

Websites

Route-66, accessed 10 October 2017 from <https://www.sustrans.org.uk/ncn/map/route/route-66>

Other

TransPennine Route Statement of History and Significance: West of Leeds V3.1. Prepared for Network Rail, March 2017. Alan Baxter Ltd.



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