

Inland Waterways Association,
C/o 34 Old Eaton Road,
Rugeley, Staffs. WS15 2EZ
philip.sharpe@waterways.org.uk

Our Ref: IWA-HS2-PHASE2B-2018



High Speed Two (HS2) Limited
By email to: environment2b@ipsos-mori.com

21st December 2018

Dear Sirs,

HS2 PHASE 2B - WORKING DRAFT ENVIRONMENTAL STATEMENT

Please see below the response of the Inland Waterways Association.

Yours sincerely,

Philip G. Sharpe
Chairman & Planning Officer
Inland Waterways Association, Lichfield Branch

HS2 PHASE 2B - WORKING DRAFT ENVIRONMENTAL STATEMENT

Introduction

The Inland Waterways Association (IWA) was founded in 1946 and is a membership charity that works to protect and restore the country's canals and river navigations. IWA is a national organisation with a network of local branches and volunteers who work with navigation authorities, national and local government, and a wide range of voluntary, private and public sector organisations for the benefit of the waterways and their users. The Association also provides practical and technical support to waterway restoration projects, and acts as a national 'umbrella' organisation for numerous local waterway societies and trusts that promote and protect waterways in their areas.

HS2 Phase 2B affects inland waterways, both canals and river navigations, in at least 16 locations, including three canal restoration schemes.

This response identifies the adverse impacts at each interface and where changes are needed to avoid or minimise those impacts. It incorporates information from discussions with IWA Branches, individual canal trusts, and the Canal & River Trust.

General Principles

IWA's general principles for the protection of waterways impacted by HS2 are:

- Protection of Routes – No canal should be lost or blocked, whether a restoration project or a navigation in use, and where the route crosses a waterway, the waterway should be restored to a minimum of navigation standard, whether the navigation is presently extant or not.
- Navigation – There should be minimal disruption to navigation during the construction phase, and any necessary impacts should be integrated with the navigation authority's planned stoppage programmes.
- Waterway gauge - there should be no detriment to the constructed gauge of any waterway due to HS2, particularly in respect of headroom, taking account

Registered Office: Island House, Moor Road, Chesham HP5 1WA

Tel: 01494 783453 Web: www.waterways.org.uk

The Inland Waterways Association is a non-profit distributing company limited by guarantee.

Registered in England no. 612245. Registered as a charity no. 212342



of any proposed enhancements on freight waterways. Any waterway crossings or other alterations to the waterway should comply with the appropriate navigation authority's policy of headroom over water, over towpaths, and on minimum width.

- Mitigation – wherever possible mitigation should be completed in advance of construction.
- Betterment – opportunities should be sought to achieve betterment for waterways within the planning process as compensation for environmental and heritage damage caused by HS2's construction and operation.

Engagement

IWA has engaged with HS2 since 2010 on behalf of its individual and corporate members and the wider public interest in waterways. We have commented in detail on previous Phase 2 and Phase 2B consultations in 2013, 2016 and 2017. Although there has been some progress in improving the proposals at a few locations, other changes have increased the visual or noise impacts on the waterways environment and the recreational and residential users of the waterways. Crucially, the issues threatening severance or severe damage to the restoration routes of the Chesterfield Canal and the Ashby Canal have not been adequately addressed. Overall, it is very disappointing how slow and insensitive HS2 Ltd has been in recognising and responding to the problems that IWA and others have highlighted.

Noise

In particular, there has been a fundamental failure to acknowledge that waterway users are not just 'transient' but in many locations people live on boats for varying periods of time, and those places should be provided with noise mitigation to at least the same standards as would automatically apply to residential buildings at that location.

Unlike buildings, however, boats cannot easily be retrofitted with double glazing, and their mobility and the outdoor lifestyle of boaters means that they are more dependent on external controls including noise fencing on viaducts and bridges, earth bunding and screen planting.

IWA contends that wherever boats are permanently moored, or permitted to moor temporarily overnight or for a few days or months, they are likely to be occupied residentially and those locations should be protected by noise mitigation to residential standards.

Whilst the design of bridges and viaducts is important, the minor additional visual impact of noise fencing should not be used as an excuse to deny the major audible benefits that it can provide. To static boat residents or waterway users encountering HS2 at walking pace it will in the long term be the operational noise that most impacts and disrupts their lifestyle and activities.

Detailed Comments on Waterway Interfaces

WESTERN LEG

SHROPSHIRE UNION CANAL, MIDDLEWICH BRANCH (MA02)

The Middlewich Branch of the Shropshire Union Canal will be affected by the proposed Crewe North Rolling Stock Depot (RSD) and the two rail bridges over the canal between Park Farm and Yew Tree Farm. The historic environment of the canal within the rural landscape will be permanently degraded by the visual impact of these HS2 structures, and the users of the canal will be subject to construction and operational noise impacts.

Crewe North Rolling Stock Depot

The location of the RSD is shown only in outline on the Proposed Scheme and Construction Phase plans, although the track layout is shown on the Operational Noise Contour Maps. However, there are no plans or sections of the RSD buildings, which will presumably be very large to take 400m long train units and are likely to be visible over long distances in this relatively flat landscape. The building heights are not disclosed, and no visualisations are provided of their appearance from surrounding viewpoints, despite promises to the local MP to do so.

Extensive earth bunding with screen planting is shown on the east side of the HS2 main line, but only limited planting alongside the West Coast Main Line (WCML) on the west side nearest the Middlewich Branch Canal.

The plans show 'woodland habitat creation' planting in a narrow corridor extending along the offside of the Middlewich Branch Canal for over 2km between Canal Cottage near Wimboldsley and the WCML canal bridge. It is not clear if this is meant to provide visual screening of the RSD or if it is just compensatory habitat planting, although its absence between the WCML and HS2 canal crossings suggests the latter.

Such extensive woodland planting would change the whole character of a long section of the canal that currently enjoys open countryside views, to an enclosed woodland outlook on one side. Details of the RSD buildings and appropriate visualisations are needed to assess what screening benefit the proposed canalside planting may have, if any, given the long timescale for maturity of such planting. It is likely that earth bunding topped with planting located closer to the RSD, just west of the WCML, would provide better visual and noise screening for both the canal and other properties, without such wholesale changes to the historic character and environment of the canal.

It is not acceptable that there has been no consultation with Canal & River Trust (CRT) or with IWA as canal user representatives about the principle of this proposed canalside planting. There are also practical problems with the planting being shown right up to the edge of the canal which would cause increased maintenance costs to CRT. Any canalside woodland planting should be set back from the canal to minimise the increased maintenance costs from the need to regularly cut back overhanging vegetation, or from branches falling and leaves blowing into the canal necessitating more frequent dredging.

There is a further large area of 'woodland habitat creation' planting shown east of the HS2 bridges, just south of the canal opposite Yew Tree Farm, and there is a suspicion that this may be an after-use for either a large construction site or a materials dump, the details of which are not being disclosed at this stage. Extending for about 400m along the canal, this would also change the character of the canal without any clear visual or noise screening benefits.

Rail Bridges

The Proposed Scheme plan shows the two Shropshire Union Canal underbridges with their embankment toes intruding on the offside of the canal and blocking the towpath, which is obviously totally unacceptable. They should span the full width of the canal and its towpath and provide a minimum 3m air draught clearance. The design of the bridge structures is unknown but should follow the CRT design principles accepted for Phase 1. The bridges will impact on the setting of Hughes Bridge 25 which is Grade II Listed, and the location of the balancing pond shown near Park Farm should be moved to allow for screen planting between Hughes Bridge and the railway.

Construction of the two rail bridge crossings over a 2 year period will require canal closures for unknown periods affecting boaters and users of the towpath, and may need temporary canal bridges. Any disruption to canal traffic should avoid the busy March to October period, and any temporary navigation closures in the winter stoppage period should be kept to a minimum.

There are about 15 offside boat moorings at Park Farm which may be lost due to construction and degradation of their currently tranquil setting, and compensation should be provided. The popular visitor towpath moorings at Yew Tree Farm will also be badly impacted during construction and, unless noise mitigation is provided, during operation.

Noise

The Operational Noise Contour Maps show no noise fencing in the vicinity of the canal and predicted noise levels in the 'red' zone of 'significant effect'. The RSD will be a 24 hour operation and there will be late evening and early morning train movements into and out from the depot across the canal bridge outside the normal operating hours of the HS2 main line, and this will increase the noise impacts on the canal and its users.

IWA considers that all canal users should be provided with noise protection from HS2 trains at all canal interfaces. This requires acoustic fencing across the canal bridges and fencing or earth bunding to the adjacent embankments to at least the same standard as would be provided for residential properties at that location.

Other Impacts

Other visual and noise impacts on the Middlewich Branch Canal will be from the construction and presence of the large overbridges and embankments for the A530 and Clive Green Lane diversions, and the landscape mitigation planting should take account of this.

There will also potentially be light pollution along the canal from the night-time lighting of the RSD, which could affect the habitat and behaviour of bats, birds and other wildlife. Lighting should be internally directed and avoid undue light spillage in the surrounding area.

TRENT & MERSEY CANAL (MA02)

The Trent & Mersey Canal will be affected by three crossings over a 2 mile section in the River Dane valley north of Middlewich, from south of canal bridge 177 to north of the Billinge Green Flashes at Whatcroft. The impact of the 2016 Preferred Route on the canal is much greater than the original 2013 alignment which involved just one crossing of the canal. In the area of Whatcroft, the route was moved approximately 400m to the West and raised vertically by 3m, increasing the proposed track level above the canal water level at the three crossing locations.

The Trent & Mersey Canal is a linear Conservation Area throughout its 93 miles, designated for its historic and architectural significance and now used extensively for recreation. All three crossings are in scenically attractive and currently tranquil rural settings.

Construction of the proposed route will have a permanent visual and environmental impact on the Trent and Mersey Canal Conservation Area due to the height and mass of the viaduct structures and embankments and the operational noise. The proposed track level will be between 13m and 16m above the canal water level at the three crossing, and there will be a dominating view of the viaducts and embankments, rising up to 26m above adjacent land and the River Dane flood plain. It is essential to incorporate parapet or noise fence barriers at all three crossings to significantly reduce the operational noise effects of the railway.

During the construction stage all three rail crossings will require canal closures for unknown periods affecting boaters and users of the towpath, and the possible erection of temporary canal bridges. Any disruption to canal traffic should avoid the busy March to October period, and any temporary navigation closures in the winter stoppage period should be kept to a minimum.

River Dane Viaduct

The southernmost crossing of the Trent & Mersey Canal is approximately 150m east of canal bridge 177, at the northern end of the River Dane Viaduct and at a height of about 13m. The viaduct and adjacent embankment will have a major visual impact on the canal and its Conservation Area, and acoustic fencing is essential to minimise the noise impact on this currently tranquil section of the canal. The nearby canal bridge 177 is of the flat deck, iron girder construction technique adopted along this section of the canal to more easily enable it to be raised to counter subsidence than the traditional brick arched canal bridges, indicating early appreciation of the susceptibility of this area to subsidence due to natural brine solution and pumped extraction.

Puddinglake Brook Viaduct

The middle of the three Trent & Mersey Canal crossings is between canal bridge 179 at Whatcroft Lodges and the railway bridge 180A, with the canal crossed by the Puddinglake Brook Viaduct at a height of about 13m. The viaduct and adjacent embankment will have a major visual impact on the canal and its Conservation Area, and acoustic fencing is essential to minimise the noise impact on this currently tranquil section of the canal.

Billinge Green Flashes

The northernmost crossing of the canal near Whatcroft is by the Trent & Mersey Canal Underbridge at a height of about 16m. The Proposed Scheme plan shows the bridge with the toes of the two adjacent embankments intruding on both the offside of the canal and blocking the towpath, which is obviously totally unacceptable. The bridge should span the full width of the canal and its towpath. There would then not be

space for the anomalously short embankment shown between the canal and railway underbridges, and the obvious solution is to combine these as one continuous viaduct structure. The Whatcroft Embankment also crosses part of the larger of the two canal-connected flashes at Billinge Green, where a spit of land separates the canal from the flash.

The canal at Billinge Green Flash is an extremely popular mooring site for visiting boats and other canal users because of its tranquillity and the view of the large open expanse of water across the flash, which is rarely found elsewhere on the canals. The considerable alterations to this setting would permanently damage this experience and have a major environmental impact on the Trent & Mersey Canal Conservation Area corridor.

HS2 will also impact on the tranquillity of the occupiers of boats moored at Oakwood Marina, which is located within the smaller flash at Billinge Green, only 100m to the West of the proposed HS2 route (just south of Davenham Road on the plans). This became operational in 2018 and has 83 berths but is not yet shown on the plans. There are further permanent boat moorings at Park Farm Marina which is within 400m of the proposed route (just north of Little Grebe Cottage on the plans) which will also be affected by noise from both the construction and operation of HS2.

The flashes connected to the canal at Billinge Green contain the remains of historic wooden narrowboats abandoned in the 1950s which are of archaeological interest. The area of the flash to be covered by the Whatcroft Embankment should be investigated and appropriately excavated prior to major engineering works.

Noise

The Operational Noise Contour Map shows no noise fence barriers across any of the 3 Trent & Mersey Canal crossings, and predicted noise levels in the 'red' zone of 'significant impact'. It does indicate 'noise related engineering features' across the viaducts and bridge but it is not clear what this refers to or how effective it may be.

IWA considers that all canal users should be provided with noise protection from HS2 trains at all canal interfaces. This requires acoustic fencing across the canal bridges, and fencing or earth bunding to the adjacent embankments, to at least the same standard as would be provided for residential properties at that location.

Subsidence Risk

The Trent & Mersey Canal Underbridge is sited across part of Billinge Green Flash which is one of several large subsidence flashes in this area caused by salt mining, as elsewhere across the Cheshire salt field. The large imposed loads from the superimposition of embankments, the consolidation of the embankment fill, and vibrations from the pile driving for viaduct piers, could all re-activate the subsidence here and destabilise the ground. The records of mine working information are incomplete and in any case much of the subsidence is from historic 'wild brine' pumping, remote from the extraction points, unpredictable and still active.

The main reason given for realigning the preferred route in 2016 was to avoid known brining and gas storage infrastructure in the Lostock area, and minimise the risk of subsidence there due to the underlying geological conditions. However, the current route runs through an extensive area of unknown and unpredictable brine subsidence risk which is likely to prove much more problematic. The choice of this route will give rise to major ground stability risks during both construction and operation stages, will require expensive engineering to reduce those risks, and may ultimately prove impractical. This has been a problem for many centuries, well-known locally, but not apparently to HS2.

The currently proposed route poses a major threat to the stability of the Trent & Mersey Canal channel and structures, and to the construction and operation of HS2. It should not proceed further without a full geological assessment and extensive ground investigations, and the reappraisal of alternative routes between Crewe and Manchester avoiding the Cheshire saltfield.

The increased height of the current route appears to be based on the mistaken belief that avoiding cuttings through the unstable ground would limit the risk of subsidence, whereas in fact reduced ground loadings are likely to be less of a threat than increased ground loadings from the higher embankments. If this route does proceed then the vertical alignment should be reviewed to include cuttings through higher ground and to lower the embankments and viaducts, whilst maintaining necessary clearances over the canal, roads and

railway. This will both reduce the risks of ground subsidence and significantly reduce the visual impact of the line on the Trent & Mersey Canal, the landscape and nearby properties.

BRIDGEWATER CANAL (MA04)

The Bridgewater Canal is a heritage asset of national importance, being the first major canal built in England by the pioneering engineer James Brindley, which played a significant part in enabling the industrial revolution. This section of the canal was completed by 1769 and its bridges, aqueducts, warehouses and other structures remain largely as built.

HS2 crosses the Bridgewater Canal at a skew angle at Agden, directly over the boat moorings of Lymm Cruising Club. These line the south side of the canal adjoining Warrington Lane, extending northeast from Spring Lane Bridge to Lymm Marina and the boat repair and service premises of Hesford Marine. The canal environment, the canal and towpath users, and the boat moorings here will all be badly affected by both the construction and operation of HS2. As elsewhere, the canal boat moorings are used residentially for various periods of time and should therefore be afforded at least the same degree of noise mitigation as for residential properties.

The adjacent embankments appear to be shown on the plans with false cuttings providing some screening and noise protection. There is also a 2m noise fence barrier shown between Lymm Road and the canal but only on the east side of the embankment. However, it is not clear what the “noise related engineering features” across the Bridgewater Canal Underbridge as shown on the Operational Noise Contour map actually refer to. To protect canal boat and towpath users there should be noise fencing across the bridge on both sides and this needs to extend onto both embankments to avoid sound spillage around the ends of the fences. The inadequacy of the present proposals is shown by the ‘bulge’ in the noise contour colours around the canal underbridge, with the Bridgewater Canal close to the bridge subject to levels in the ‘red’ zone of significant effect.

The Bridgewater Canal is a broad waterway and its dimensional standards as built should be maintained for both navigation and maintenance, with a minimum headroom at the underbridge of 4m. The design should follow the general design principles proposed by Canal & River Trust and accepted for HS2 Phase 1 canal crossings.

In the construction phase there will be impacts on the canal from the Bridgewater Canal Satellite Compound and the Lymm Road Satellite Compound, and the consecutive programming of the works on the underbridge and embankment means there will be disruption to canal users here over 4 years. Screening of the compounds should be provided to limit the noise nuisance to canal users.

It is estimated that 14 of the moorings will need to be vacated for a significant time for construction to take place and appropriate arrangements should be made and compensation paid for their temporary relocation.

MANCHESTER SHIP CANAL (MA04)

The Manchester Ship Canal is a commercial navigation with only limited recreational use. It is expected that the viaduct crossing will maintain the headroom and width required by the maximum size of ships that can use the canal. As a very high and prominent structure the design should aim to be iconic in nature and of inspiring appearance rather than just utilitarian.

LEEDS & LIVERPOOL CANAL, LEIGH BRANCH (MA05)

The grade separated junction of HS2 with the West Coast Main Line at Abram requires a high embankment that will be visible from the Leeds & Liverpool Canal’s Leigh Branch across the Hey Brook valley. Noise mitigation should be provided to reduce the transmission of noise towards the canal.

In the construction phase the Pennington Satellite Compound will have additional adverse impacts and screening should be provided to limit the noise nuisance to canal users.

EASTERN LEG

COVENTRY CANAL (LA02)

The Coventry Canal at Polesworth is crossed by Polesworth Viaduct, spanning an entrance to the old colliery basin which provides attractive and tranquil moorings for about 12 canal boats including residential use, and also a base for holiday hire boats. The basin and wharf have historic and industrial archaeological value as one of the last on the narrow canal system to be used for loading coal from the adjacent colliery. The former colliery site alongside the canal has been reclaimed as the Pooley Country Park and Heritage Centre and is now a well-used recreational facility.

Both the public facility of the country park and the private moorings will be severely damaged by HS2, with the line cutting through the country park on embankment and in cutting, destroying heritage buildings used for light industry and the visitor centre. Although a diversion of Pooley Lane and a new access road will now be provided to the remainder of the park and the scout hut, the direct physical damage and the constantly intrusive noise will severely limit future use and enjoyment of the country park facilities and could make the canal boat moorings uninhabitable for residential use.

The boat moorings include permanent residential moorings and, as is common, the others are often used residentially overnight, at weekends or for longer periods. The Operational Noise Contour map shows 2m high noise fencing only on the east side of the viaduct across the Coventry Canal, with the boat moorings subject to noise levels in the red zone (more than 65 dB daytime and more than 55 dB night-time) which is not acceptable.

A noise fence barrier should therefore also be provided on the west side of the viaduct and the adjacent Pooley Lane Embankment to reduce operational noise at the canal to below the equivalent "significant effect" level for residential properties.

There will also be major impacts on the Coventry Canal and the boat moorings during the construction phase, and an access must be maintained at all times to the moorings otherwise compensation will need to be paid for their temporary relocation. Temporary closures of the Coventry Canal and its towpath for construction of the viaduct should be programmed for the quieter winter 'stoppage' period. The Polesworth Viaduct Satellite Compound is close to the canal and should be screened to limit the noise nuisance to canal users.

ASHBY CANAL (LA03)

The northern part of the Ashby Canal between Moira and Snarestone was closed by 1966, but has been under progressive restoration for the past 25 years. The section from Moira to Donisthorpe was reopened by 2005, and in that year Leicestershire County Council obtained a Transport & Works Act Order to restore the canal from Snarestone to Measham. The required land was purchased and a section of canal north from Snarestone has since been completed. A further section of canal was due to be reconstructed as part of the Measham Wharf and housing site development which has planning consent but has been delayed and blighted by the constantly changing plans for HS2.

The original 2013 Phase 2 route on the west side of Measham crossed the restoration route of the Ashby Canal without any provision for a bridge despite the existence of the TWA Order.

The 2016 Preferred Route belatedly recognised that the original route would have destroyed Measham's major employment site and proposed a new route to the east of Measham. This avoided the Ashby Canal within Measham and the major housing site that was planned to include its restoration. However, it would have crossed the canal route on the edge of the town at entirely the wrong level, requiring a canal diversion from the TWA route with major engineering challenges, and making no provision for this.

In 2017 the third route at Measham was announced, reverting to the west side but avoiding the major employment site. However, this cuts through the housing site rendering it largely unviable and losing the community benefit of the associated canal restoration. Again, no bridge or provision for the canal restoration was included on the plans at that stage.

All these routes appear to have been devised as desk studies without taking full account of vital local interests. Accordingly, the housing site developer has since submitted plans for an alternative route that

would both protect the main employment site and avoid the housing site, enabling the canal restoration to proceed, known as Route 4 (see below).

The Current Plans

Following our earlier representations, IWA is pleased to note that the Proposed Scheme plan now shows an Ashby Canal Restoration Underbridge at the end of the River Mease Viaduct. A further bridge for the canal is shown under the proposed access road to a large balancing pond situated between HS2 and the A42. Both these bridges should provide a minimum of 3m air draft clearance and conform to the other TWAO design standard dimensions.

The A42 is to be realigned starting from a point just west of where it crosses the historic Ashby Canal route, and if Route 4 is accepted the realignment would commence further west. Either way, the Design Manual for Roads & Bridges requires DfT highway improvement schemes to include navigable crossings for recognised waterway restoration projects. The canal route is protected in the NWLDC Local Plan and IWA therefore expects that the work to realign the A42 should include an underbridge for the continuation of the canal restoration. This should also be to the TWAO dimensions, although the water level could possibly be reduced if necessary to provide sufficient headroom by construction of a canal lock between the HS2 and A42 bridges, which may assist in reducing the height of the balancing pond access road. A canal bridge under the A42 would also provide a towpath connection and obviate the need for the lengthy diversion of footpath P75/6 which as indicated would create an additional obstacle to the canal restoration unless a footbridge is provided across its line on the west side of the A42.

If for any reason the Route 4 alternative is not adopted and the current HS2 plans do proceed then the authorised Waterside housing site will not be built and HS2 Ltd will undoubtedly have to pay substantial compensation to the developer. The development would have provided about 1.1km of reconstructed canal at a cost of about £3.5m as a community benefit, and IWA would expect this to be funded as part of the compensation package. The obvious arrangement would then be for Leicestershire County Council to receive this part of the compensation and for them to construct the canal as they are already authorised to do so by the TWA Order.

Extensive noise barriers are shown on the Operational Noise Contour map along the east side of HS2 to protect housing but mitigation fencing should also be provided for future users of the Ashby Canal on the west side north of Burton Road.

Alternative Route 4

An alternative route for HS2 at Measham is being promoted by the affected housing site developer Measham Land Co. and other local interests, known as Route 4, which would move both HS2 and the A42 realignment further west. This would enable the housing site and the integral canal reconstruction to proceed, and would also reduce the number of residential properties affected, be broadly cost neutral in construction, avoid the development compensation payments, and minimise the overall adverse impacts. It is supported by IWA, although we realise that it will be decided on a broad balance of economic, social and environmental factors.

With support from the local MP, the Secretary of State has agreed to review and consult on this alternative. It is also noted that the HS2 Independent Design Panel has visited Measham and recommended development of a masterplan and collaborative engagement with the community, which could include "contributing to the restoration of the canal".

IWA looks forward to acceptance of the Route 4 alignment and the removal of the threats to the continuing restoration of the Ashby Canal.

If this does become the final route then the same requirements for both an HS2 and an A42 crossing of the canal will still apply, although the exact locations of the bridges will of course change.

RIVER SOAR (LA05)

The Ratcliffe-on-Soar Viaduct passes close to Redhill Marina where the extensive boat moorings include two marina basins and extend along the riverbanks both upstream and downstream, from Redhill Lock almost to the confluence with the River Trent. The moorings include residential users who will be significantly

impacted by noise and visual intrusion, and noise mitigation fencing should be provided across a long section of the viaduct to minimise noise intrusion on the moorings.

The great length of the viaduct will have a major landscape impact which should be mitigated through good design.

TRENT NAVIGATION, CRANFLEET CUT (LA05)

The Long Eaton and Toton Viaduct crosses the Trent Navigation's Cranfleet Cut directly over canal boat moorings of the Nottingham Yacht Club, extending along the canal banks and in a mooring basin. These include residential boats and noise fencing should be provided across the viaduct to minimise noise intrusion.

EREWASH CANAL (LA05, LA06)

The Erewash Canal will be affected over several miles through Long Eaton and north to Stanton Gate.

Long Eaton

The HS2 route through Long Eaton is on embankment and viaducts which will be visible from the Erewash Canal. In particular, there are open views across Toton Yard to the new Toton Station site. The canal environment and its users will be affected by both construction and operational noise and the indicated noise fence barriers should be extended to protect not only the nearest housing but also the amenity and recreational corridor of the canal.

Sandiacre

At Sandiacre Lock a balancing pond access is shown crossing by the listed canal bridge, and there are concerns about construction vehicle weights and sizes and possible impacts on the bridge parapets.

Between Toton and Stanton Gate the viaduct along the valley crosses the Erewash Canal at a very skew angle and may need a short canal diversion to enable a shorter span crossing with less visually intrusive piers. There is also an auto-transformer station that will be visible from the canal around Pasture Lock, and screen planting should be provided by relocation of the balancing pond.

Canal users travel only at walking pace and boaters will take 15 minutes or more to pass through each lock. They will also moor up for lunch or overnight in convenient or attractive locations, so are very vulnerable to any excessive noise impacts from HS2 trains. If their use of a long section of the canal is not to be discouraged and unduly restricted by a degraded sound environment, then it is imperative that the viaduct has acoustic fencing barriers to mitigate the noise, and that these are designed to achieve at least the same standard of noise reduction as would be afforded to residential buildings at that location.

Stanton Gate

The M1 realignment at Stanton Gate will require a new canal bridge but there are as yet no dimensional details. It should span the full width of the canal and its towpath and provide a minimum 3m air draught clearance. The design of the bridge structures is unknown but should follow the CRT design principles accepted for HS2 Phase 1.

NOTTINGHAM CANAL (LA06)

Although the Nottingham Canal is abandoned and not currently proposed for restoration, much of its towpath remains used as a footpath and a long section of the canal between Eastwood, Trowell and Wollaton is capable of restoration as a local amenity. However, the Proposed Scheme plan shows the Trowell Embankment across the canal, near the A609 Nottingham Road Underbridge, with the towpath closed and a footpath diversion. IWA considers that this unnecessary blockage should be avoided by providing a bridge where HS2 crosses the Nottingham Canal of adequate height and width to maintain the continuity of the towpath (Trowell Footpath 23) and of the canal for future restoration.

CHESTERFIELD CANAL (LA11)

The Chesterfield Canal has been progressively restored over a number of years with public funding and voluntary labour from Worksop to Kiveton and between Chesterfield and Staveley, where it is currently being further extended by the Chesterfield Canal Trust (CCT). Its route is safeguarded in the relevant Local Plans. However, completion of the restoration between Staveley and Norwood Tunnel has been blighted by the plans for HS2 since 2013 and the present plans remain a threat to the project at Staveley, at Norwood, and possibly also at Chesterfield.

Staveley Infrastructure Maintenance Depot

The vast size and massive land take of the proposed Staveley Infrastructure Maintenance Depot (IMD) will significantly affect the environment and context of the Chesterfield Canal for most of its length between Hollingwood and Staveley. This section of canal has been restored as a public amenity and is very well used for towpath walking and cycling (estimated as 75,000 people annually), recreational boating and angling. It currently enjoys a largely open rural outlook which greatly adds to its amenity, but this is threatened by the IMD. The proposed Landscape Mitigation Planting and the canalside Woodland Habitat Creation needs to be planned to provide screening of the IMD buildings and its operational noise whilst minimising the loss of open views from the canal.

Any canalside woodland planting should be set back from the canal to minimise the increased maintenance costs from the need to regularly cut back overhanging vegetation, or from branches falling and leaves blowing into the canal necessitating more frequent dredging.

No information on the noise impacts of the construction and operation of the IMD has been provided, so the extent of this and the effectiveness of any mitigation measures cannot be assessed. However, given the size of the site, the nature of the operation, and night-time working, the impacts of noise are likely to be severe on the environment, amenity and tourism value of the canal, as well as local residents.

Mineral Railway Line

Reuse of the disused mineral railway line to access the proposed IMD should not be incompatible with restoration of the Chesterfield Canal at the original rail bridge crossing at Lowgates, west of Eckington Road Bridge, but HS2 has repeatedly failed to confirm the rail level at that point.

The mineral railway line was subject to some mining subsidence prior to its closure, reducing the headroom over the original canal level. Although the bridge deck was removed, the route was not fully abandoned and CCT needed to allow for its possible reinstatement. The Trust has therefore invested significant funds and voluntary labour in building a new canal lock at Staveley and restoring the channel below Ireland Close and Eckington Road at a lower level to pass under the mineral line. Recent excavation of the crossing point has found the original rail bridge abutments to be substantially intact and in good condition, allowing reinstatement of the rail bridge deck with sufficient headroom for the canal and its towpath.

The Trust has repeatedly tried to engage constructively with HS2 engineers to confirm the proposed new track levels to enable them to continue the canal restoration work without uncertainty about the compatibility of the future HS2 works. But despite several promises the necessary assurances have not been forthcoming, and there is no acknowledgement of the need to accommodate the canal route under the railway in the present consultation.

A recent statement to Parliament by the Secretary of State [HoC Transport Questions 1/10/2018] makes clear that the Government expect HS2 to avoid obstructing canal restoration projects. HS2 should now with some urgency work with Chesterfield Canal Trust and Derbyshire County Council (landowners of this part of the canal) to confirm the levels and that the reinstated railway will provide the necessary clearance over the restored Chesterfield Canal, in order to avoid severance of the protected canal route and to enable its restoration to proceed.

Public Realm at Staveley

The Proposed Scheme plans show three areas of 'public realm' along the Chesterfield Canal route; around Staveley Basin and on either side of Eckington Road Bridge. This is described as "to mitigate against loss of community areas by providing new areas of public realm along the Chesterfield Canal" with "a flexible public

square around Staveley Canal Basin” and proposed “stepped terrace seating”. However, this has not been discussed with Chesterfield Canal Trust.

It is not clear where the “stepped terrace seating” is proposed to be located or why this has been suggested. The land around Staveley Canal basin is already a public space with plans to develop it further as a mixed recreation, residential and small business development in support of the public use of the canal, and such seating is no part of those plans. Most of the other two indicated ‘public realm’ areas have already been used as part of the restored canal or are needed to continue that work, so the purpose of HS2 designating them public realm is not clear, and the threat of HS2 compulsorily purchasing them is not acceptable.

Norwood Tunnel

Norwood Tunnel is historically important as one of the first major canal tunnels planned by the pioneering canal engineer James Brindley. It was in use from 1775 to 1907 when part of it collapsed due to coal mining subsidence. The Chesterfield Canal has been restored up to the eastern portal of Norwood Tunnel, and it is planned to reopen the first section of the tunnel to navigation. The central section of the tunnel will be bypassed by a surface level canal at a slightly higher level, incorporating a marina, and present plans for the western end require further locks up to a new summit level passing under the M1 by an existing culvert.

These plans were published in 2010 (Next Navigation: Restoration of the Chesterfield Canal between Staveley and Kiveton Park. Chesterfield Canal Partnership) but appear to have been entirely ignored by HS2. The Proposed Scheme plan shows almost the whole area between the Norwood Tunnel west portal and the M1 occupied by the Wales Embankment and landscape earthworks, leaving no space for the flight of locks needed to access the existing motorway underpass.

An Accommodation Underbridge is shown for Wales Footpath 14 and what appears to be a culvert for Wales Footpath 17 Diversion, but there is no accommodation for the canal route. These plans need major changes to provide a sufficiently wide surface corridor for the canal, its locks and the necessary water storage ‘side ponds’, spanned by a wide canal underbridge.

An alternative recently considered by CCT is to bore a new tunnel under the highest ground at the western end. This would start close to the western portal and run just south of the original tunnel and at the same level to pass under HS2, the M1 and the highest ground. It would then connect with the central surface level section and the eastern end of the original tunnel as described above. This would reduce the number of new locks needed and the height of the summit level, giving construction, operational and water supply benefits.

HS2 should now with some urgency fully engage with the Chesterfield Canal Trust and the Canal & River Trust (landowners of Norwood Tunnel) to consider, design and cost the optimum engineering solution that will provide a restored section of the canal from Norwood to east of the M1 in conjunction with the construction of HS2.

Chesterfield

An essential part of Phase 2B is now improvement to the Midland Main Line through Chesterfield which is very close to the Chesterfield Waterside development. This will provide a terminus for the restored canal, but there is no assessment of the economic or environmental impacts on it of the railway works.

SHEFFIELD & SOUTH YORKSHIRE NAVIGATION (LA13)

The River Don Viaduct will cross the Sheffield & South Yorkshire Navigation at Mexborough where it is still used as a commercial navigation, as well as increasingly for recreational boating. The viaduct piers should span the full width of the canal and its towpath and provide the necessary headroom specified by the Canal & River Trust. The viaduct will be a major landmark structure and its design should seek to seamlessly integrate with and enhance the location.

DEARNE & DOVE CANAL (LA13)

The proposed restoration of the Dearne & Dove Canal by the Barnsley, Dearne & Dove Canals Trust could be affected in two ways.

Electrification and signalling works to the existing Dearne Valley Railway Line adjacent to and crossing the Dearne and Dove Canal at Swinton should not further inhibit the future restoration of the canal on its historic route.

The identified alternative route using the canalised River Dearne for navigation will be crossed by the River Dearne Viaduct, and the viaduct piers should be located to provide a clear span of the river and sufficient width of its banks for future construction access and provision of a towpath.

AIRE & CALDER NAVIGATION (LA15, LA17, LA18)

HS2 crosses the Aire & Calder Navigation by the River Calder Viaduct, the River Aire Viaduct, Leeds East Viaduct and the Leeds HS2 Station deck, as well as running close to the canal between Woodlesford and Stourton.

The Aire & Calder is a commercial navigation as well as being used increasingly for recreational boating. Each of the crossings should conform with the Canal & River Trust's current minimum dimensions, and the Leeds East Viaduct access to the Rolling Stock Depot should provide sufficient headroom for future commercial navigation improvements to Euro Class 2 to access the proposed new inland port upstream at Stourton. Where temporary bridges are required, these and the main viaduct construction should be planned to minimise interruptions to navigation and provide ample advance notice

The River Calder Viaduct across the Aire & Calder Wakefield Branch is close to boat moorings below Kings Road Lock (near Rose Farm) and appropriate noise mitigation should be provided.

Where retaining walls are proposed near the tight bend in the navigation at Rodhill Corner, their construction should not narrow or restrict the navigation for larger commercial vessels.

The visual impact of the new Leeds Station on the Canal Wharf Conservation Area of the Leeds & Liverpool Canal and its listed warehouse will be significant, and great care will be needed with the station design and layout to minimise this. The station deck spanning the River Aire will have a significant visual impact on the environment and users of the navigation and light wells should be provided to break up the otherwise oppressive dark tunnel effect on the river.

(ends)