



HS2 Phase One environmental statement consultation

Response Form

This consultation will close on 27 February at 23:45

On 25 November the High Speed Rail (London – West Midlands) Bill was introduced to Parliament seeking the powers necessary to construct and operate HS2 Phase One. In line with Parliamentary Standing Orders an Environmental Statement has been produced to accompany the Bill. A consultation is now being held on the Environmental Statement to ensure that the decision taken by Parliament at Second Reading of the Bill is informed by the public's views on the Bill's environmental impacts.

You can respond to this consultation by emailing your comments to:

HS2PhaseOneBillES@dialoguebydesign.com

Or writing to:

FREEPOST RTEC-AJUT-GGHH
HS2 Phase One Bill Environmental Statement
PO Box 70178
London
WC1A 9HS

You can also respond by downloading and saving this response form to your computer, completing it, and then attaching it to an email and emailing your comments to HS2PhaseOneBillES@dialoguebydesign.com. You can also print your form and send it to the address above.

Please only use the channels described above when responding to this consultation. We cannot guarantee that responses sent to other addresses will be included in this consultation.

For more information about the consultation please visit www.gov.uk or call the HS2 Public Enquiries Team on 020 7944 4908.

Please write your response clearly in black ink within the boxes and, if you require further space, please attach a further sheet to the response form.

Information about you

It is important to give us your name to ensure your response is included

First name: Gren
Surname: Messham
Address:
Postcode:
Email:

Are you responding on behalf of an organisation? If so, please state your organisation's name and your position below:

The Inland Waterways Association (IWA), Island House, Moor Road, Chesham, HP5 1WA Phone: 01494 783453 E-mail: iwa@waterways.org.uk Head of HS2 Campaign and Communications Group, IWA Trustee

Confidentiality and data protection

Anyone wishing to send comments should note that responses will be published on a publicly-accessible website in due course, but we will not publish names, addresses and signatures of individuals. As it is not possible for us to check whether the substance of responses contains other personal data, you should not include information in your response that could identify you unless you are happy for it to be made public.

If you do not want any of your response to be published you should clearly mark it as "Confidential" in the "subject" of the email or at the top of your letter. However, please note the following two paragraphs.

If you want the information you provide to be treated as confidential, you should be aware that all information provided in response to this consultation, including personal information, may be subject to disclosure in accordance with access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004). Under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with our confidentiality obligations. In view of this it would be helpful if you could explain in your response why you regard the information you have provided as confidential. If we receive a request for disclosure of the information you provide we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department for Transport or HS2 Ltd.

Please note that all responses received, whether marked Confidential or not, will be passed on in full to the Houses of Parliament and their appointed Assessor, who will analyse the responses and make a report to Parliament. That report will not contain your personal data.

I wish my response to be treated as confidential (please write your reasons below)

The Environmental Statement is made up of a number of documents. The Non-Technical Summary provides a summary of all the information contained in the Environmental Statement.

Volume 1 provides an introduction to the Environmental Statement including an overview of the impact assessment process and consultation undertaken to date, and the main strategic, route-wide and local alternatives considered.

The line of route between London and the West Midlands is described in Volume 2, which has been divided into 26 smaller geographical sections called Community Forum Areas (CFAs) and each area is covered by its own separate report.

Volume 3: route wide effects described the likely route wide environmental effects of the construction and operation of Phase One of HS2.

Volume 4: off-route effects describes the likely significant environmental effects of Phase One of HS2 expected at locations beyond the route corridor, such as rail stations, rail depots and rail lines. This volume covers areas not included in the community forum area reports in volume 2.

Volume 5 contains technical appendices, including the response to the draft Environmental Statement consultation and the draft Code of Construction Practice, setting out baseline data and other technical information.

Please let us know your comments on the Environmental Statement in relation to the Non-Technical Summary and five volumes.

Question 1. Please let us know your comments on the Non-technical summary.

My comments on the Non-technical summary are:

No comments

Question 2: Please let us know your comments on Volume 1: Introduction to the ES and Proposed Scheme.

My comments on Volume 1 are:

The Inland Waterways Association (IWA) is a registered charity, founded in 1946, which advocates the conservation, use, maintenance, restoration and development of the inland waterways for public benefit.

IWA members' interests include boating, towpath walking, industrial archaeology, nature conservation and many other activities associated with the inland waterways.

IWA works closely with navigation authorities, other waterway bodies, and a wide range of national and local authorities, voluntary, private and public sector organisations.

IWA accepts that the overall economic and social case for the proposed High Speed Rail network is for Government to make and for Parliament to decide.

If it proceeds it will have major adverse impacts on the local environment and quality of life of many people on its route, both during construction and operation, including impacts on the inland waterways infrastructure and users. The waterways affected include both existing navigations and canals under restoration for which equal consideration and provision should be made.

IWA considers that the project needs to be designed and implemented so as to minimise its impacts, to mitigate those impacts that cannot be avoided, and to fully compensate all those disadvantaged by its construction and operation.

IWA has engaged in the consultation process, by attending local CFA meetings and discussing issues of clarification and concern. IWA has also responded to the various consultations on route preferences, design refinements and draft Environmental Statement.

Whilst responses to the route preferences and design refinements have been clear, those to the draft ES have not. Apart from a summary in Volume 5 claiming that responses have been studied, and where possible used to modify the route or alter arrangements it is not possible to see what if anything has been done to improve the design or implementation of the project.

It appears likely that because of the short time between completion of the draft consultation, and issuing of the final version the majority of inputs have been summarised but not acted upon.

Question 3: Please let us know your comments on Volume 2: Community Forum Area reports.

You are welcome to comment on one, a number or all the reports listed below. Please tick the reports described below that your comments apply to. If making comment on more than one report, please indicate clearly in your response the report to which your comments relate.

Please tick those reports you wish to comment on below:

- | | |
|--|--|
| <input type="checkbox"/> CFA 1 Euston | <input checked="" type="checkbox"/> CFA 15 Greatworth to Lower Boddington |
| <input checked="" type="checkbox"/> CFA 2 Camden and HS1 Link | <input checked="" type="checkbox"/> CFA 16 Ladbroke and Southam |
| <input type="checkbox"/> CFA 3 Primrose Hill to Kilburn (Camden) | <input checked="" type="checkbox"/> CFA 17 Offchurch and Cubbington |
| <input checked="" type="checkbox"/> CFA 4 Kilburn (Brent) to Old Oak Common | <input type="checkbox"/> CFA 18 Stoneleigh, Kenilworth and Burton Green |
| <input type="checkbox"/> CFA 5 Northolt Corridor | <input type="checkbox"/> CFA 19 Coleshill Junction |
| <input type="checkbox"/> CFA 6 South Ruislip to Ickenham | <input checked="" type="checkbox"/> CFA 20 Curdworth to Middleton |
| <input checked="" type="checkbox"/> CFA 7 Colne Valley | <input type="checkbox"/> CFA 21 Drayton Bassett, Hints and Weeford |
| <input type="checkbox"/> CFA 8 The Chalfonts and Amersham | <input checked="" type="checkbox"/> CFA 22 Whittington to Handsacre |
| <input type="checkbox"/> CFA 9 Central Chilterns | <input type="checkbox"/> CFA 23 Balsall Common & Hampton-in-Arden |
| <input type="checkbox"/> CFA 10 Dunsmore, Wendover & Halton | <input type="checkbox"/> CFA 24 Birmingham Interchange and Chelmsley Wood |
| <input type="checkbox"/> CFA 11 Stoke Mandeville and Aylesbury | <input type="checkbox"/> CFA 25 Castle Bromwich and Bromford |
| <input type="checkbox"/> CFA 12 Waddesdon and Quainton | <input checked="" type="checkbox"/> CFA 26 Washwood Heath to Curzon Street |
| <input type="checkbox"/> CFA 13 Calvert, Steeple Claydon, Twyford and Chetwode | <input type="checkbox"/> Don't know |
| <input type="checkbox"/> CFA 14 Newton Purcell to Brackley | |

My comments with regard to the reports ticked above are:

Community Forum Area (CFA) 2 Camden Town and HS1 Link

Land on the towpath side of Hawley Lock (over A502 east from Camden lock) is shown in Drawing CT-05-143 as potentially required for construction. This could sever the towpath, and possibly prevent operation of the lock. Location 004-03-036 is a designated 'Significantly Affected Viewpoint' due to construction on the towpath by the lock. The view at this location is described: 'There will be views of the construction works to install an external walkway, new track and Overhead Line Equipment (OLE) on the Chalk Farm Viaduct over the market stalls of Camden Lock Village.'

IWA Consultation Response

- Towpath and lock working areas at Hawley Lock need to be maintained during construction to allow lock operation and towpath passage at all normal times. Lock operating space should be the greater of 2m from the side of the lock, or 0.5m from the ends of the balance beams.

CFA 4 Kilburn (Brent) to Old Oak Common

The construction area potentially required is shown on drawing CT-05-008 as including the south bank of the Grand Union Canal from the A219 Scrubs Lane road bridge west to the western side of the bridge crossing the West London railway over the same canal. From that point west for another 420m up to and alongside the Old Oak Common Station main compound the entire width of the canal is shown within the construction area.

Plan CT- 05-009a R1 shows Willesden Euro Terminal (main compound, rail import and export and materials stockpile) and Atlas Road Construction Site (satellite compound manufacturing tunnel segments) occupying both sides of land along the GU Canal Conservation Area from a railway crossing at Bridge 7 north-west to Bridge 8 (Cricklewood to Acton Junction Line). This site has two separate temporary construction bridges over the canal about half way along, and enclosed aerial conveyors (max height 3.3m above ground) over the canal adjacent to or on Bridge 8. The site is a major tunnel lining manufacturing site and includes a conveyor-fed spoil heap from station and tunnel construction on the north of the canal here and may be in use for around 10 years.

Section 5.4.19 states 'The Grand Union Canal runs through the study area and a towpath and cycleway runs alongside the canal. There is no permanent or temporary re-routeing affecting the canal and no significant effects on the amenity of users are predicted'

Section 12.5.29 states 'No permanent changes or effects are expected to be made to the navigability or course of the Grand Union Canal'

IWA Consultation Response

- A Minimum Clearance of 3m over water and 2.75m over the towpath should be provided for the proposed temporary overhead conveyor and bridge crossings.

CFA 7 Colne Valley

Construction work identifies the need for a 'temporary alternative route for the Grand Union Canal western tow path, to the east for a period of approximately three years and nine months adding an additional 600m. It will then be permanently reinstated along its existing alignment.' This is to avoid towpath use underneath the viaduct during its construction.

Additional noise adsorption barriers are shown as fitted to both sides of the viaduct up to and beyond the Grand Union Canal crossing. Noise levels in the marina are forecast to be within 50-65Db during the daytime, with noise levels at the point of crossing to be 65-70dB .

IWA Consultation Response

- The HS2 Phase 1 Environmental Statement Volume 5 Appendix SV 001-000 sets out proposals to manage noise nuisance from the project. HS2 expects (amongst others) waterway users whether on boats or towpaths to be exposed to levels of noise above the project-determined SOAEL (Significant Observable Adverse Effect Level) of 65dB (daytime) 55dB (night time), or a 'Major' change in noise levels of ≥ 5 dB because the impact will be transient. In practice these levels could be as high as 90dB for a boat or towpath user passing under a bridge within 15m of a train passing overhead, and represent a change in sound pressure of up to 20dB.
- It is IWA's position, detailed in 'Route Wide Effects' below that this is not acceptable, and

further 'best available technology' engineering and mitigation needs to be deployed at canal crossings and in the vicinity of marinas and short term moorings to reduce transmitted noise as far as possible towards and below the SOAEL level. This would move towards the UK Government's Noise Policy Aims for a '...situation where the effect lies somewhere between LOAEL and SOAEL.'

- At this location, where noise barriers are already proposed on the viaduct crossing, a section of noise fence barriers or equivalent should be fitted on the sides of the viaduct at the canal crossing to achieve the above mitigation. This may have the added benefit of removing the '60-65dB impact area' impinging on the SW corner of Harefield Marina.

CFA 15 Greatworth to Boddington

Plans have advanced to construct the culvert over the Boddington Feeder, and its importance to canal flow is mentioned. Canal & River Trust need to remain involved in the approval of works design and programme, as EA is currently shown as the 'go to' regulator for design approval.

IWA Consultation Response

- Canal & River Trust need to be involved in design and approval of works to culvert the Boddington Feeder in this section, in addition to the EA as the watercourse is a canal feeder important to the operation of the Oxford Canal.

CFA 16 Ladbroke and Southam

No attempt has been made to mitigate noise from train operation in the vicinity of the Wormleighton canal loop which passes within 30m of the HS2 track on an embankment, becoming an engineered footpath underpass for the diverted SM116a footpath. Likewise no attempt has been made to mitigate noise in the vicinity of the Oxford Canal crossing east of Willison's Bridge. Sound map SV-01-040b shows a 15m section at the tip of the loop, and a 20m section at the canal overbridge, where 'averaged equivalent' noise levels of >70dB can be expected, in a currently tranquil situation.

IWA Consultation Response

- The HS2 Phase 1 Environmental Statement Volume 5 Appendix SV 001-000 sets out proposals to manage noise nuisance from the project. HS2 expects (amongst others) waterway users whether on boats or towpaths to be exposed to levels of noise above the project-determined SOAEL (Significant Observable Adverse Effect Level) of 65dB (daytime) 55dB (night time), or a 'Major' change in noise levels of ≥ 5 dB because the impact will be transient. In practice these levels could be as high as 90dB for a boat or towpath user passing under a bridge within 15m of a train passing overhead, and represent a change in sound pressure of up to 20dB.
- It is IWA's position, detailed in 'Route Wide Effects' below that this is not acceptable, and further 'best available technology' engineering and mitigation needs to be deployed at canal crossings and in the vicinity of short term moorings to reduce transmitted noise as far as possible towards and below the SOAEL level. This would move towards the UK Government's Noise Policy Aims for a '...situation where the effect lies somewhere between LOAEL and SOAEL.'

- In this CFA, where no noise barriers are proposed on the footpath SM116A underpass or Oxford Canal viaduct crossing, sections of noise barriers or equivalent should be fitted at both locations to achieve the above mitigation.

CFA 17 Offchurch and Cubbington

There appear to be no additional noise barriers on the Longhole Viaduct over the Grand Union Canal, allowing noise contours to increase on the viaduct to create a small area of >70dB 'average equivalent' noise, and a 330m stretch of GU Canal and towpath and bridleway of 65-70dB 'average equivalent' noise, in a currently tranquil situation. Sound map SV 01-044b refers.

IWA Consultation Response

- The HS2 Phase 1 Environmental Statement Volume 5 Appendix SV 001-000 sets out proposals to manage noise nuisance from the project. HS2 expects (amongst others) waterway users whether on boats or towpaths to be exposed to levels of noise above the project-determined SOAEL (Significant Observable Adverse Effect Level) of 65dB (daytime) 55dB (night time), or a 'Major' change in noise levels of ≥5dB because the impact will be transient. In practice these levels could be as high as 90dB for a boat or towpath user passing under a bridge within 15m of a train passing overhead, and represent a change in sound pressure of up to 20dB.
- It is IWA's position, detailed in 'Route Wide Effects' below that this is not acceptable, and further 'best available technology' engineering and mitigation needs to be deployed at canal crossings and in the vicinity of short term moorings to reduce transmitted noise as far as possible towards and below the SOAEL level. This would move towards the UK Government's Noise Policy Aims for a '...situation where the effect lies somewhere between LOAEL and SOAEL.'
- In this CFA, where no noise barriers are proposed on the Longhole Viaduct crossing, sections of noise barriers or equivalent should be fitted to achieve the above mitigation.

CFA 20 Curdworth to Middleton

The route runs over the Birmingham and Fazeley Canal in the pound between locks 5 and 6. Section 2.1.6 states the canal is classified as a 'main river'- this is incorrect. Route traffic is assessed to be 12 trains per hour after the Leeds spur when phase 2 is in operation.

This area already suffers from noise from the adjacent motorway, and baseline levels of 68.7dB (daytime) and 60.9dB (night time) were measured at Marston Lane adjacent to one of the locks. Any increase in these will be very unwelcome, whether due to construction or operation activity.

Modelling of noise from the operational trains alone shows an 850m stretch of the canal is in the 60-65dB section, with 330m length of canal including locks within the 65-70dB sound envelope, and approx 90m of this in the >70dB sound envelope. SV-01-057 refers. No noise barrier is shown on the viaduct as it crosses the canal and proceeds northwards in plan CT-06-119.

IWA Consultation Response

- The HS2 Phase 1 Environmental Statement Volume 5 Appendix SV 001-000 sets out

proposals to manage noise nuisance from the project. HS2 expects (amongst others) waterway users whether on boats or towpaths to be exposed to levels of noise above the project-determined SOAEL (Significant Observable Adverse Effect Level) of 65dB (daytime) 55dB (night time), or a 'Major' change in noise levels of ≥ 5 dB because the impact will be transient. In practice these levels could be as high as 90dB for a boat or towpath user passing under a bridge within 15m of a train passing overhead, and represent a change in sound pressure of up to 20dB.

- It is IWA's position, detailed in 'Route Wide Effects' below that this is not acceptable, and further 'best available technology' engineering and mitigation needs to be deployed at canal crossings and in the vicinity of short term moorings to reduce transmitted noise as far as possible towards and below the SOAEL level. This would move towards the UK Government's Noise Policy Aims for a '...situation where the effect lies somewhere between LOAEL and SOAEL.'
- In this CFA, where baseline noise levels close to the canal crossing are already at or above SOAEL further modelling needs to be carried out to assess the situation of combined baseline and operational railway noise, and to identify how and where noise mitigation can be deployed to minimise additions to existing noise nuisance.
- Noise mitigation during construction activities is also required. Canal and towpath users should not be exposed to indiscriminate noise from uncontrolled construction activities whilst legitimately using the navigation.
- The viaduct and embankment will have a potentially severe adverse effect on the setting of the canal and locks. Good design needs to be deployed to mitigate this impact, and maximise the positive impressions from the necessary infrastructure. IWA supports the use of CRT's Design Principles for waterway intersections.

CFA 22 Whittington to Handsacre

Section 2.6.43 discusses route alternatives considered at this location. It goes on to state 'Option E considered a realignment of the Handsacre link to avoid a double crossing of the Trent and Mersey Canal. Although an alignment could have been developed, other constraints would mean the speed of the link would reduce to 170kph and would still pass close to the canal. As this alignment did not meet the original proposal to avoid impacts on the canal from the Handsacre link and required a speed reduction that was assessed to have a significant impact on the potential operation of HS2, the option was not taken forward.' However IWA has taken this forward with Canal & River Trust, and believes the Environmental Statement is factually incorrect in this respect as has been HS2 Ltd's advice and responses to proposals in this area since January 2012.

Section 12.3.10 discusses Traffic and Transport, and makes the following point about usage of the Trent and Mersey Canal:

'There are two navigable waterways that will be directly affected by the Proposed Scheme in the Whittington to Handsacre area, the Trent and Mersey Canal and the Coventry Canal. A usage of five boats per day has been identified during a survey undertaken of the Trent and Mersey Canal....'

According to the Canal & River Trust Annual Lockage Report for 2012 published January 2013 (canalrivertrust.org.uk/media/library/323.pdf) the annual lockage in 2012 for Lock 20 Woodend Lock

was 8491, which equates to an average over the whole year of 23 boats per day. HS2 appear to have chosen an unrepresentative occasion to collect their boat traffic information, and should update their information with CRT's more representative data.

The route crossing at Cappers Lane Viaduct impacts the existing moorings and facilities of Lichfield Cruising Club, and wider impacts affect the work of the Lichfield and Hatherton Canals Restoration Trust. Facilities lost or temporarily displaced need to be replaced with equivalent in suitable locations in a timely manner.

Noise mitigation barriers are shown on the route crossing of Cappers Lane viaduct, reducing transmitted noise. Levels of operational noise of 50-65dB are projected around the viaduct and over the Lichfield Canal (Wyrley and Essington Canal). On the Coventry Canal itself 1030m of canal between the overhead power line crossing NW of Park Lane Bridge and the South Staffordshire railway bridge (beyond which the A38 intrudes) lie in the 55-60dB zone with 300m within the 60-65dB average level. No noise barriers are shown on the viaduct crossings of the Trent & Mersey Canal, either associated with the Phase 2 crossing or the phase 1 link lines running to the WCML. Predictions based on Phase 2 traffic show >70dB under the Phase 2 viaduct crossing, and 1.5km between 55-70dB with levels of 60-65dB being experienced again when crossing under the viaducts beyond Woodend Lock, in an area of previous tranquillity.

Annex SV-004-022 states noise levels at monitoring point 700650 Fradley Junction will see an operational impact change in noise levels from a base of 40dB (day), 36dB (night) by an increase of 16dB (day) and 11dB (night) in year 15- where noise levels double for every 3dB increase.

Plan CT-05-125 shows a triangular 0.6 square kilometre area of land bounded by the A38, South Staffordshire railway, Coventry Canal and WCML being used for a major railhead, a section of the route and a major material stockpile. The operational period of the material stockpile is given as approximately five and a half years in 2.3.39, and the single assessment point for noise is 721029 Kings Orchard Marina, with daytime levels of 54/58 dB assessed. Noise and visual nuisance could be mitigated by constructing a bund of tipped material alongside and a safe distance from the edge of the Coventry Canal at the beginning of the project, in addition to any other measures.

IWA Consultation Response

- Clearance under the temporary rail crossing of the Coventry Canal alongside the South Staffordshire railway must be at least as high as the existing crossing.
- Noise and visual nuisance from the major stockpile alongside the Coventry Canal between Huddlesford and Streethay needs to be mitigated by early construction of a grassed earth bank baffle mound and/or noise fencing along the canal boundary of sufficient height to screen the adjacent earthmoving activities in the temporary material stockpile area. Active management of the temporary stockpile will also be required to minimise noise transmission in accordance with the CoCP.
- The route alternative discussion in Section 2.6.43 dismisses an alternative route proposed by IWA which eliminated canal crossings by the link lines from the proposed Manchester main line to the West Coast Main Line. IWA and CRT have procured a report from Hyder Consulting (UK) Limited, an internationally recognised rail consultant, entitled 'Canal & River

Trust and Inland Waterways Association HS2 - Fradley Junction Area - Alternative Alignment Study Outline Appraisal' whose Executive Summary states:

'Following the Government's proposals for High Speed 2 (HS2) the Inland Waterways Association (IWA) and the Canal & River Trust (CRT) raised a number of objections in relation to the impact of the route on and around the historic canal environs near to Fradley Junction, along the Trent & Mersey Canal near Lichfield. These objections included a request that the HS2 team further review the impact of the route and explore an alternative alignment. The HS2 teams responded but the route was little altered, informing CRT and IWA that there was no scope for further change.

CRT and the IWA appointed Hyder Consulting UK Limited (Ltd) to broadly review the various impacts of the proposed HS2 alignment and to prepare a comparative outline appraisal for a reduced impact alternative alignment that sought to conserve the rich rural, historic and cultural assets of the locality.

Hyder Consulting have undertaken a Permanent Way (P Way) review and outline environmental appraisal of the HS2 Hybrid Bill alignment (horizontal and vertical) and have applied the same criteria to inform an alternative alignment that allows the West Coast Main Line (WCML) connection to avoid the Trent & Mersey Canal thereby greatly reducing the engineering requirements and environmental and visual impacts together with associated costs. In doing so Hyder Consulting found that the HS2 route design speed of 230 km/h was not achievable. The proposed alignment as discussed in this report has been designed to accommodate the 230 km/h value.

The proposed HS2 alignment would significantly affect the historic character and landscape setting of the Trent & Mersey Canal and its enjoyment for leisure and tourism. Four structures would cross the canal in close proximity, one for the Manchester Junction (future Phase 2 spur), two for the vertically separated 'up' and 'down' lines to the WCML connection, and a fourth single structure carrying the combined 'up' and 'down' lines back over the canal 800m NW of the first link line crossing. The alternative alignment would avoid crossing the Trent & Mersey Canal apart from the Phase 2 Manchester Spur.

The Alternative alignment has slightly increased impacts to biodiversity and woodland as it has the potential to require a greater total amount of woodland from designated sites. It would also result in the permanent loss of land at additional sites. The alternative route would result in a lowering of the down line track alignment by the Trent & Mersey Canal which would result in reduced visual impact and noise from within the immediate local area and notably to the Grade II Listed Woodend Lock Cottage, compared to the HS2 alignment.

The overall environmental impact of the Alternative alignment, when excluding consideration of the Trent and Mersey Canal, is broadly neutral and largely similar to the HS2 alignment impacts. However, the overall environmental impact of the Alternative alignment on the Trent and Mersey Canal and its context would be significantly lower than that of the HS2 Route.

The alternative alignment removes the requirement for three permanent crossings of the Trent & Mersey Canal as well as the Pyford Brook Viaducts. In addition to this there would be no need for two temporary bridges over the canal, the overall length of PWay required

will be reduced and the earthworks will be simplified.

Whilst the appraisal undertaken is not detailed and an outline review only, it nevertheless demonstrably sets out the case that an alternative alignment is both feasible and beneficial over the HS2 alignment in all aspects of P Way Engineering, environmental impact, landscape and visual impact, social / experiential impact and broad cost planning.

The Alternative route is technically feasible and it would provide operational improvements in terms of increased line speed. The Alternative route has the potential to deliver c£54m cost savings and it should therefore be adopted by HS2 and implemented from construction. This report has been prepared between November 2013 and January 2014.'

- The HS2 Phase 1 Environmental Statement Volume 5 Appendix SV 001-000 sets out proposals to manage noise nuisance from the project. HS2 expects (amongst others) waterway users whether on boats or towpaths to be exposed to levels of noise above the project-determined SOAEL (Significant Observable Adverse Effect Level) of 65dB (daytime) 55dB (night time), or a 'Major' change in noise levels of ≥ 5 dB because the impact will be transient. In practice these levels could be as high as 90dB for a boat or towpath user passing under a bridge within 15m of a train passing overhead, and represent a change in sound pressure of up to 20dB.
- It is IWA's position, detailed in 'Route Wide Effects' below that this is not acceptable, and further 'best available technology' engineering and mitigation needs to be deployed at canal crossings and in the vicinity of short term moorings to reduce transmitted noise as far as possible towards and below the SOAEL level. This would move towards the UK Government's Noise Policy Aims for a '...situation where the effect lies somewhere between LOAEL and SOAEL.'
- Further noise mitigation on the Cappers Lane embankment is needed to reduce noise transmission around the canal and the Lichfield and Kings Orchard Marinas, where residential as well as recreational boats are permanently moored.
- Noise mitigation is required on the Phase 2 Manchester Spur crossing of the Trent and Mersey Canal, as part of the current design even if it is not fitted until Phase 2 comes into operation, to achieve levels of noise below SOAEL.
- Noise mitigation is required on whatever design is confirmed for the link line connections to the West Coast Main Line, to ensure the Trent and Mersey Canal conservation corridor remains as tranquil as possible using best available technology.
- Noise mitigation during construction activities is also required. Canal and towpath users should not be exposed to indiscriminate noise from uncontrolled construction activities whilst legitimately using the navigation.

CFA 26 Washwood Heath to Curzon Street

There are two main waterway-related impacts on this section. First the provision of a new canal underbridge for HS2 where Saltley Road crosses the Grand Union Canal, and second where the route approaches and widens into the new Curzon Street Station, crossing the Digbeth Branch Canal at Ashted Lock adjacent to the existing Curzon Street Tunnel.

The HS2 underbridge over the Grand Union Canal is shown as a 55m long skew crossing, with two sets of two tracks on it (one set the main line to Curzon Street Station, the other the two tracks rejoining the mainline from the Washwood Heath Depot and 'rising to meet the main line').

The crossing of the Digbeth Branch Canal occurs as the route enters Curzon St Station, and is a 62m length skew crossing. The tracks are shown as 4 wide at this point, with spaces between 3 groups of tracks to allow light down onto the space underneath where the canal runs, and the Ashted Lock sits. The existing railway crossing is just to the south of the new one. Both IWA and particularly CRT have been working to ensure this space is light and open, and results in a major improvement over the existing gloomy Curzon Street tunnel.

IWA Consultation Response

- No details are provided in the ES of the Saltley Canal overbridge, other than that the tracks from the Washwood Heath Depot are climbing up to reach the main line in this area. It is important to ensure the additional canal crossing design is light open and airy, providing a positive waterway space to prevent attracting undesirable behaviour and exacerbating existing graffiti problems. This could be facilitated by a design which provided a space between the two sets of tracks to act as a light well or similar.
- Lock operating space under Curzon Street Viaduct No. 3 should be the greater of 2m from the side of the lock, or 0.5m from the ends of the balance beams.
- Good design needs to be deployed to mitigate the impacts of both the Saltley Canal overbridge and Curzon Street Viaduct No.3, and maximise the positive impressions from the necessary infrastructure. IWA supports the use of CRT's Design Principles for waterway intersections.

Question 4: Please let us know your comments on Volume 3: Route-wide effects.

My comments on Volume 3 are:

Route- wide effects

IWA General Principles for Protection of Waterways Impacted by HS2

The following principles with respect to waterways need to be used to assess HS2's proposals for phase 1 and the limited extensions relating to phase 2 included in this consultation:

- 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 CRT's planned stoppage programmes. IWA welcomes the specific statements about restricting closures and stoppages in individual CFA Reports.
- Waterway gauge - there should be no detriment to the constructed gauge of any waterway due to HS2, particularly in respect of headroom, taking account of any proposed enhancements on freight waterways. Any waterway crossings or other alterations to the waterway should comply with CRT's policy of headroom of 3 metres over water, and 2.75m over towpaths, with a minimum width of 12m for broad and 6m for narrow canals.
- 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.

IWA Position on Noise Affecting Waterway Users

The HS2 Phase 1 Environmental Statement Volume 5 Appendix SV 001-000 sets out proposals to manage noise nuisance from the project. UK government noise policy is discussed as setting out three aims, the first of which is to 'avoid significant adverse impacts on health and quality of life.'

The policy states:

' any receptor forecast to experience an absolute 'end state' exposure from the source that exceeds the relevant SOAEL [Significant Observable Adverse Effect Level] should be identified as being subject, in EIA terms, to a likely significant adverse effect. This would reflect the aim to avoid significant effects on health and quality of life.'

The appendix goes on to set out upper limits for the SOAEL for the project by reference to WHO and UK Noise Insulation regulations:

'For night-time, the World Health Organization's Night Noise Guidelines for Europe²¹ introduced an Interim Target of 55 dB $L_{pAeq,8hr}$ measured outdoors. This is the noise threshold used for category 'C' of the ABC impact criteria at night (refer to section 14 of the SMR) and again can be taken to be a

SOAEL [significant observable adverse effect level]

During the daytime the free-field level of 65 dB $L_{pAeq,0700-2300}$ is considered a SOAEL. This is consistent with the daytime trigger level in the UK Noise Insulation (Railways and other guided systems) Regulations...'

It then goes on to quantify change in noise levels as another aspect of sound from the project which can be identified by receptors as noise, by reference to the table below:

Table 7: SMR Table 33 Airborne sound from operational train or road movements - impact criteria

Long term Impact Classification	Short term Impact Classification	Sound level change dB $L_{pAeq,T}$ (positive or negative) T = either 16hr day or 8hr night
Negligible	Negligible	≥ 0 dB and < 1 dB
Minor		≥ 1 dB and < 3 dB
Minor	Moderate	≥ 3 dB and < 5 dB
Moderate	Major	≥ 5 dB and < 10 dB
Major		≥ 10 dB

Annexes set out the basis for modelling sound generation and transmission from HS2 by reference to HS1, and academic papers on European high speed trains. Annex D2 figure 1 (pg 3) section 1.1.18 compares maximum noise levels from existing high speed trains with HS1 CTRL models, and discusses the impact of improvements in the HS2 rolling stock. From this, a maximum noise level within 15m of an HS2 train is indicated as >90 dB and <100 dB. Safe listening times are suggested elsewhere (Ultimateears.com chart) as 1.5hrs at 100dB.

The Appendix then uses the SOAEL (Significant Observable Adverse Effect Level) of 55dB (night time) and 65dB (daytime) and the modelling described to identify 'receptors' who are subject, in EIA terms, to a likely significant adverse effect. The appendix describes residential and non-residential receptors in this situation.

The Environmental Statement Appendix SV-001-000 Annex G 'Section 1.3 Route-wide receptor specific effects' then makes a statement on Public Rights of Way and locations that have temporary and static moorings or permit occasional overnight stays such as static moorings, camp sites or caravan parks but do not permit long term residential use. Users of such facilities are not considered

to be significantly affected by noise due to construction or operation of the Proposed Scheme due to the short and irregular exposure to noise from the Proposed Scheme, and will only enjoy noise reduction where this is put in place for residential or non-residential receptors in the vicinity.

It goes on to state that permanent moorings are treated as residential, whilst allowing for the lower sound insulation provided by the 'shell' of a boat compared to a house.

On this basis, HS2 expects (amongst others) waterway users whether on boats or towpaths to be exposed to levels of noise above the project-determined SOAEL of 65dB (daytime) 55dB (night time), or a 'Major' change in noise levels of ≥ 5 dB because the impact will be transient. In practice these levels could be as high as >90 dB for a boat or towpath user passing under a low bridge whilst a train passes overhead, and represent a change in sound pressure of over 20dB. This is considered acceptable by HS2, despite the context that without the project going ahead waterway users could still enjoy the current absence of noise without detriment, and in many locations no attempt has been proposed to reduce noise levels with best available technology despite the UK Government's stated policy on noise pollution '... to avoid significant effects on health and quality of life.'

It is IWA's position that this is not acceptable, particularly as all licensed boats may generally moor for up to 14 days at a time at most points on the canal network, and considerably longer at long term moorings and in marinas. Further 'best available technology' engineering and mitigation effects must be deployed at canal crossings and in the vicinity of marinas, short and long term moorings to reduce transmitted noise as far as possible towards and below the SOAEL level. This would move towards the UK Government's Noise Policy Aims for a:

'...situation where the effect lies somewhere between LOAEL and SOAEL. The aim is that "all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur." In this context, the 'adverse effects' are those arising from noise between LOAEL and SOAEL.

The UK Government policy aims do not differentiate between residential, non-residential and temporary receptors in the arbitrary way the Environmental Statement does. IWA has made detailed comments on improvements needed to achieve this position in each CFA potentially affected.

Vertical deviation and clearances for waterway crossings

The Hybrid Bill (Schedule 1 para 1(2)) provides the Secretary of State with powers to vary the final position of the route within defined limits. Vertical limits of deviation provide for upwards deviation of up to 3m, and downward deviation of any amount.

In order for waterways to continue to function as transport routes whether commercial, leisure or a mixture of both minimum clearances for crossings by the HS2 project must be maintained notwithstanding this power to deviate from the vertical clearances detailed in the bill. Clearances historically vary by waterway and usage, and the Canal and River Trust have set a minimum height of 3m over water and 2.75m over towpath under HS2 crossings of the waterways affected in Phase

1 to ensure the necessary minimum is maintained by HS2.

Waterway Design Principles for the HS2 Project

HS2 will have a number of interactions with and impact on waterways as it is constructed and moves into operation. In IWA's experience, these impacts can be significantly improved by good thoughtful design as can the operability and maintainability of the structures both for the railway and the waterway. Canal & River Trust have taken a lead in documenting a series of 'general design principles that guide the post-planning development of HS2 design within the corridor of the waterways.' IWA is very supportive of this work, and believes use of these principles will facilitate good design within the waterway context. Use of these principles should be a requirement of designs with a waterway interface and impact.

Draft Code of Construction Practice

Traffic Management and Canal Bridges

Section 14.2.5 refers to site specific traffic management issues, and includes 'as appropriate..... a list of roads which may be used by construction traffic in the vicinity of the site including any restrictions to construction traffic on these routes'.

Canal bridges, particularly those local or rural bridges not upgraded as part of a highway- often form an important part of the canal heritage setting and are not capable of withstanding current vehicle weights and usage, let alone those of heavier construction traffic. All canal bridges should be considered as 'appropriate' to include for site specific traffic management issues, and be either closed to construction traffic or passively protected from incidental and accidental damage as part of the CCoP.

Construction Impacts on Canal Traffic

There should be minimal disruption to navigation during the construction phase, and any necessary impacts should be integrated with CRT's planned stoppage programmes.

Question 5: Please let us know your comments on Volume 4: Off-route effects.

My comments on Volume 4 are:

No Comments

Question 6: Please let us know your comments on Volume 5: Appendices and map books. You are welcome to comment on one, a number, or all the appendices. Please indicate in your response which report(s) your comments apply to (e.g. the draft Code of Construction Practice).

My comments on Volume 5 are:

IWA Position on Noise Affecting Waterway Users (App SV 001-000)

The HS2 Phase 1 Environmental Statement Volume 5 Appendix SV 001-000 sets out proposals to manage noise nuisance from the project. UK government noise policy is discussed as setting out three aims, the first of which is to ‘avoid significant adverse impacts on health and quality of life.’

The policy states:

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Volume 5 Draft Code of Construction Practice

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Construction Impacts on Canal Traffic

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Thank you for completing the consultation response form. Responses to the consultation will be analysed and used to produce a summary report which will help inform Parliament’s consideration of the scheme.