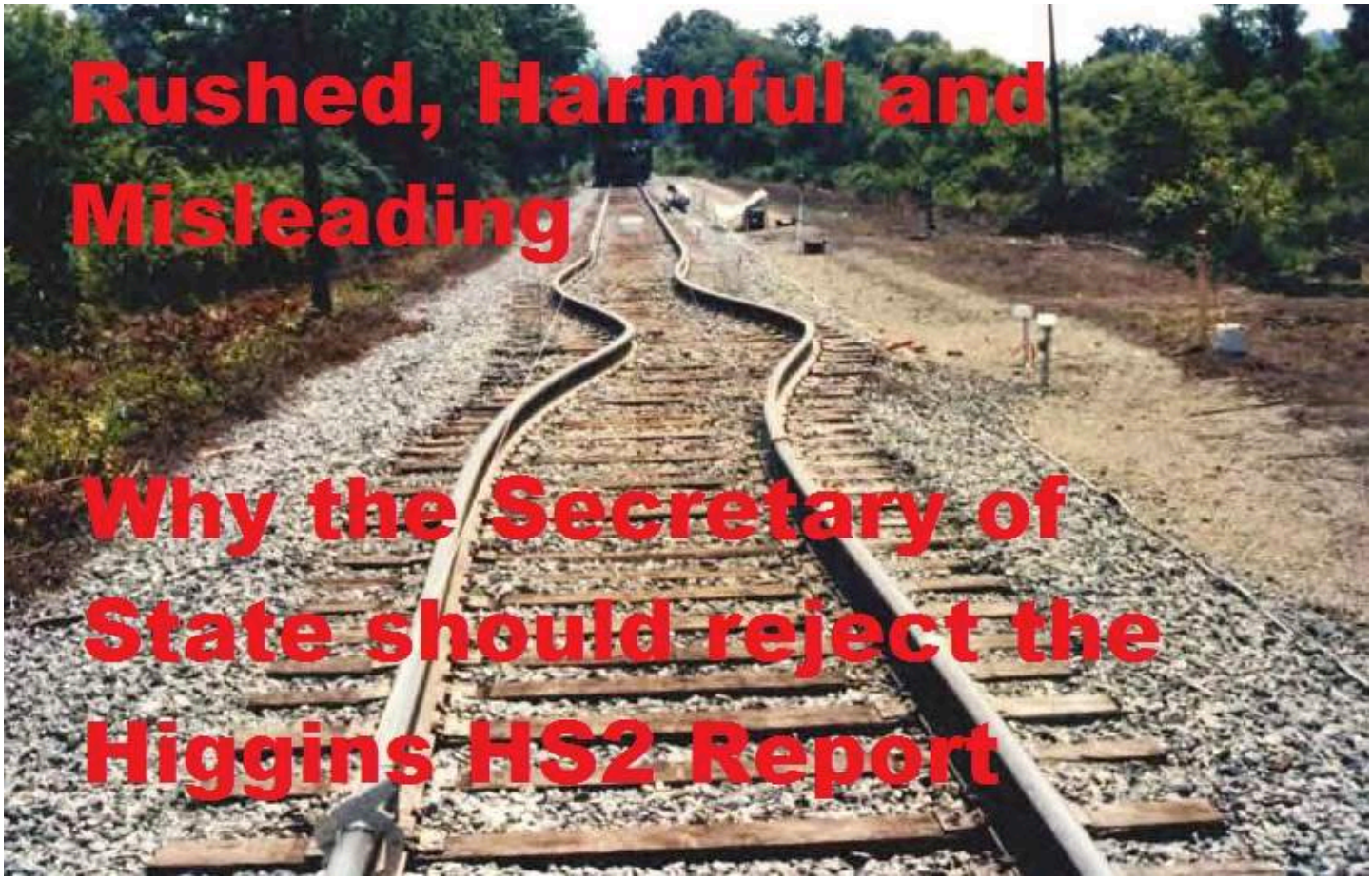
THE HIGGINS REPORT: RUSHED, HARMFUL AND MISLEADING

A REPORT FOR THE SECRETARY OF STATE FROM THE COMMUNITIES OF THE PROPOSED M18 EASTERN ROUTE, INCLUDING

CROFTON, SHARLSTON, HEMSWORTH & SOUTH KIRKBY
BARNBURGH, HICKLETON & MEXBOROUGH
HOOTON ROBERTS & BRAMLEY

2nd NOVEMBER 2016



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INTRODUCTION

This is a report compiled by the communities of Crofton, Sharlston, Hemsworth, South Kirkby, Barnburgh, Hickleton, Mexborough, Hooton Roberts and Bramley. These communities have been working together since Sir David Higgins of HS2 Limited announced his new preferred route proposal on 7th July 2016. The new route proposal would have drastic effects on these communities, and we aim to demonstrate through our research and this report how the new route proposal is unsuitable for all involved parties.

It is the evidenced assertion of our report that the newly recommended M18 eastern route, selected by HS2 Limited on July 7th 2016 Higgins Report, is unfit for consideration by the Secretary of State on account of the untrue, unresearched and misleading statements contained within the report.

The purpose of this report is to set out the overwhelming evidence that the Secretary of State for Transport, Chris Grayling, is being misled by HS2 Limited in its recommendation of the new eastern route as the best choice for the eastern leg 2B from Sheffield to Leeds, with particular reference to the claims that this option would result in:

- Lower costs, such as the claimed overall saving of £1 billion;
- Lower human and environmental impacts including demolitions and noise;
- The best route among all the alternatives;
- And, increased connectivity between northern communities, particularly Leeds, Sheffield, Manchester, Wakefield, Rotherham, Doncaster and Bradford.

In summary, we are accusing HS2 Limited, and in particular Chairman Sir David Higgins, of making false statements to the British government, the British people, and Parliament in the un-evidenced assertions in the report about costs, connectivity, impact and benefits.

We believe that the new M18 eastern route is not fit for purpose. It should be struck out by the Department for Transport as an option, in preference to two alternative routes that were deliberately overlooked, namely the existing HS2 consulted route with a link to Sheffield city centre (saving £534 million), and the HS2 west of Barnsley route 'parked' in 2012, which would save £1.5 billion and has been championed by alternative high speed rail developers HSUK.

We demand that HS2 Limited apply their own standards of design, which they have applied to the Phase 1 and Phase 2a routes, and in particular the stated objective of achieving less than 1 residential demolition for every kilometre of route. We have produced evidence to challenge the central claim of the report that the new route would cost less, be easier to build, have lower impacts, and would have better connectivity than the previously recommended Meadowhall consultation route.

We call on the Secretary of State to consider and accept our report and reject this proposed route on the grounds that the high noise and construction would adversely impact thousands of citizens in South and West Yorkshire, which would simply be unacceptable. Additionally, 350 families would be displaced as a result of residential demolition at a rate that is five times the demolitions within Phases 1 and 2a, and cannot comply with the terms of acceptable sustainable development.

Route calculation based on eastern leg total route of 200km, with estimated 350 residential demolitions & M18 eastern route section of 58km with 350 demolitions

FALSE CLAIMS IN THE HIGGINS REPORT

This section of the report aims to set out and discuss all of the false claims made within the Higgins Report. These include claims by Sir David Higgins and/or HS2 that the 7th July 2016 M18 eastern route proposal will:

1. Have fewer home demolitions than the previous proposed route;
2. Result in a £1bn saving;
3. Result in a lower adverse noise impact;
4. Be at a lower risk from flooding;
5. Build a route through comparatively less populated areas;
6. Be geologically easier to construct, with less risk arising from the legacy of mining activity;
7. Be the best option of a considerable list of possible alternatives;
8. Only affect South Yorkshire;
9. Result in time savings;
10. Be the first time this route has been considered, and therefore a 'new' route;
11. Be presented to the public, particularly affected communities, with the fullest information at the earliest point;
12. Have been decided using the most up-to-date information regarding existing developments along the route;
13. And provide improved connectivity throughout the region.

SECTION 1 - DEMOLITIONS

The most concerning false claim in the Higgins Report is the assertion that the new recommended 7th July 2016 M18 eastern route would involve fewer home demolitions than the original consulted 'Meadowhall' route proposed in 2013. Available figures show the following:

Original consulted Meadowhall 2013 route	169 home demolitions required
New M18 eastern route (2016, originally 'East of Rotherham' 2009)	489 home demolitions required[1]

It has been established that there would be 350 certain demolitions along the route. Within this, demolitions at the newly built Shimmer Estate (Strata Homes) in Mexborough could potentially reach a figure of 212 in this location alone. A total of 489 properties are within 60 metres of the proposed route, meaning that HS2 Ltd's claim to fewer demolitions is untrue.

HS2 Ltd's claim regarding this alleged smaller number of demolitions is particularly striking when we consider that a Freedom of Information (FOI) request in August 2016 revealed that HS2 Ltd did not know the number of demolitions required by this route. This claim, which can be found on page 22 of the Higgins Report, seems to be an attempt to portray a significantly higher impact route as having fewer impacts than the original consulted 2013 route. Moreover, HS2 Ltd released documents showing that this route, which originated in 2009 as the 'East of Rotherham' route, had already provisionally identified many properties for demolition, making it a high impact route. Our research reveals this claim to be false and many feel that this is either a deliberate attempt, by HS2 Ltd, to mislead both the general public and the British government, or is an unresearched guess.

[1] Homes within 60m of the centre of the two-track high speed line

SECTION 2 – SAVING MONEY

The Higgins Report claims that the 7th July 2016 route proposal will have an estimated cost saving of "£1bn" (p.21, p.23).[1] Higgins states "reflecting its less congested nature, this route would also be around £1bn less expensive even when the links to the existing line and the necessary upgrades have been paid for." (p.23).

During a discussion at HS2 Ltd's Hemsworth Information Event (July 2016), we discussed this with HS2 Ltd employee Conrad James, in addition to at a further meeting with Leonie Dubois, also of HS2 Ltd. We requested a breakdown of the cost saving for the 7th July 2016 route. They were unable to provide us with this information.

As a result of this, an FOI request was submitted regarding this matter, and on September 9th 2016 the following information was provided.

HSa Phase 2 — SECURITY CLASSIFICATION - OFFICIAL

PHASE 2B RECONCILIATION - PREFERRED ROUTE A TO Mdl

ESTIMATE SUMMARY — 26-Aug-16

Elemental Analysis of indicative e2bn variance between proposed Mdl Route and Preferred Route A (via Meadowhall)

Ref	Element	Total Variance £m 11Q15
1.0	Land & Property	
1.1	Land & Property	-395.19
		-395.19
2.0	Tunnels	
2.1	Bored Tunnels	-194.95
2.2	Ramps & Portals	-17.36
2.3	Shafts	0.00
		-212.31
3.0	Civil Engineering	
3.1	Cuttings	146.81
3.2	Embankments	-0.39
3.3	Environmental Mitigation	32.07
3.4	Cut & Cover Tunnels	-79.36
3.5	Retaining Walls	25.35
3.6	Bridges	-76.12
3.7	Viaducts	-422.14
3.8	Roads & Paving	121.01
3.9	Utilities	102.09
3.8	Other Structures	-11.88
3.9	Emerging Issues	24.27
		-138.27
4.0	Stations	
4.1	E Midlands Hub (Toton)	0.00
4.2	Sheffield Meadowhall	-336.73
4.3	Leeds	0.00
4.4	Manchester Airport	0.00
4.5	Manchester Piccadilly	0.00
		-336.73
5.0	Depots and Stabling	
5.1	IMD East (Staveley)	43.79
5.2	RSD East (New Crofton)	0.00
5.3	RSD East (New Crofton Approaches)	17.40
5.4	IMD West (Crewe South)	0.00
5.4	RSD West (Crewe North)	0.00
5.4	Other Facilities	0.00
		61.19
6.0	Railway Systems	
6.1	Permanent way	-4.05
6.2	Signalling	86.71
6.3	Telecoms	6.87
6.4	Electrical Contact Systems	1.35
6.5	Electrical Distribution Equipment	21.97
6.6	Station & Depot Systems — incl. in (4.0) & (5.0) above	0.00
6.7	Tunnel Systems — incl. in (2.1) & (3.4) above	0.00
		87.84
7.0	On Network Works	30.94
8.0	Indirect Costs	-52.77
	GROSS POINT ESTIMATE TOTAL	-985.30

This disclosure itemises £909m of expected savings from the new route out of a total of £985m overall savings. Through analysis of this cost breakdown, we have discovered that the decision to no longer use Meadowhall, but rather Sheffield city station, is key to the cost savings identified. When costs are broken down, it is shown that £336.73m of the saving comes from the omission of the Meadowhall station. A further £395.19m would be saved on 'Land & Property'. In total, this would equate to a saving of £731.92m, leaving £253.08m of actual 'route' savings made up from remaining categories within the breakdown provided through the FOI disclosure.

Contrary to the figure of £985m produced by HS2 Ltd, The National Audit Office calculates that the estimated saving for the new route would be £768m.

There is further evidence from HSUK, alternative high-speed rail consultants, to suggest that there would be no cost reduction between the Meadowhall 2013 route and the M18 eastern route of 2016. This is because HS2 has not yet adequately assessed the cost of compensation, engineering, and mitigation measures that will be required for this route.

Our analysis of the cost of constructing a hybrid of the 2013 consulted route, without a station at Meadowhall, with a spur through Sheffield, and utilising a different location for the depot, would save £534 million. This route is detailed further in Section 7.

Two significant suggestions include a west-of-Barnsley option (amended by HSUK), which would provide an overall saving as part of an HS2/HS3 package, as well as lower impacts (10 estimated residential demolitions), a significantly faster journey time, and connectivity over the M18 or Meadowhall route.[2]

The second suggestion refers to the HS1A proposal of 2014, which has now enhanced into HS1X that would offer a West Coast Mainline (WCML) low cost, low impact, fast rail and freight line from London to Manchester, via Birmingham, which would address the capacity issue on that particular route. This would be combined with a low cost, low impact, high-speed rail extension to HS1 from East London to Leeds City, with a classic compatible service to Sheffield and Manchester. Due to the fact that this route would avoid Areas of

[2] www.highspeeduk.co.uk

Outstanding Natural Beauty (AONB) and would not be subject to tunnelling requirements, it would offer a shorter route, quicker journey time and the predicted cost would be 50% of the equivalent HS2 route cost. By adopting existing rolling stock, combined with HS1 technology, and considering that this is a route of lower impact, the build time would also be reduced.[3]

[3] www.hs1a.yolasite.com

SECTION 3 - NOISE IMPACT

The Higgins Report states that the 7th July 2016 route proposal would "result in less overall expected noise impact" (p.22).

The cost breakdown referenced in the previous section confirms that an extra £32.07m would need to be spent on 'environmental mitigation' along this route. The reason for including this figure is that the route passes through densely populated areas. It is therefore clear that this route requires additional expenditure in order to deal with the issue of noise.

In March 2012, Higgins considered an 'East Of Rotherham' option, this being largely the same as the *new* 7th July 2016 M18 Eastern option. The 2012 route option would impact Cudworth and the proposal therefore included tunnelling under Cudworth in order to mitigate the adverse impact on that community.

Within the 'Options for phase two of the high speed rail network appraisal of sustainability', situated within appendix 3, this route was rejected, partially on the grounds that "residential properties would have experienced noise impacts at Bramley (where the route would have been in cutting) and in Swinton and Mexborough." The report goes on to state: "potentially high noise impacts would have remained after mitigation". It is therefore evident that Higgins considered that the noise impact that this route would bring to the South Yorkshire communities would be so severe that the route could not be approved.

The 7th July 2016 M18 Eastern route proposal differs from the previous route in that it does not pass under Cudworth, and instead it takes a route past South Elmsall, Hemsworth, Kinsley, Fitzwilliam, then through Crofton village, passing Sharlston, New Sharlston and Warmfield to meet the consulted route at Altofts through to Leeds. The route therefore passes alongside or through a number of established and densely populated communities.

There is no proposal within Higgins' 7th July 2016 report to mitigate the adverse noise impact on those West Yorkshire communities by tunnelling, and although there may not be a need to do so at every point, there is clearly a need to do so through the village of Crofton. In fact, the design through Crofton is such that noise mitigation measures may not achieve a satisfactory result, and if this proves to be the case, the route would breach HS2 Ltd's own design criteria. This inability to adequately mitigate noise was identified in 2012 by HS2 regarding the then 'East of Rotherham' route, which has become the M18 eastern route. The issue of noise is a major concern to all communities along the route and HS2 Ltd is not addressing the matter in a responsible manner as evidenced by Higgins' simple dismissal of the issue by claiming that the route 'would result in less overall expected noise impact'.

Higgins' claim could not be further from the truth. The M18 Eastern route would produce adverse noise impacts for not only those communities in South Yorkshire that would have been affected by the 2012 East of Rotherham route, but would also affect 15,000 people residing in close proximity to the route and proposed rolling stock depot in West Yorkshire. Furthermore, many communities would suffer additional noise impact created by the classic compatible spur to the south of Sheffield, the northern spur from Sheffield to South Kirby if approved, and the proposed South Yorkshire parkway station with all that it would involve in terms of improvements to existing road and rail networks.

We anticipate that operational and construction noise from this railway will be severe. In an attempt to confirm or deny this, and following conversations with HS2 Ltd employees who were unable to divulge any information regarding noise, various individuals have submitted FOI requests to HS2 Ltd for information regarding noise impact. The release of this information has been repeatedly denied by HS2 Ltd on the grounds that it is not in the public interest and that "the request for information is manifestly unreasonable". We believe that our requests are not unreasonable and that we, as affected residents, are entitled to know what the noise

impact will be, and that the government should also be aware of the noise impact on British citizens before making a final decision regarding the suitability of this or any route.

We reiterate the fact that this route – now referred to as the M18 eastern route, but previously referred to as the 'East of Rotherham' route – was previously rejected by HS2 Ltd in March 2012 on the grounds that the noise impact would be too severe.

SECTION 4 – FLOOD RISKS

The Higgins Options Report discusses the potential impact of the Sheffield Midland station option on flood risks. In the report, it is stated, "the high speed line would need to enter a tunnel just south of the station, and both the station and the tunnel portal itself would be in the floodplain of the River Sheaf and Porter Brook." The report then goes on to state "this would create a serious risk of flooding" (p.22).[ii] Despite the report also acknowledging that "any flooding would therefore affect HS2 services across the Eastern leg with implications for the long-term reliability of the service", the 7th July 2016 route *would use* this station, meaning that the reliability of this route must be called into question.

Further information on this is unclear. Higgins does not explain how this flooding risk would be avoided if his recommended 'classic compatible spur', also to the south of Sheffield and also terminating at Sheffield Midland station, was to be adopted instead. On page 39 of the Options Report, a comparison table between routes and stations describes the 7th July 2016 route as having a "reduction in flood risk". This is not explained at any point throughout the document and the claim is therefore not substantiated within the report.

Furthermore, there is substantial evidence that the 7th July 2016 line would be at serious risk of flooding throughout places other than Sheffield, specifically Mexborough, Denaby Main, Thurnscoe and Hickleton, owing to the fact that these areas are already flood-prone. Evidence of previous floods can be found through a simple online search, or more specifically in the Doncaster Metropolitan Borough Council 'Flood Events' document, which can be found online. Neither of Higgins' reports make reference to the cost of any potential additional flood defences that may be required in these locations, should this route be approved.

SECTION 5 - 'COMPARATIVELY LESS POPULATED' AND 'GEOLOGICALLY EASIER TO CONSTRUCT'

On page 10 of Higgins' CS550A Report, also released on 7th July 2016, it is stated that this route, which would not require a station at Meadowhall, would run through "comparatively less populated, and geologically easier" areas. This is due to several factors.

It is particularly interesting that the new route, with the Meadowhall station removed, now avoids a new estate of approximately 4000 homes.[iii] Sheffield City Council was concerned that the 2013 Meadowhall option would "seriously impact" upon this new development, named the Waverley Community Development, particularly in terms of noise impact.[iv] The consultation report from this route tells us that "over 1000 proposed homes may be affected" if the route had been to go ahead.[v]

Although this may not have been the only factor in the 2013 Meadowhall route being discounted, it is clear from the Options Report (page 39) that homes ('proposed') and the noise impact upon those homes were considered important in Sheffield. It is alarming, therefore, that Higgins and HS2 have not given the same consideration to the communities throughout South *and* West Yorkshire presenting this report.

There are a significant number of homes along the 7th July 2016 route that will be either demolished, placed under a Compulsory Purchase Order (CPO), or will be blighted by the line and/or the depot. These numbers far exceed the number of 'proposed' homes on the Waverley development that would have been adversely affected had the 2013 Meadowhall option been carried forward as the favoured route.

Sheffield City Council clearly was not willing to put up with the 'pain' that HS2 would have inflicted upon its citizens and communities, yet it wants the gain that it claims HS2 will bring. Furthermore, by lobbying for the route to be changed, the Council has made way for HS2 to inflict this same 'pain' on other communities, to the east of Sheffield and through to Leeds, who will receive none of the gain from HS2 but will suffer regardless.

In addition to Higgins believing that the 7th July 2016 route would be 'comparatively less populated', he also believes that the route would be 'geologically easier' to construct (page 10 of his CS550A Report). In the Options Report (page 39), it is stated that the 7th July 2016 M18 eastern route "avoids known mining areas". This is also referenced on page 33, where Higgins states "our work to date leads us to expect fewer geotechnical challenges on the M18/Eastern Route alignment. This includes the risks introduced by passing over old mine workings, landfills and other former industrial sites."

This is simply untrue.

The 7th July 2016 M18 eastern route does not 'avoid known mining areas'. This route is peppered with former mining sites, including in particular Yorkshire Main Colliery (Edlington), Kilnhurst Colliery, Cadeby Main Colliery, Denaby Main Colliery, Manvers Main Colliery, Barnburgh Main Colliery, Houghton Main Colliery, Hickleton Main Colliery (merged with Goldthorpe Colliery), Highgate Colliery, Frickley and South Elmsall Colliery, Riddings Drift Mine, South Kirkby Colliery, Kinsley Drift Mine, Fitzwilliam Main Colliery, Nostell Colliery, Carmill Lane Pit, and New Sharlston Colliery. Higgins' claim that the route 'avoids known mining areas' is therefore simply untrue and misleading, and it is alarming that HS2 Ltd would make such a claim when the proposed route runs through the heartland of Yorkshire mining industry. This claim must call for further investigation, as it must either have been made through a deliberate attempt to lie to the public, or through sheer incompetence by HS2 Ltd's engineers and/or employees.

The Head of HS2 Ltd Route Engineering, Alasdair Hassan, on 2nd August 2016 during a visit to Crofton, advised Crofton Against HS2 Technical Group that the 'new' or, more accurately, the resurrected M18 east of Rotherham route, was currently just a 'line on the map' and had not been subject to any examination of topography, LiDAR measurement or analysis of ground conditions.

HS2 Ltd's CS550A document states, on page 22, "The route to the east, initially parallel to the M18, would avoid not only the complexities associated with the Meadowhall viaduct… it would also carry much less risk from the legacy of mining in the area". This raises questions about the nature of the complexities associated with the Meadowhall viaduct. It also questions either the competence or the integrity of HS2 Ltd as an organisation that is prepared to change a route and take it through even more extensive former mine workings and then make a directly opposing statement. Furthermore, it calls into question the workings of an organisation that is prepared to abandon a route that has been planned for a number of years and has been subject to extensive research *and* a public consultation in favour of a route that, by HS2 Ltd's own admission, has not yet been subject to extensive research.

In order to avoid the 7th July 2016 M18 eastern route, it would be entirely possible to construct a spur from the 2013 Meadowhall route option serving Sheffield city centre in exactly the same way. Higgins' reports fail to recognise or include this option.

The complexities associated with the Meadowhall viaduct, to which HS2 Ltd refers, may be founded upon those detailed in an article that was published in The Sheffield Star (among others) in May 2016.[vi] This article relates the experience of Adrian Millward, the former Assistant City Engineer for Sheffield, when building the Don Valley Sewer. Mr Millward acknowledges that he is neither a geologist nor a construction expert but, in making a statement that the maintenance of Tinsley viaduct (at Meadowhall) has cost 16 times more than its original construction cost, he creates a link between structural problems with the M1 Tinsley viaduct and the ground conditions in the Meadowhall area. He further states that the likely maintenance costs of HS2 could significantly exceed those of initial construction, making the same parallel.

This, however, is emphatically not the case. The structural improvements to Tinsley viaduct, and their associated costs, were attributable to fundamental structural deficiencies in the original design that had led to failures elsewhere in the early 1970s. The high costs of upgrading the box section structure were partly as a result of working on an existing and operating structure, a fact which was verified by Peter Sandham, a Structural Engineer for West Riding County Council at the time of the construction of this viaduct.

Although this may not be the only reason, it is reasonable to suggest that these issues, which were raised by Millward in May 2016, could have had an effect on HS2 Ltd's sudden decision to change their consulted 2013 Meadowhall route. Examination of British Geological Survey Borehole data for the Don Valley area does admittedly confirm that poor ground conditions exist at Tinsley. There is no reason to doubt the veracity of Millward's experience, and this is not surprising if we consider the fact that this is a riverbed. Any difficulties associated with constructing the 2013 Meadowhall station and route can, however, be overcome by careful design and adequate piling, and all would be well above mining levels. Indeed, the extent of development in and around the Meadowhall area suggests that construction here, despite geological faults, is certainly achievable. Higgins states of the Meadowhall station: "it is constructible".

Regarding connectivity, Meadowhall is directly parallel to the M1 motorway *and* has its own rail and tram stations, as well as bus services. This demonstrates that, as a hub, Meadowhall is a far superior option to a station situated within the centre of Sheffield, particularly due to the fact that Sheffield city centre is harder to access, particularly by road, for the wider community.

With specific reference to mining activity in the Crofton area, where a rolling stock depot and five railway lines are proposed, deep coal mining has been carried out under 70% of the district in a total of 12 seams, and opencast mining in 4 seams. This is confirmed by a British Geological Survey technical report WA/93/56 (published in 1993 and available from the library of the National Mining Museum). It states that early mining here – shallow audits, shafts and bell pits are largely undocumented, and little information exists on the methods and location of underground workings. The document states, in section 7 on geological hazards, that 'although most shafts have probably been capped at the surface, they may be open below, and their condition should be investigated before any development takes place.

The document goes on to discuss old pillar and stall workings, confirming that ‘eventual ground stability problems above such workings will arise due to roof collapse, pillar failure, floor heave, or a combination of these factors… The unpredictable nature of the mechanisms of failure may expose the nature and timing of subsidence difficult to predict. Progressive deterioration means there may be a subsidence delay of over 100 years’. The document continues with a warning that ‘recent boreholes outside the known workings of the Sharlston seams have encountered mining voids’. This report covers an area of five kilometres by five kilometres, and includes Crofton, New Crofton, Walton Colliery, Anglers (Wintersett), Nostell Colliery and Moorhouse. Considering that the 7th July M18 eastern route is peppered with former mining areas, HS2 Ltd is clearly either ignoring or underestimating the scale of the problems that former mining activity present, and there is a clear need for the company to undertake a thorough investigation of the geology along this route.

Furthermore, HS2 Ltd’s lack of research into the mining activity along this route means that there would be yet another set of potential costs (in addition to any additional flood defence costs) when inevitable geotechnical challenges arise during the construction process. This calls into question the supposed cost savings associated with selecting this route as the preferred option.

SECTION 6 - BEST OPTION OF MANY ALTERNATIVES

In Higgins' Options Report, on pages 38 and 39, there is a comparison table discussing four different station options and their associated routes. This table presents the 7th July 2016 route as the best option, despite also containing several claims that we have already proved to be unsubstantiated earlier in this report. We therefore consider Higgins' comparisons to be unreliable.

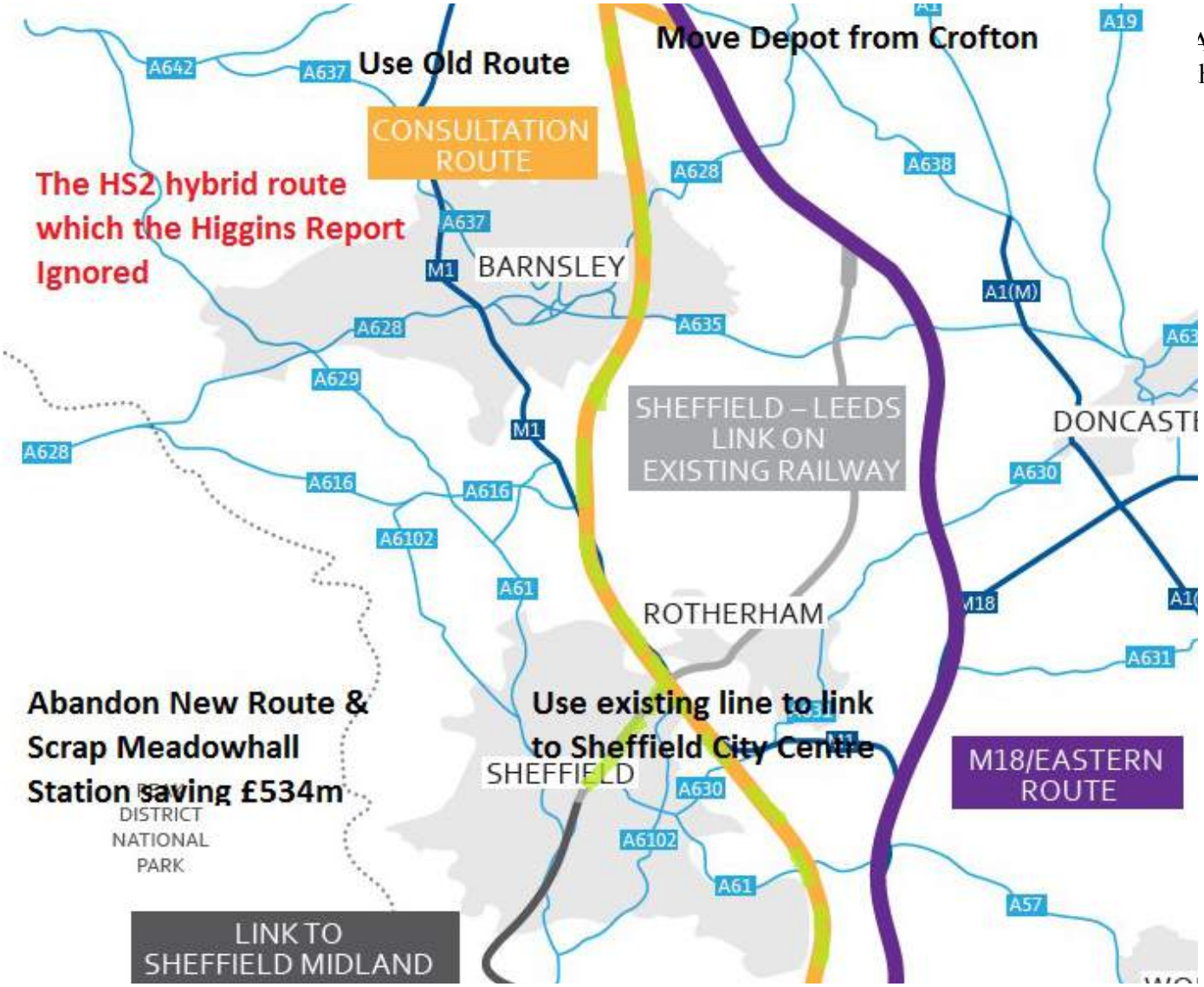
In addition to the four routes proposed by Higgins, we have identified (in association with various different organisations) a number of alternative route proposals that would offer the lower cost that is of great importance to Higgins and HS2 Ltd, as well as providing a high-speed rail route that is fully integrated within existing rail networks.

The first of these alternative routes ('Alternative Route 5') is proposed by High Speed UK (HSUK). This route would use the M1 corridor to the west of Mexborough and Crofton.

The next alternative route – number 6 – is proposed by HS1A. It involves constructing the high speed through a Lincolnshire corridor to the east of Mexborough and Crofton.

A basic map, provided by HS1A on their website, which shows the route across the country from Leeds to London.

Crofton Against HS2 proposes Alternative Route 7 which is a hybrid route combining the 2013 Meadowhall route with a connecting line into Sheffield city centre, and a relocation of the rolling stock depot to the existing disused depot at Healey Mills (near Horbury, Wakefield), with a Parkway Station serving the wider South Yorkshire community.



At the time of publication, no map is available for either of the following routes, however they are detailed below.

An eighth alternative route is proposed by the community of Mexborough and involves bypassing Mexborough to the east of the community.

The final alternative route is proposed by the community of Crofton and simply includes constructing a series of tunnels underneath Crofton, Mexborough, Bramley and Hickleton to avoid the adverse impact that this railway would bring to these communities in particular.

It is also important to consider that the location of the Sheffield station is significant to potential routes. By placing the station in the centre of Sheffield, the wider communities in South Yorkshire would have to travel into Sheffield city centre by bus, road, tram or rail to then be able to use HS2 services. At the moment, there are existing trains serving these wider communities such as Virgin East Coast services on which residents in Doncaster can simply step onto a train at Doncaster, and step off that train in London. Considering that existing services would be cut if HS2 was to proceed, the claim that the Sheffield city centre station is the best station

(and therefore route) option is inaccurate, as it does not serve the wider communities in South Yorkshire. The original proposal to site the station at Meadowhall would allow the people of Sheffield *and* the wider community in South Yorkshire to more easily utilise HS2 services than the city centre station options.

Furthermore, HS2 Ltd wrongly claims that all possible alternative schemes and routes were examined in 2016 prior to the choice of the four selected route options discussed in Higgins' Options Report. In the two-month of period of route sifting, no consideration was given by HS2 Ltd to the obvious Meadowhall hybrid route option, nor did they consider external schemes proposed by organisations such as HSUK or HS1A.

We believe that in contrast to the two-year route selection sifting process, undertaken between 2010 and 2012, on this occasion a simple financial analysis of route cost was the main driver that led to the selection of the 7th July 2016 M18 eastern route.

Given the spurious nature of Higgins' claimed £1 billion cost saving for the Sheffield spur/M18 eastern route proposal, HS2 Ltd's calculation of the costing for the other station options in Sheffield at both Midland and Victoria must be brought into question. We conclude that not only has Higgins failed to thoroughly investigate all possible alternatives, but also that any cost estimates (both saving and spending) should be regarded as unreliable.

SECTION 8 – 'ONLY AFFECTS SOUTH YORKSHIRE'

On page 22 of Higgins' CS550A report, with reference to the proposed M18 Eastern route, he states 'there would be an impact on a new housing development between Mexborough and Conisbrough, some existing communities and impact on the landscape in parts of the Rother and Dearne Valleys.' It is therefore clear that Higgins has considered the impact that the M18 Eastern route would have on the communities of Mexborough, Conisbrough and those in the Rother and Dearne valleys, notwithstanding the fact that he has significantly *understated* the severe adverse impact on those communities in terms of the number demolitions etc., as detailed elsewhere in this document.

Higgins has failed to mention the severe adverse impact that the M18 Eastern Route would have on communities to the South and South East of Wakefield, West Yorkshire and in particular the severe adverse impact that his proposal would have on the village of Crofton, near Wakefield.

The 7th July 2016 proposal includes routing the high speed line through the village of Crofton in close proximity to a large established community of 6000 people. It includes the construction of a 1.5 mile long rolling stock depot in Crofton that would operate 24 hour per day, 7 days per week. The plans include the construction of 3 additional tracks connecting to the depot that would be built along one side of the village and parallel to the two elevated high speed lines. These connecting tracks would take a semi circular route around the southern end of the village feeding into the vast rolling stock depot to be constructed along the other side of the village. In addition to the timetabled high speed services running through the village at speeds in excess of 200 miles per hour, trains would also run through the village throughout the night and early hours of the morning on the depot feed tracks. The consequences of this proposal for the people of Crofton are dire.

It is astonishing that Higgins has failed to mention this within his report. It is clear that the 7th July 2016 route proposal has severe impacts in both South *and* West Yorkshire and Higgins' failure to acknowledge this adverse impact again confirms either incompetence or a desire by HS2 Limited to distort the true picture.

Residents from the village of Crofton have written to the Secretary of State for Transport to express their concern at these proposals but the replies received from his Department fail to acknowledge the blight that has been brought to Crofton and the wider Wakefield area and instead multiple references to South Yorkshire are made within the replies. Higgins' failure to mention and describe the adverse affect in West Yorkshire is misleading politicians into believing that the route *only* impacts in South Yorkshire.

In 2010, the Wakefield Express published an article concerning a proposed 'Nine Lakes Forest Park' to be situated between Wakefield Road at Featherstone and Barnsley Road at Newmillerdam. This was to have been "of regional importance" and would have boosted the "regeneration, economies and employment of nine former mining settlements", including Sharlston, Fitzwilliam, Havercroft, Ryhill and Crofton, all of which would be affected by HS2.[vii] Instead of this nature-based attraction, predicted to draw in 10-15 million people per annum, the area now faces the destruction of this natural environment and the permanent blight that HS2 would bring, with no benefit to the Wakefield district.

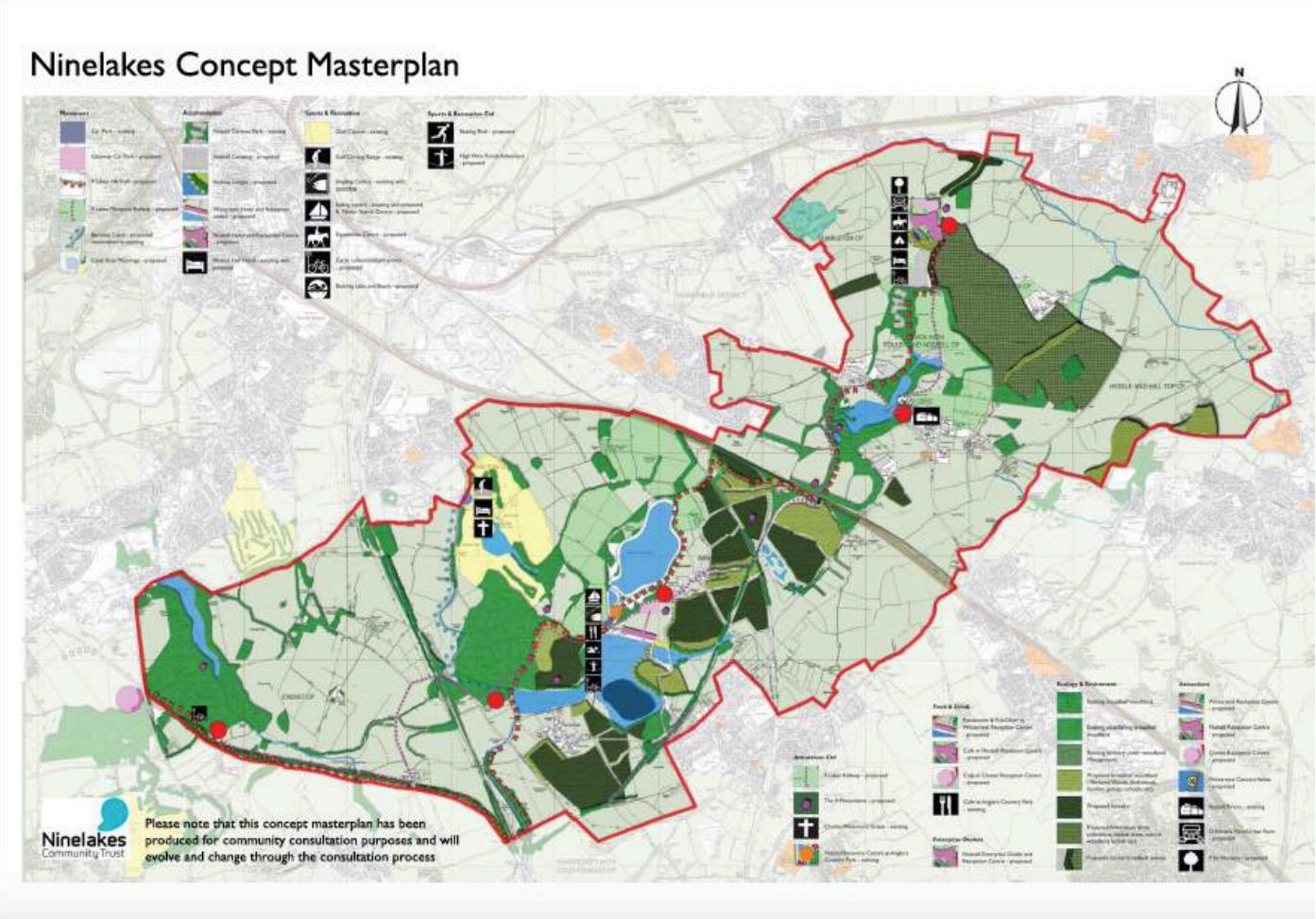
This 'Nine Lakes' project would have provided the Wakefield district with:

- Access to nine existing lakes and reservoirs within one natural development;
- A 14km cycle route and bridleway;
- Incorporation of Nostell Priory, Purston Park, Anglers Country Park and Haw Park Wood;
- Several hotels, restaurants and cafes;
- An innovative forest planting scheme;
- And, watersport facilities, an open air bathing lagoon, inland beach, miniature railway and nature trails.

Managing director of the project, Adrian Spawforth, described the project as aiming to "get people from outside the district coming for long weekends and conferences and for residents to realise what is on their

doorstep and use it instead of travelling elsewhere." This would have benefitted the area economically and helped to put Wakefield on the map as a city worth visiting. HS2 would do the opposite of this, providing no economic benefit and destroying or blighting many of Wakefield's natural attractions.

The following map details the Nine Lakes development plan.



SECTION 9 - TIME SAVINGS

On page 12 of the Options Report (1.5.3), Higgins includes an illustration of the current fastest journey times between cities in the north of England. Many of these 'fastest' journey times are in fact incorrectly stated. The following table details the degree to which Higgins has overstated these times.

Journey	Higgins' claimed fastest journey time (minutes)	Actual fastest journey time[4] (minutes)	Difference in time (minutes)
Newcastle-upon-Tyne to Leeds	87	80	7
Hull to Sheffield	86	80	6
Hull to Leeds	55	54	1
Leeds to Sheffield	40	39	1
Leeds to Manchester	49	48	1
Sheffield to Manchester	48	47	1
Sheffield to Manchester Airport	73	72	1
Manchester Airport to Liverpool	65	51	14

Additionally, Higgins states that the journey time between Leeds and Sheffield is the *fastest* journey time and is *not* a frequent service. On weekday mornings, there are six services per hour between Leeds and Sheffield, and the fastest journey occurs at the rate of one train per hour. Higgins' illustration clearly overstates the current fastest possible journey time between destinations in the north of England. This has either been done in error, which could indicate a great deal of incompetence on the part of HS2 Ltd, or it has been done deliberately. Either way, any calculations, costings, and reports that HS2 Ltd has produced using their stated current fastest journey times from the illustration must also be incorrect and therefore in need of correction.

It is therefore clear that this is another example of Higgins' 7th July 2016 reports containing erroneously or purposefully inaccurate 'facts' and figures. Higgins implies, within the CS550A report (page 7), that journey time is of the essence, stating that 'Every minute lost, or gained, on the timetable does not just permanently affect passengers to those destinations, it also adds or subtracts to the overall business case for HS2 as a whole, and the Eastern leg in particular – and, therefore, the benefit to the nation as a whole over the lifetime of the railway'. In order to justify his figures, Higgins has based his calculations on a false set of existing fastest journey times and it could be argued that he has exaggerated the time saving benefits that HS2 would bring.

As has been cited in numerous studies, many people now use video conferencing, work from home and/or work on trains using laptops, tablets and Wi-Fi, meaning that the economic benefit of high-speed, intercity train journeys has been overstated by HS2 Ltd. In fact, the 2014 National Travel Survey states that 75% of the distance covered during a commute is by car, with only 9% being covered by rail travel. Furthermore, 65% of commutes are undertaken by car, with only 10% undertaken by rail travel.[viii] This proves that business travel, a major factor in the economic and business case for HS2, is dominated by car travel.

All of the above therefore brings into question the entire premise of the business *and* economic cases for HS2.

[4] According to the National Rail Enquiries timetable for the week commencing 29th August 2016

SECTION 10 - M18 EASTERN ROUTE AS A 'NEW' ROUTE

On page 11 of the CS550A report, Higgins states that the 7th July 2016 M18 eastern route is a new route, saying, "I recognise that this [HS2] will impact those who live along this new M18/eastern route". Higgins is incorrect.

This route is largely identical to a previously rejected 'East of Rotherham' route from 2012. On page 200 of a previous report, dated 29 March 2012, Higgins details this 'East of Rotherham' route. He clearly states that the route would be "challenging to construct, would impact on a number of SSSIs and would require more demolitions than comparable routes".

Furthermore, in a report by HS2 consultants ARUP (also March 2012, page 243), it is stated that:

> *"The consequence of these routes would be that they would not directly serve Sheffield and access could only be achieved by a spur off these routes, adding to the capital cost through additional route length. Journey times to central Sheffield would be less competitive than a direct route. There would be potential for placing an intermediate station on a through route but this would be remote from the urban areas where demand is concentrated, and these station options were ruled out."*

At the Mexborough information event, held by HS2 Ltd in July 2016, an HS2 engineer described this route as being one that had been "dusted off" by HS2, again confirming that the 7th July 2016 M18 eastern route is *not* a new route.

It is clear that this route has been proposed using old maps that are now 6-7 years out of date, and that a check of current mapping was done very late in the day, too late to abandon the route choice, with HS2 failing to identify many residential properties in the path of the route on the maps released to the public.

It is astonishing that Higgins is now recommending this very route, and is claiming that it will bring cost savings, faster journey times and can accommodate additional stations, when all of these things were rejected in ARUP's March 2012 report.

SECTION 11 - PROVIDING THE PUBLIC WITH THE 'FULLEST INFORMATION'

On page 11 of the CS550A report, with reference to the M18 eastern route, Higgins states that he recognises that "those affected will want as much information as soon as possible, both about the actual route and the compensation they will receive. That is a legitimate concern and HS2 will work with government to address both points as a matter of urgency."

Despite this, information events held by HS2 Ltd were lamentable for providing information about the adverse impact that the route would bring in terms of compulsory purchase of homes and buildings, demolition estimates, noise impact, environmental impact, safeguarding, construction impact, effects on existing transport systems, estimated usage of the service and design of the scheme, with different employees giving directly conflicting information across several different events throughout both South and West Yorkshire.

Concerned residents, community groups and parish representatives have tried to engage with HS2 Ltd in a number of different ways but any replies received from HS2 Ltd are of poor quality and any detailed replies contain misleading information or imply that they do not have the information at this point in time. This has resulted in residents being forced to pursue Freedom of Information requests in order to obtain information that HS2 Ltd *should* be providing as a matter of course. To add insult to injury, HS2 Ltd refuses to provide information, stating that 'it is not in the public interest' and that requests regarding noise impacts in particular are 'manifestly unreasonable'.

HS2 Ltd states that further information will be published *after* the Secretary of State for Transport's preferred route announcement this autumn. This is a matter of great concern and is grossly unfair. We contend that the Secretary of State for Transport should be in possession of all relevant information in order to make an informed choice about his preferred route. Currently, he is unable to do this, as HS2 Ltd does not view important information as being 'in the public interest'.

Furthermore, councillors, MPs and residents have been made to wait a minimum of 20 days for formal replies to FOI requests, but local media and other groups have been provided with a 'fast-track' information service by HS2 Ltd for the purpose of promoting this scheme.

In July 2016, HS2 Ltd misadvised the media in West Yorkshire that the M18 eastern route proposal did not affect West Yorkshire. In September, HS2 officials visited residents in Crofton, claiming that Wakefield Council had selected New Crofton from a selection of six possible locations for the depot. They claimed that the council had done this because New Crofton was "the least important" of the six options, a fact that Wakefield Council strenuously denies.

Families whose homes would be demolished to make way for the M18 eastern route discovered this by chance viewing of an HS2 map, through media reports or through information obtained from neighbours and fellow residents of their communities. It is shameful that HS2 Ltd did not provide these people with this distressing information themselves, but rather allowed such significant news to be shared and provided by third parties.

It is clear that HS2 Ltd is not engaging with the public and is not behaving in a fair, reasonable or professional manner in its dealings with the people of affected communities, despite Higgins himself recognising the need for this to happen 'as a matter of urgency'.

SECTION 11 - IMPROVED CONNECTIVITY THROUGHOUT THE REGION

Throughout the CS550A report, Higgins makes several references to the need for improved connectivity. HS2, as a stand-alone option, is not compatible with existing rail services as the speed at which it would operate prevents its integration within existing networks. Essentially, the M18 eastern route connects only three points on the map – Leeds, Birmingham and London. The proposed Sheffield spur is not fully integrated within the HS2 route and the proposals for additional stations in South Yorkshire and at Chesterfield would provide only limited connectivity benefits for the wider population.

The connectivity provided by the existing East Coast mainline is far superior to the connectivity that HS2 would provide. If connectivity is the primary aim of HS2, connecting only three points on a map cannot be regarded as meeting this aim. HSUK has proposed an alternative high-speed national network linking all principal cities. In terms of connectivity, their scheme is also superior to that of HS2. Appendix 1 includes a series of analyses carried out by HSUK testing the connectivity that HS2 would provide against the connectivity that HSUK could provide.

At the time of publication, trains running between London and either Wakefield, Doncaster or Bradford are direct with no changes along the journey. These trains provide connectivity not only between the point of departure and the point of arrival, but also many other stations along the route. It is likely that HS2 would result in these services being reduced in favour of HS2 services that do not allow for the same level of connectivity.

CONCLUSION

In conclusion, we as a collective believe that the 7th July 2016 M18 eastern route proposal is unfit for purpose and our research substantiates this belief.

Having now read our report, we call upon the Secretary of State for Transport, Chris Grayling, to reject the 7th July 2016 M18 eastern route proposal on the basis that this route is unresearched, does not meet the estimated cost savings, is not the most suitable route for this particular section of HS2, does not increase connectivity and would be geologically difficult to construct, and would leave residents of affected communities with blighted homes, significant disruption from noise, operation and construction and would destroy whole community areas.

APPENDICES

APPENDIX 1

Test 1 : Station proposal for Sheffield

Does the revised proposal for Sheffield's HS2 station meet Sheffield City Council's requirement for a city centre station with major regeneration potential?

HS2 to Sheffield Midland	HSUK to Sheffield Victoria
The adoption of new proposals for HS2 to serve Sheffield at the existing Midland station, only 500m from the Town Hall, unquestionably meets Sheffield City Council's requirement for a city centre station. However, Sheffield Midland offers little potential for regeneration and it may require major modification and expansion to accommodate the large number of proposed terminating services, variously classic, HS2 and Northern Powerhouse.	HSUK's proposed restoration of the former Victoria site as Sheffield's new high speed station will result in a less central station (1,100m from the Town Hall). However it offers much greater potential for regeneration of large areas of former industrial land in the Don Valley, and provides the opportunity for a managed expansion of Sheffield's city centre to the east. The development of Sheffield Victoria would include the provision of new interchange platforms on the existing northern approaches to Sheffield Midland. This would allow passengers on local services to access high speed services and also new employment opportunities in the redeveloped 'Victoria Quarter. Victoria is also better aligned with the operation of through north-south and east-west high speed services, linking Sheffield to all other major UK centres.

Result : HSUK best performer

Test 2 : Maintenance of through services for Sheffield

Does the revised proposal for Sheffield's HS2 station allow viable through services – or will most HS2 services bypass Sheffield?

HS2 via Midland/Mexborough	HSUK via Victoria
With Sheffield Midland connected to the HS2 trunk route at Alfreton in the south, and Thurnscoe in the north, Sheffield will be placed on a loop 63km long. This introduces a 25 minute time penalty for through HS2 services eg Leeds-Sheffield-Birmingham to make a stop at Sheffield. It seems highly likely that these services will bypass Sheffield, and in consequence Sheffield will enjoy far fewer HS2 services than under the previous Meadowhall proposals.	HSUK's route through Sheffield Victoria is designed as a primary route along which most north-south and east-west high speed services will operate, with almost all stopping at Sheffield (and not suffering undue time penalties). Sheffield Victoria will provide for Sheffield (and the entire South Yorkshire region) unprecedented levels of intercity connectivity, with direct high speed links to all 32 other centres considered in the HSUK timetable.

Result : HSUK best performer

Test 3 : Sheffield-London journey time

Does the revised proposal offer optimised journey times to Sheffield?

NR to Midland	HS2 to Midland	HSUK to Victoria
St Pancras to Sheff. Midland	Euston to Sheff. Midland	Euston to Sheff. Victoria
122 min	83 min	57 min
(calling St Pancras-Leicester, Derby, Chesterfield & Midland)	(calling Euston, Toton, Chesterfield & Midland)	(Euston-Victoria non-stop)

Result : HSUK best performer

Test 4 : Leeds-London journey time

Does the revised proposal offer optimised journey times to Leeds?

NR to Leeds	HS2 to Leeds	HSUK to Leeds
Kings Cross to Leeds City	Euston to Leeds City	Euston to Leeds City
133 min	80 min	76 min
(calling Kings Cross, Peterboro', Doncaster, Wakefield, Leeds)	(calling Euston, Old Oak Common, Leeds)	(calling Euston, Sheffield Victoria, Leeds)

Result : HSUK best performer

Test 5 : Achievement of 'hugely enhanced capacity & connectivity' between UK's major conurbations

Does HS2 as a nationwide scheme meet its fundamental capacity and connectivity objective?

	HS2 via Mexborough		HSUK via Victoria	
Capacity	HS2's capacity gains are hugely limited by its 2-track stem, and by its focus upon London-centric routes. HS2 has insufficient capacity to serve most second-tier cities, and these are left bypassed and reliant on reduced services on existing main lines. Switch of HS2 to Sheffield Midland requires 2 extra services per hour on 2-track stem.		HSUK creates far greater network capacity through 4-track spine following M1 corridor and through alignment with all primary main line corridors ie ECML, MML, WCML, XCML & TPML. HSUK has sufficient capacity to provide enhanced services to all cities served by the present intercity network.	
National Intercity Connectivity:	No of cities directly linked by **HS2**	%age average journey time reductions	No of cities directly linked by **HSUK**	%age average journey time reductions
Sheffield	**2**	**<5%**	**32**	**54%**
Leeds	**2**	**<5%**	**31**	**49%**
Huddersfield	**0**	**0%**	**18**	**42%**
Bradford	**0**	**0%**	**15**	**52%**
Nottingham	**0**	**0%**	**28**	**58%**
Derby	**0**	**0%**	**29**	**46%**
Nationally	**N/A**	**<5%**	**N/A**	**45%**
	HS2's overall connectivity is hugely restricted by an arbitrary decision that the new high speed line should operate largely in isolation, with no effective links to the existing network. This failure to integrate, coupled with a failure to design HS2 as a national network, leaves HS2 unable to meet its fundamental objective ie the delivery of 'hugely enhanced capacity and connectivity' between the UK's major conurbations.		HSUK has been designed from the outset with the aim of using new high speed lines to enhance the existing network, and improve its ability to offer fast and efficient links between all of the UK's principal cities. This is exactly analogous to building motorways in the last century, all of which were provided with close-spaced interchanges with the existing road network. (Whereas HS2 is equivalent to building a motorway without interchanges).	

Result : HSUK best performer

Test 6 : Compliance with Northern Powerhouse objectives

Is the HS2 proposal for north-south high speed lines compatible with future development east-west 'HS3' links between Northern cities, and general improvement of routes in accordance with the Northern Powerhouse/One North specification?

Northern Powerhouse (NP) / One North requirement:	**HS2 via Mexborough**	**HSUK via Victoria**
Transpennine high speed line??	The desired outcome of a dedicated transpennine HS3 high speed line of quality to match the north-south HS2 is rendered impracticable by HS2's excessively east-sided route. This will impose slow & circuitous routes for HS3 links from Manchester to Sheffield and Leeds, incompatible with through running to cities such as Nottingham, Hull & Newcastle. This leaves upgrades of existing transpennine routes as the only viable alternative. Adoption of Sheffield Midland as HS2/HS3 station in Sheffield also prevents achievement of specified 30 min journey time between Sheffield and Manchester.	HSUK will create a largely dedicated high speed route via the redundant 'Woodhead' corridor. This will offer journey times that meet all aspects of the NP specification both for intercity links and for direct links to Manchester Airport. This is only possible with a Sheffield-Leeds route running to the west of Barnsley, and to the west of the M1.
30 minute Leeds-Sheffield journey time	NP route follows 20km of existing railway from Sheffield to Thurnscoe. This route will only have capacity for proposed 6tph service and for local services if 4-tracked for most of its length.	Design of HSUK as optimised UK intercity network fully interlinking all principal cities is entirely harmonious with Northern Powerhouse requirements for enhanced links between Northern cities, including Sheffield, Leeds and Manchester. All aspects of Northern Powerhouse spec for improved intercity links and links to Manchester Airport are satisfied.
30 minute Sheffield-Manchester journey time	Location of HS2 terminal at Sheffield Midland makes specified 30 min journey time impossible to achieve with any route upgrade strategy (except for a full length transpennine tunnel circa 30km long) along the existing Hope Valley line.	
30 minute Manchester-Leeds journey time	Achievement of specified 30 min journey time through upgrade of existing transpennine route via Huddersfield is only practicable with 25km of new tunnel & 4-tracking of existing 2-track sections.	
Transpennine railfreight	Current HS2 and HS3 proposals give no clue as to how 'One North' aspiration for high-capacity gauge-enhanced transpennine railfreight route will be achieved.	HSUK creates dedicated transpennine freight route via redundant Woodhead corridor as part of wider strategy to create gauge-enhanced national freight network running parallel to HSUK's high speed lines.
Transpennine HGV shuttle	Current official proposals for 31km long transpennine road tunnel will pose huge risks for HGV traffic flows between Manchester and Sheffield. Current planning for HS3 appears to completely ignore the need for route enhancements to address transpennine freight flows.	HSUK addresses HGV congestion along A628(T) Woodhead road by means of M60-M1 lorry shuttle, fully integrated with other transpennine initiatives.

Result : HSUK best performer

Test 7 : Inclusivity

Can local communities efficiently access high speed services at city centre hub stations in Leeds and Sheffield? How will the HS2 proposals improve capacity for local services?

Local connectivity to high speed rail via:	**HS2 via Mexborough**	**HSUK via Victoria**
Local services routed to Sheffield Midland	Local services can access HS2 at Sheffield Midland, but HS2 will only provide useful direct links to 2 other UK cities ie London and (possibly) Birmingham.	Local services en route to Sheffield Midland can access HSUK via new interchange platforms at Sheffield Victoria. Direct HSUK services from Victoria to all other 32 cities covered by HSUK timetable.
Local services routed to Leeds City	Access to HS2 services at Leeds City station is possible, but only to 2 other UK cities – London and Birmingham. For communities such as Crofton, this will involve travelling at least 20km in wrong direction.	HSUK offers direct services from Leeds City to 31 out of 32 cities covered by HSUK timetable.
Local capacity improvement at Sheffield?	Proposed routeing of high speed services along 2-track routes (HS2 via Chesterfield, HS3 to Leeds via Thurnscoe and HS3 to Manchester via Hope Valley) will prevent the opening of new stations on radial routes into Sheffield, and will also preclude increased frequencies for existing stations.	HSUK will create a reserved 2-track corridor for high speed intercity services through Sheffield. This will be clear of existing routes, and these will be left free to develop more frequent local services to a greater number of stations.
Local capacity improvement at Leeds?	HS2 will not provide extra track capacity for local services at Leeds. It will eliminate only 1 train per hour and it will provide no alternative services for commuters. Hence HS2 will do nothing to improve local capacity at Leeds.	HSUK's proposed developments at Leeds City Station will establish a reserved 2-track corridor for high speed intercity services across the city. This will be completely clear of existing congested local routes, and will enable local services to be doubled in frequency, and will also open up opportunities for new stations.

Result : HSUK best performer

Test 8 : CO_2 reductions

Does HS2 enable the step-change road to rail modal shift necessary for CO_2 emission reductions in accordance with the 80% reduction target of the 2008 Climate Change Act?

HS2 via Mexborough or M'hall	**HSUK via Victoria**
The proposed switch from Meadowhall to Midland and the Mexborough route will increase HS2's operational inefficiency and can only worsen its inadequate performance on CO_2 reductions – effectively 'carbon neutral' across the transport sector over a 60 year period, by HS2 Ltd's own figures. This is completely at odds with the requirement of the 2008 Climate Change Act for 80% CO_2 reductions by 2050.	HSUK achieves the radical improvements in both connectivity and capacity, for passenger and freight traffic, that are essential for step-change road-to-rail modal shift. Such a shift is essential for any chance of emission reductions in line with the requirements of the 2008 Climate Change Act. HSUK's analysis indicates a potential for up to 600 million tonnes of transport CO_2 reductions through the implementation of HSUK.

Result : HSUK best performer

Test 9 : Community & countryside impacts

Does the rerouteing of HS2 result in acceptable and minimised impacts on countryside and local communities? Have all possible options, including to the west of the M1 corridor, been considered?

HS2 via Mexborough	HSUK via Victoria
HS2's revised route via Mexborough, with its proposed destruction of an entire housing estate, provides the perfect example of HS2's inappropriate routes which respect neither existing transport corridors, topography nor the communities that lie in its path. HS2's extreme impacts are greatly exacerbated by its excessive design speed, of up to 400km/h, which dictates flatter curves and makes it more difficult to follow existing transport corridors and to fit the new railway onto the landscape. Analysis of HS2 Ltd's route selection process reveals that no routes to the west of the M1 were ever considered. This decision appears to have been dictated by the need: a) to find (relatively) flat topography on which to locate a high speed line designed for extreme speed and, b) to consider only north-south routes ie London and Birmingham to Sheffield, Leeds and cities further north. (As noted previously, HS2's routes and stations are fundamentally incompatible with the achievement of efficient 'HS3' transpennine links.)	HSUK's community and environmental impacts are greatly reduced through its general adherence to existing transport corridors, and its adoption locally (ie between Sheffield and Leeds) of a lower design speed of 280km/h. HSUK's route to the west of the M1 is undoubtedly in more severe topography, and presents its own challenges, both environmental and community. However, HSUK's comprehensive route mapping indicates clearly that these challenges are manageable, and involve no major loss of residential property.

Result : HSUK best performer

Test 10 : Cost

Will the revised proposal for Sheffield's HS2 station result in the predicted £1 billion cost savings, and could greater savings be achieved by adopting alternative schemes?

	HS2 via Mexboro' station	HS2 via M'hall, station at M'hall	HS2 via M'hall, station at Midland'	HSUK via Victoria station
Cost of N-S links (Alfreton to Leeds)##	£6.45bn	£6.45bn	£5.85bn	£7.73bn
Cost of HS3/Northern Powerhouse links Sheffield/Leeds-Manchester **	£13.42bn	£12.77bn	£12.84bn	£4.93bn
Total cost of N-S and E-W links	£19.87bn	£19.22bn	£18.69bn	£12.67bn

This cost includes all elements necessary to complete the N-S HS2 scheme, accessing Sheffieldand Leeds from the south. The geographic scope of this assessment extends from M1 Junction 29 near Alfreton (a point common to both HS2 and HSUK) northwards to Leeds.

** This cost includes all additional elements necessary to create HS3/Northern Powerhouse links between Sheffield, Leeds and Manchester.

Result : HSUK best performer

Test 11 : Depot Locaction

Does Crofton comprise the best site for a new rolling stock depot, and has HS2 Ltd considered all possible options?

HS2 via Mexborough or M'hall	HSUK via Victoria
HS2 Ltd's consideration of potential depot sites has been hugely restricted by another decision, to operate HS2 services using 'Continental-gauge' double-decker rolling stock that is too wide and too high to fit within the tunnels, bridges and platforms of the existing network. This 'captive' rolling stock is restricted to the more generously-proportioned new HS2 infrastructure. This effectively limits the choice sites for new depots to locations along HS2's line of route. As such, it is likely that HS2 Ltd sees Crofton as representing the 'least worst' option for a depot in the Yorkshire area. However, the real question that needs to be asked is why the design of HS2 has been predicated upon the use of rolling stock too large to fit onto the existing network. This has ramifications that go far beyond the choice of depot location, it also impacts directly on the range of services that HS2 can offer, the number of cities that HS2 can serve, and the overall consequence is HS2's hugely substandard connectivity as a national network.	Whilst all of HSUK's new-build infrastructure will be constructed to accept the larger 'Continental-gauge' double-decker rolling stock that is proposed for HS2, this is only for purposes of future-proofing – for example, to allow the possibility of long-distance services to Europe. HSUK proposes only to operate 'UK-sized' rolling stock, similar to the existing HS1 'Eurostar' fleet. This is absolutely necessary to achieve full integration with the existing network, and to enable the full interconnectivity that HSUK will attain between the UK's principal cities. This also allows a much greater range of sites to be considered for rolling stock depots and other supporting infrastructure. On this basis, brownfield sites such as Healey Mills (a vast and largely disused marshalling yard to the west of Wakefield) would appear to be far more suitable locations as a depot for high speed rolling stock.

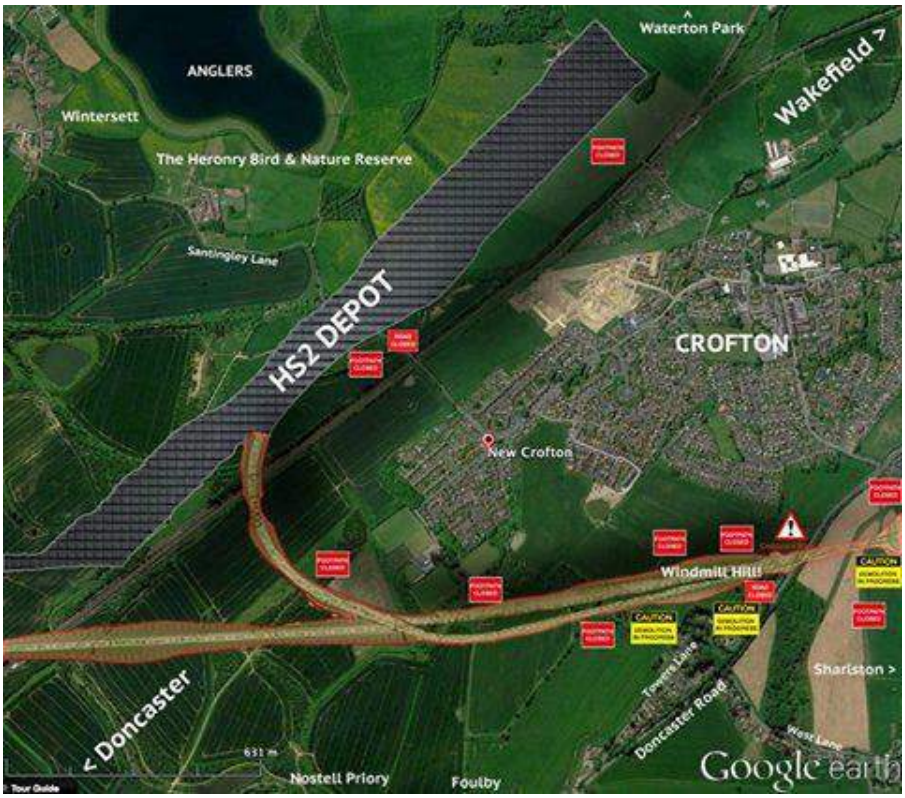
Result : HSUK best performer

APPENDIX 2

IMPACTS AT CROFTON & SHARLSTON

What the New HS2 Route means for the Environment of West and South Yorkshire

- Loss of habitat for vital wildlife ecosystem in Yorkshire – flora, fauna including roe deer, protected species, affecting bird reserves such as the SSI's Anglers Country Park, Haw Park Wood, & Wintersett Reservoir all within 1km of the Depot & Route
- In West Yorkshire this includes ancient woodland & vital natural wildlife corridors which will threaten population groups of migrating & indigenous wildlife such as the Great Crested Newt Triturus cristatus



APPENDIX 3

Crofton Rolling Stock Depot: A masterclass in how to damage a community

Unlike the thorough sifting process with RSD in other phases, New Crofton was chosen as a depot location despite it breaching HS2 limited own depot criteria. It is set in Green belt land, with unsuitable access roads and too close to housing and a vibrant village of 6,000 inhabitants, 4 schools with 2,000 pupils and a significant young and retired population. The new depot has doubled in size and from a zero demolition impact now threatens six houses. The construction of the depot will impact Nostell Priory through increased heavy traffic passed listed buildings not correctly identified on the original 2013 AOS. A 2016 housing development from Harron Homes is within 200 metres.

3.4 Evaluation of Potential Depot Locations

The choice of depot location is heavily driven by the preferred HS2 route and is subject to sifting and stakeholder consultation. In addition to key environmental/sustainability effects, other factors to be considered during location evaluation include:

- Rail access and options for direct connection to route and service commencement Yes
- Other operational issues – line capacity/conflicting traffic moves No
- Ability to easily carry out empty coaching stock movements Yes
- Location with respect to the needs of the site e.g. emptying of toilets No
- Road access and connectivity No
- Space required/available including suitable storage No
- Ground conditions and topography No
- Security of stores, accommodation, vehicles and stabled sets ?
- Ownership – freehold/lease
- Economic – multitude of factors
- Proximity to suppliers No
- Availability of power and services suitable for Day 1 and future needs No
- Resourcing – labour (skills, availability)
- Long term expansion potential without disturbance to established areas of the depot/access No

It is estimated that circa 300 people will be employed at the new depot.

3.5 Depot Cost Estimate

A specimen cost has been derived through application of the depot specification to a potential depot

APPENDIX 4

10c	Masboro / Ickles	Site too small – Parked
11	Chapeltown (Sheffield)	No Classic Rail Connection for IMD – Parked
12a	Cudworth 1	Taken forward – Combined with 12b
12b	Cudworth 2	Taken forward – Combined with 12a
13a	Carlton / Shafton	Limited access from route – Parked
13b	Havercroft / Hemsworth	Taken forward
14a	New Crofton	Taken forward
14b	Walton	Challenging terrain – Parked
S14C	Crofton	Poor access and challenging terrain – Parked
15	Healey Mills	Too remote from potential routes - Parked
16a	Normanton	Site too small – Parked
16b	Methley Junction	Taken forward
16c	Woodlesford	Site too small – Parked
16d	Great Preston	Poor access and challenging terrain – Parked
17a	Lofthouse	Limited access – Parked
17b	Rothwell	Challenging terrain and limited access – Parked

- Metheley (16b)

(11.2.6) Combined Infrastructure Maintenance Depot and Rolling Stock Depot

- Tinsley

(11.2.7) The depot site at Woodburn Junction (10a) was subsequently parked. The site would be bisected by the Sheffield to Worksop railway line with a current clearance of 5m from existing ground. It would not be feasible to lift this railway to create adequate clearance as the railway falls rapidly to Woodhouse Junction north of Beighton. Furthermore, access to the depot would have involved flat junctions across the classic lines, constraining railway capacity of both the high speed route and the Chesterfield to Rotherham railway.

(11.2.8) The depot site at Havercroft / Hemsworth (13b) was also parked prior to option refinement as the applicable Line of Route it served was parked.

11.3 Short List of Options

(11.3.1) At this stage all the options were considerable viable to be taken forward.

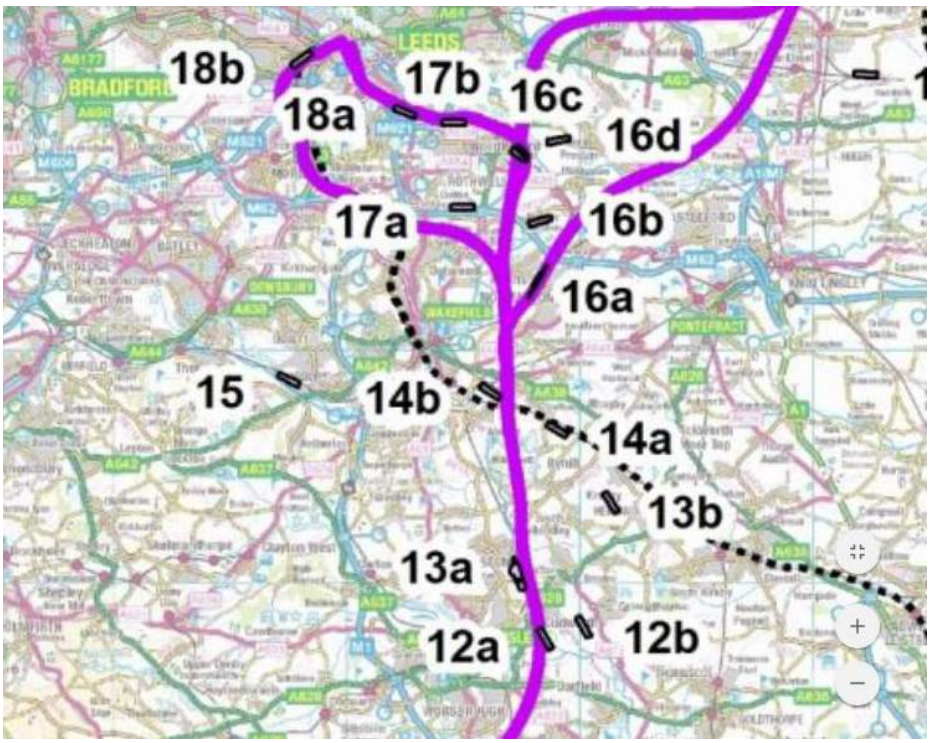


Figure 17.2 Leeds depots parked during selection of options for further refinement

5.1 Requirements for rolling stock depot

5.1.1 Each of the legs to Manchester and Leeds will include provision for a rolling stock maintenance depot (RSD).

General

5.1.2 The RSD for each of the Manchester and Leeds legs would be configured for stabling and light maintenance, with heavier maintenance activities carried out at the Washwood Heath depot proposed for phase one of the HS2 network.

5.1.3 The RSD would be positioned with access to the HS2 route, ideally within ten minutes from the terminus station on each leg if running on the existing railway network, and the connection to HS2 would be made without introducing conflicting moves or loss of existing main line operational capacity. Access to the existing rail network to facilitate delivery of rolling stock and other materials by rail is desirable yet not essential.

5.1.4 The RSD would provide immediate access to the trunk road network to facilitate access by large goods vehicles. Good transport links will enable a suitable and relatively local workforce, and as such, the potential for access by public transport would be considered.

5.1.5 The site would be required to operate for 24 hours, seven days a week, and as such, the potential impacts upon local residential areas have been a factor in the decision making process. Brown field sites are preferable with ready access to existing utilities networks. Adverse sustainability impacts have been avoided.

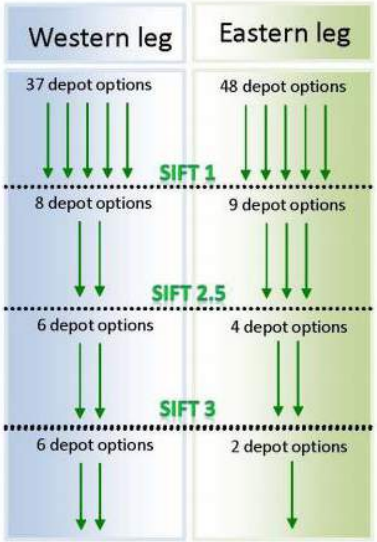
Capacity

5.1.6 The RSD would be configured to be able to routinely deal with 30 train sets and provide stabling for up to 40 sets in exceptional circumstances. This requirement approximates to a footprint one kilometre in length and 250m wide, an area of 25 hectares. Each train set is up to 200m long, although a number may be up to 260m long for services running onto the existing railway network. Each depot would

3.6. Depot sifting

3.6.1. The development and sifting of depot options took place between October 2011 and January 2012. It involved a similar approach to the route and station sifts, although the short-listing (Sift 2) stage was omitted, as Sift 1 was successful in reducing the number of options to a manageable level that were then subject to a more detailed appraisal at Sift 2.5 and Sift 3.

3.6.2. From Sift 3 emerged six depot options on the western leg (two infrastructure maintenance depots and four rolling stock depots), and single proposals for an infrastructure maintenance depot and a rolling stock depot on the eastern leg.



APPENDIX 5

		issues, disruption during construction and cost	due to regional losses offsetting Sheffield increases	additional operating costs to HS2	
Sustainability	Impact on a number of Major Development Sites associated with the Sheffield Enterprise Zone Noise impacts on a number of communities close to the route Cluster of 49 demolitions at South Tinsley Flood risk at station (concourse and car park)	Grade II* listed Park Hill flats adjacent to station require protecting Station and tunnels within floodplain Cumulative impact on listed buildings along Attercliffe corridor	Slower route means reduction in noise impact Greater direct impact on listed buildings and geological Site of Special Scientific Interest Greater interface with rivers and more watercourse diversions of major rivers	Reduction in impact on Major Development Sites Reduction in noise impacts Overall reduction in demolitions expected, although route would impact a new development site between Conisbrough and Mexborough Reduction in flood risk Greater heritage and landscape impacts.	X No X No
Risks and opportunities	Geotechnical risks around station Meadowhall Major property impacts through northeast Sheffield Major highway modifications Impact on British Land car park	Lower geotechnical risk although significant tunneled north and south approaches required Operational risks with tunnel portal in flood zone Significant disruption during construction to Midland station and local highways to the north of the station	Greater local regeneration potential Greater potential for local employment growth Disruption to Network Rail and local roads as result of constructing along existing rail corridor Complex access to construct tunnelled route north of station	Route avoids known mining areas. Further investigation into hazards required Numerous highways impacts alongside M1/M18 Opportunities for HS2 to serve other South Yorkshire destinations e.g. Chesterfield, Rotherham Performance risk of HS2 services	X No No
Cost	BASE	+£2,000M	+£700M	-£1,000M (2015 price)[5]	X

APPENDIX 6

WHAT THE NATIONAL TRUST SAYS

New HS2 Phase 2B route recommendation brings serious concerns

ntsteve / July 21, 2016

On 7 July, Chairman of HS2 Ltd Sir David Higgins published *Sheffield and South Yorkshire Report 2016* which recommended changes to the route of HS2 serving Sheffield.
These are the first recommendations to change the route of HS2 Phase 2B since the proposed line of route from the West Midlands to Manchester and Leeds consultation which closed in January 2014.
The report recommends the introduction of a new section of line able to take 'classic compatible' services from the HS2 line north of Bolsover onto existing railway through Chesterfield into Sheffield city centre, removing the need for a HS2 station at Meadowhall and bringing completely new impacts on communities.

M18/Eastern Route including Sheffield to Leeds link – ©HS2 Ltd

These recommendations would result in significant movement of the HS2 line to bring it within 350 metres of the parkland at Nostell, near Wakefield, and changes to the route both south and north of Hardwick, Derbyshire.

We are seriously concerned about the new position of the railway at Nostell as for much of its route there the line is elevated on either embankment or viaduct. This, along with the New Crofton Rolling Stock Depot, will introduce alien features into the landscape bringing noise and negative visual impacts for visitors to Nostell and the local community from lighting, railway infrastructure and passing trains as well as increases to local traffic.

"We are also worried about the potential risk of water pollution, whilst the house's important collection, which includes numerous significant paintings, extensive pieces of Chippendale furniture and the largest collection of silver in the care of the National Trust, is sensitive to any increases in dust."

APPENDIX 7

What the Higgins Report says: -

Despite previous arguments to the contrary from HS2 Limited from 2010-2016, the Location of the HS2 Sheffield Station should now be moved from Meadowhall to Sheffield City Centre. Because of this the best route choice is now a new M18/Eastern Route which will save £1 billion from the original consulted route. This new route is easier to build (less concerns over flooding and past mining), less costly and will evolve less damage – demolitions & noise. It will cut journey times and therefore create benefit. All other alternatives have been assessed and this is the best proposal.

The Truth: -

The Location of HS2 Sheffield Station does not impact the route, as the proposed link line to Sheffield City Station works better with the original consulted route. The "new M18/Eastern route" is not actually new, but an old proposal "East of Rotherham" rejected by HS2 Limited in 2011 on environmental concerns. The New route is harder to build (with unassessed concerns over flooding and past mining) just as costly (see appendix), and will involve three times the damage – demolitions (315 versus 105 residential demolitions) and noise. As HS2 Limited has done no assessment work on what properties are affected and fall within 60m of the track (as revealed by FOI) – the claim over demolitions is a simple & wrong guess. The new route will increase journey times for much of the region (Rotherham, Doncaster, Wakefield) and Sheffield too. A better alternative (see appendix) has been ignored which would save £534m and use existing consulted route with the link line. This alternative route would have been preferred by local councils, local MPs and the public and its omission must have been a deliberate attempt to deny a less impactful alternative so as to attempt to maximise cost savings at the expense of the region's connectivity and wellbeing.

HS2 Limited have put their name to a Report which misleads the Secretary of State Chris Grayling. The False Statements made are a) HS2 Limited consulted with Local Authorities prior to deciding on new Eastern Route Proposal (NOT TRUE: Wakefield, Rotherham & Doncaster & MPs were not informed) b) New Route will result in One Billion Pounds saving (Not True: This claim is unsupported & Longer Route has had no assessment as to costs, compensations, demolitions, engineering. So at best this is a bad guess & is challenged by Rail Engineers who suggest cost neutral or even plus £400m) c) New Route will have fewer demolitions (NOT True - number of properties along the route within 60 metre safeguarding zone is estimated at 315 which is three times the 105 on old route. Yet HS2 admit in FOI request they have made this claim without any safeguarding assessment and have no idea about number of demolitions d) Less Noise than old route: (Not true - this is a guess, some

40,000 people live within 500 metres of new 58km route which exceeds 6,200 on old route noise blighted. This new route is an old plan from 2011 "East of Rotherham" which HS2 Ltd rejected in 2012.

Appendix

1. Data gathered by local communities on demolitions
2. Information from local communities on mining & flood concerns
3. Submission of alternative route: Existing route with classic city link (saving £534m)
4. Submission of HSUK Alternative route: West of M1 with Manchester link (saving £1,500m)

IMPACTS AT HAVERCROFT, HEMSWORTH & SOUTH KIRKBY

In ex-mining communities residential demolitions, noise and impacts on Iron Age sites, Howell Wood and communities will require Green Tunnels

IMPACTS AT CLAYTON, THURNSCOE, HICKLETON & BARNBURGH & HARLINGTON

In village communities residential demolitions, noise and impacts were identified in the original East of Rotherham LOR as requiring mitigation by 2 km tunnel at Hickleton

IMPACTS AT MEXBOROUGH

Over 270 demolitions, substantial noise impacts

HS2 ENGINE FOR GROWTH - CLASSICALLY INCOMPATIBLE

In July, HS2 Ltd Chairman Sir David Higgins released his report outlining the company's recommendation for a high-speed rail line in South Yorkshire, using an M18/Eastern route, instead of the previously-favoured Meadowhall option.
The handling, timing and subsequent effect of this announcement could not have been worse for those in the Dearne Valley, which will be devastated by this project.

The Higgins report contains several flaws, contradictions and speculative assumptions that merit counter argument. The following sets out to do that, with particular attention to the potential effect on Mexborough.

FACTORS OF CONSIDERATION

1. Demand

Higgins makes the first of many references to speed: 'every minute lost, or gained, on the timetable does not just permanently affect passengers to those destinations, it also adds or subtracts to the

overall business case for HS2 as a whole'. Defenders of HS2, including Government ministers, now claim the project is about capacity. Accommodating extra capacity reduces speed, which becomes more apparent by scrutinising proposed journey times.

2. The needs of Sheffield and the wider region

Ultimately, the wider region has not been considered. This is reflected in the comprehensive rejection of HS2 Ltd.'s M18/Eastern route by both Doncaster and Rotherham councils, together with significant community opposition.

3. Connectivity with existing rail and wider transport network
The recommended HS2 Ltd route offers no connectivity between Sheffield and Birmingham or Sheffield and Leeds. It limits the prospect of future connectivity with a Trans-Pennine HS3.

Reference is made to Northern Powerhouse Rail's aspiration of reduced journey times between Leeds and Sheffield. Higgins acknowledges this factor was not part of HS2 Ltd.'s original remit, or budget. Yet his report makes several references to accommodating the desires of NPR. Despite this repeated lack of remit, appeasing NPR has clearly become a significant consideration, while views of the wider region have been ignored.

4. Topography, urban density and environment
The M18/Eastern route leads to the demolition / evacuation of an estate of homes not identified or completed when the route was originally drawn. A nearby and larger estate of housing, also not identified or completed at the time, would endure significant negative impact. The revised route goes across previous mine workings at Denaby and Barnburgh Collieries; a former local authority waste-disposal site, where methane gas is being extracted; unspoilt countryside through Firsby, Hooton Roberts, towards Old Denaby, along the River Dearne, through Barnburgh and beyond.

Reference is made to Sheffield being vulnerable to floods. While the city undoubtedly suffered extensively in 2007, the effects of prolonged rain were endured equally, if not more so, in the Dearne Valley. This is a natural consequence of water running off the Pennines and towards the sea, particularly along the River Don and towards its confluence with the River Dearne. The River Don burst its banks at Mexborough in 2007, surplus water flowing into the adjacent South Yorkshire Navigation canal, which was also breached. The notion Sheffield is less susceptible to flooding than land further east is incorrect.

Higgins refers to the Meadowhall option and the effect on complex heavy industry plants and steel works. The M18/Eastern route merely shifts destruction away from business and towards domestic property, in communities that are also 'firmly established'.

5. Cost
While this is rated fifth by Higgins, it has clearly become the driving factor for recommending the M18/Eastern option. However, savings quoted by this scheme do not stack up. They take no account of linking Sheffield to Leeds, lack of HS2 access outside Sheffield, or rising construction costs based on limited research prior to the plan being announced.

A DIFFERENT WAY FORWARD
Higgins refers to an effort to be 'imaginative and think again'. However, the

M18/Eastern route is already several years old and has been rejected once. It was referred to as being 'dusted off' by an HS2 Ltd engineer at Mexborough Resource Centre in July. The assertion of 'classic compatible' is exactly the reverse. The revised route is a solution no one wants and does not even meet the criteria of 'least worst'.

Particularly concerning is the assertion the M18/Eastern route is 'comparatively less populated', especially since more than 650 homes have been built / planned in Mexborough since the route was originally drawn.

Higgins refers to benefits for 'cities further north', yet as there is no firm proposal to extend the line north, this is speculation.

According to Higgins, Doncaster, Rotherham and Barnsley would still benefit from the overall proposition. Clearly, the local authorities in Doncaster and Rotherham do not think so. The notion Doncaster would gain extra capacity on the East Coast Mainline is contradictory to supply and demand. If capacity was freed too much, services would be cut and current links denigrated. Why would Doncaster people, with existing access to an excellent transport service to London, travel to an alternative route that would cost more and lead to an increase in total journey time?

Higgins speculates that under his recommendations, Barnsley, Rotherham and Meadowhall 'could benefit' from high-speed trains continuing beyond Sheffield on existing lines. Those locations could also not benefit, as there is no firm proposition to extend out of Sheffield. If links were established, high-speed trains would not travel at high-speed.

Higgins' belief HS2 Ltd should conduct a further study to recommend on the potential for a parkway station to 'serve the whole of South Yorkshire' acknowledges his current proposal does not accommodate the rest of the region. Such an addition would merely increase project cost and significantly reduce predicted financial savings from the M18/Eastern option.

The recognition 'those affected will want as much information as soon as possible' is a fallacy and insult to people whose lives will be devastated by this plan. HS2 Ltd have treated residents with contempt, failing to tell many their homes would be demolished or subject to compulsory purchase. Some residents living within 60m of the proposed line only received direct communication from HS2 Ltd three months after the M18/Eastern route was recommended. This was despite repeated requests and enquiries to the company. Other residents remain in the dark. Higgins' apology for the uncertainty and concern facing residents and their families is effectively worthless.

Higgins refers to congestion problems and access at Meadowhall, should a

station be sited there. He has clearly never travelled into Sheffield at peak time by car. The city is one of the worst for vehicular access and parking, issues that would only be exacerbated by his proposals to supposedly boost demand by running HS2 trains from Midland Station.

While Higgins claims 'increasing awareness of the likely scale of disruption' surrounding Meadowhall, he is clearly unaware of the likely disruption the M18/Eastern route will cause in the Dearne Valley, in particular the arterial and singular route through Mexborough.

A DIFFERENT APPROACH

Higgins refers to the M18/Eastern route as not impacting on services to areas of greater demand to the north, citing Leeds, York and Newcastle. The last two are already well served by the east-coast line and would require train changes at Leeds to utilise HS2, rather than existing no-change journeys through Doncaster. The point about lack of impact contradicts the earlier claim about freeing capacity.

Higgins repeatedly references train speed, yet the published time projections make questionable reading. His proposed 'best possible' time from Sheffield to London of 83 minutes is only 14 minutes faster than the existing best possible service between Doncaster and London. It is only seven minutes faster than the existing best possible return journey. It is five minutes slower than total journey time from Sheffield to London, with a change of train, should the station be built at Meadowhall. The 83 minutes is also 17 minutes slower than Sheffield to London if redevelopment of Midland Station was favoured.

For Higgins, speed is key when he wants and secondary when he does not. Ultimately, Sheffield does not get HS2. It gets high-speed trains running at half speed. With 'up to two trains per hour', the city hardly gets a significant increase in capacity.

Higgins again refers to NPR and the possibility of a Sheffield-Leeds link being used by Birmingham-Leeds services. Again, this is speculation based on lack of remit and existing plan. Why would people want to travel from Birmingham to Leeds and divert onto reduced-speed HS2 via Sheffield as part of their journey? If some did, would numbers be sufficient to justify this consideration?

Higgins claims the M18/Eastern route would result in fewer demolitions. This is not true. However, the key figure relates to clearance and loss of homes.
Effective evacuation of the Shimmer estate and other Mexborough properties nullifies Higgins' point. Given HS2 Ltd.'s repeated failure to communicate with property owners, whose homes and businesses would be lost, it becomes clear HS2 Ltd has little understanding of the extent of the havoc they would wreak.

Midland' under the M18-Eastern route. Does he really think that, in 17 years' time, Doncaster residents would travel more than 20 miles across South Yorkshire to take a train to London that would only be a few minutes faster than one they can board now? The journey from Doncaster to Sheffield would take longer than the proposed time saving.

With regard to siting the station at Meadowhall, Higgins mentions as a negative that people travelling from Barnsley would transfer at different levels. He does not mention people travelling from Rotherham or Doncaster. Are changing levels really that arduous? South Yorkshire passengers travelling to the capital already have to do it every day, when using London Underground to transfer at Kings Cross / St Pancreas.

Higgins acknowledges necessity to provide a station stop in South Yorkshire. His recommended route does not achieve that. He has provided a station stop in Sheffield and the rest of South Yorkshire has to live with the consequences. Sheffield gets a dubious gain, while the rest of South Yorkshire endures all the pain.

Finally, Higgins claims to be doing all he can to ensure questions and concerns of those affected are addressed as quickly as possible. On this point alone, he needs to look at the company beneath him, which seems to operate with limited competence and disregard for impacted neighbourhoods. Higgins' desire to give people 'the certainty they need to get on with planning their future' has only resulted in heightened anxiety for those facing the prospective ruin of their future.

CONCLUSION
To paraphrase the author, HS2 Engine for Growth - Sheffield and South Yorkshire 2016 is classically incompatible. It is a hit-and-hope solution no one wants. It represents a desperate attempt to keep the project going, amid spiralling costs that threaten its derailment. Higgins will deliver neither maximum speed nor maximum capacity. His proposal is bereft of proper research and consequence, takes a rapacious approach to the environment and has scant regard for communities it will overwhelm.

30 per cent of Mexborough's new properties would be lost.
This is either demolished, subject to compulsory purchase or not built. The 'not built' refers to planned homes on the Shimmer estate which will now not go ahead.
*It seems that while all of Shimmer would not be demolished, the estate would be uninhabitable during construction, as it only has one access.

More than 60 per cent of Mexborough's new properties would fall within HS2's compensation zone.
This includes demolitions, compulsory purchase, safeguarding and distance compensation.
*This figure is the most difficult to estimate, as it assumes half the Melton View / Lavenders development on Pastures Road falls within 300m. The headline figure may therefore be more than 60 per cent. One of the local councillors is trying to access the original planning application to get a more accurate figure.

Approximately 90 per cent of Mexborough's new properties fall within 700m of the proposed HS2 line
*This figure should be accurate, although the distance could be lower (600- 650m).

THE DIFFERENCE IN ENERGY LEVELS BETWEEN 'NORMAL AND HIGH SPEED TRAINS & THE HIGH ELECTRICAL COST OF THAT EXTRA 50MPH -
To give an idea of the difference in sound level between a normal train and HS2 you can look at the Japanese 'Bullet' trains. These travel at 200mph which is 50mph slower than HS2. By the way that extra 50mph uses a huge amount more electricity than the 'Bullet' train as you're fighting huge wind resistance. If a traditional train emerges from a tunnel it makes a loud sound (I know there are no tunnels involved in this area), but a 'Bullet' train emerges with a loud bang because there is so much more energy involved. Imagine what and extra 50mph would add. The point is this isn't a normal train. If you went to the Crofton HS2 'Event' you should ask yourself why there were no sound kiosks?

HIGH SPEED NOT ACHIEVED, ALL FOR NOTHING? -
The HS2 line is so straight and inflexible because of its high speed, but will this speed be achieved if trains link to the existing network and are delayed. Will HS2 have destroyed swathes of Greenbelt countryside and demolished 100s of homes for nothing?

RAYLEIGH WAVES -
HS2s lack of surveys means that they don't know how much track will need expensive concrete to support it. Rayleigh Waves have been found from research funded by HS2 to have increased levels of vibration when high speeds are reached
on unsuitable soils. This can mean 30 or 40 times the normal level occurring at the higher speed which causes damage to sidings and possible derailment.
Another example of why HS2 may never reach it's intended speed. It has even been suggested that it may be lower than 'normal' train speeds!

NO TUNNELS IN THE NORTH AND CUTTING BACK ON MITIGATION TO SAVE MONEY -

When asked at the select committee hearings how they would make the savings (£9Billion?) they said they could save mcc of it through shallower excavations, which would mean less effective mitigation?

FROM FOI INFO THIS IS NOT A MINING AREA AND NO SUBSIDENCE KNOWN OF -
This IS very definitely a mining area full of faults and subsidence, disused mine shafts, bell-pits (Bluebell wood), geological faults (Windmill Hill, Great Yorkshire Fault near White Horse).

THIS AREA CHOSEN AS A SOFT OPTION -
HS2 didn't expect much resistance, stereotyping of Yorkshire folk, Parish Council meeting HS2 rep alleged to have said 'you're used to muck stacks and pit chimneys'.

LACK OF EXPERIENCE OF CRUCIAL DECISION MAKERS -
How can HS2 Ltd. justify that their Head of Route Engineering has little more than 10 years experience and is effectively learning on the job, yet is making key decisions on the route Britain's largest ever infrastructure project?
Note: The Head of Route Engineering at HS2 Ltd. Graduated in 2004.

TOADS and BARN OWLS -
Today announced that Common Toads are in sharp decline due partly to their traditional routes being cut up, HS2 could cause them to be endangered?
Same true of Hedgehog, Badgers, Foxes? Barn Owls a report says 10% of dwindling UK population of 3000 wiped out by HS2!

The construction traffic could mean hundreds of trucks on local roads, the National Trust commented upon the unsuitability of local roads for this kind of traffic.

Where the depot line joins the main line there is a notable speed difference and a 'collision risk' close to Towers Lane, the Doncaster road and the Springhill estate.
This would be 60 MPH and 225 MPH, but due to this risk the speed at this point should be greatly reduced creating a bottleneck in the system. Perhaps a reason for the depot not being in Crofton?

Brief Summation of Findings Regarding the Proposed HS2 Route (Eastern Section)
Between Denaby Woods and Barnburgh Cliff.
Background Information Re the Writer

I am a resident of the borough of which I am writing. I currently reside at an address approximately 2.5 miles from where the proposed route will pass over Doncaster Road in Mexborough, South Yorkshire. I am a qualified Engineer with much experience of capital expenditure projects mostly within Power Generation both coal fired and biomass fired. I have been assisted in this by several former colleagues who have expertise that I do not. They do not reside along the proposed route and therefore have no personal or conflicting interest in the proposal. I am currently semi-retired. My interest in this was sparked by the fact that The Shimmer Estate is situated on the site of the old Mexborough Power Station and I was curious as to the possible existence of waste materials that may still be in existence under the estate (see item 1 below). I have not included any calculations at this stage for such things a volumes of concrete to be delivered to construct the viaducts/cuttings or any such environmental considerations.

Item 1 – Mexborough Power Station Site

Mexborough Power Station was a coal fired station built in the late 1940's and was demolished in 1988. There is an excellent article in a publication entitled "Electrical Review" dated August 17 1945 which gives full details of capacity, boiler types, fuels burned et al. After demolition the site appears to have been fully cleared of asbestos (apocryphal from developer). In 2011 construction of The Shimmer Estate was started.

Coal fired power stations generate a by-product called pulverised fuel ash which, depending on the fuel burned will have varying compositions although in general terms it will always contain substantial amounts of silicon dioxide (SiO_2) (both amorphous and crystalline), aluminium oxide (Al_2O_3) and calcium oxide (CaO), the main mineral compounds in coal-bearing rock strata. It will also contain at least some of the following elements or substances found in trace concentrations (up to hundreds ppm): arsenic, beryllium, boron, cadmium, chromium, hexavalent chromium, cobalt, lead, manganese, mercury, molybdenum, selenium, strontium, thallium, and vanadium, along with very small concentrations of dioxins and PAH compounds.

Originally the station was designed to burn "Yorkshire Slack", no other information available on the Internet, but is likely over its lifetime to have burned other types of coal. This, according to the article referred to earlier was disposed of by conveying into rail wagons and as such it will because of its dust like nature remain buried under the estate today.

Whilst ever the concrete cap exists this should be construed as "safe". However, any disturbance to provide for example foundationing for the viaduct proposed there will inevitably be a lease both atmospheric and into the adjacent River Don and the canal which bound the estate.

Please note this also

After a long regulatory process, the EPA published a final ruling in December

2014, which establishes that coal fly ash is classified as a sub-category of hazardous waste under the Resource Conservation and Recovery Act (RCRA). Coal Combustion Residuals (CCD's) are listed in the subtitle D, “Special waste” (rather than the less stringent subtitle C, “Solid waste”, which was also considered).

Item 2 – Archaeology Bounded by Windhill Estate, Pastures Road and The River Dearne Old Course

The following records are taken from the website www.heritagegateway.org.uk which is the encompassing organisation for IHBC, Historic England and The Association of Local Government Archaeological Officers. The site contains records of all finds, surveys, listed buildings and digs for England.

The record numbers are those given on the above website and include such things as map references, type of record etc.

HER Number:	**02001/01**
Type of record:	**Monument**
Name:	**Iron Age or Romano-British Field System, Enclosures and Trackways, Mexborough**

Summary FIELD SYSTEM

Grid Reference	**SE 489 004**
Map	**SE40SE**
Parish:	**MEXBOROUGH/CONISBROUGH, Doncaster.**
Map:	**Show location on GoogleMaps (to an accuracy of 100m only)**

Monument Types:

- FIELD SYSTEM (Early Iron Age to Roman - 800 BC to 409 AD)
- SUBRECTANGULAR ENCLOSURE (Early Iron Age to Roman - 800 BC to 409 AD)
- TRACKWAY (Early Iron Age to Roman - 800 BC to 409 AD)

Associated Finds:

- None

Full Description

<1> Crop mark site (on coal measures) - rectangular enclosure and associated field system and trackways.

<2> Immediately to the west of Windhill in Mexborough, and north of a disused coal working. Two sub-rectangular enclosures are visible, the largest being 80m by 70m, with two or three smaller enclosures appended to them or within them [Further information].

HER Number:	**02988/01**

Type of record: **Monument**

Name:

Iron Age or Roman o-British Lane, Mexborough

Summary LANE

Grid Reference	**SE 489 006**
Map	**SE40SE**
Parish:	**MEXBOROUGH/CONISBROUGH, Doncaster,**
Map:	**Show location on GoogleMaps (to an accuracy of 100m only)**

Monument Types:

- ROAD (Early Iron Age to Roman - 800 BC to 409 AD)

Associated Finds:

- FSY2599 - TILE (Roman - 43 AD to 409 AD)

Full Description

<1> Ditched lane continues for almost 1km running SE to roughly west following contours. The eastern most length show as a very strong cropmark with possible deepening. Although not seen on aerial photographs it must have a junction with PIN 02001/03. [This is a continuation of PIN 00094/01].

<2> Mexborough and District Heritage Society report finds of Roman Pottery tile and possible piece of cremation urn from the field off Pastures Lane.

HER Number:	**00094/01**
Type of record:	**Monument**
Name:	**Iron Age or Romano-British Field System and Enclosures, Mexborough**

Summary FIELD SYSTEM

Grid Reference	**SE 492 005**
Map	**SE40SE**
Parish:	**MEXBOROUGH/CONISBROUGH, Doncaster,**
Map:	**Show location on GoogleMaps (to an accuracy of 100m only)**

Monument Types:

- ENCLOSURE (Early Iron Age to Roman - 800 BC to 409 AD)
- FIELD SYSTEM (Early Iron Age to Roman - 800 BC to 409 AD)

Associated Finds:

- None

Full Description

<1> Possible field system. 1 rectangular enclosure. Wide tracking (possibly recent). For finds in the vicinity see 1959 to 1965. [The section of trackway running through this site is a continuation of PIN 02988/01 SH 30/06/2009].

The sites are linked if examined by map reference and should require full investigation and dig if the proposed route is agreed. Costs will have to be born by HS2 Ltd and estimated time for the investigations, from an independent source at the University of York, is 9 to 12 months.

Item 3

Active Landfill Site Located Off Pastures Road.

It is proposed to drive a cutting approximately 8 to 10 metres deep through the centre of the site.

The bare facts as given on the DMBC website. Landfill site

Mexborough:

- the site is located off Pastures Road

- approximately 8 ha

- waste disposal first took place in this old clay quarry, owned and operated by the Yorkshire Brick Co. of Stair foot, Barnsley, in November 1978

- it became one of the landfills operated by South Yorkshire County Council and then by Doncaster Council until it's final closure in the early 1990s

- the site has an active gas extraction system which consists of 34 extraction wells linked to two flare units located within separate compounds. If sufficient methane is being generated gases are burnt off by the flare units. Thirty-five gas monitoring boreholes connected to a gas analyser unit are installed and can be monitored remotely by the Pollution Control section. Every Monday and Friday the gas levels from all the installations on the system are recorded and submitted to the Environment Agency.

There are three relevant factors to consider here: -

1./ The site is based on and old clay quarry which was not fully quarried out and is therefore lined with clay. It is still having Methane gas flared off and is therefore still chemically active creating both Methane and Carbon Dioxide which because of the nature of the substrate, i.e. clay can only escape upwards. Once digging commences quantities of these gasses will inevitably be released into the atmosphere in an area bounded on three sides by occupied housing.

2./ Because of the nature of the site and the uncompacted and diverse nature of its contents it will be impossible to consolidate the material to form the sides of a cutting and will thus require the removal of the contents of the entire site to enable the line to be constructed.

3./ Because of the dates of use the types of waste likely to be in the site may include such things as lead/acid car batteries, lead pipework, old equipment containing CFC's and other odious materials which now, not then, have to be specifically disposed of by special methods. Presumably all this material will have to be sifted and disposed of according to current regulations. Given the area to be 80,000 square metres and assuming a conservative 20m depth this gives HS2 roughly 1.6 million cubic metres of waste to grade, classify and dispose of.

<u>Item 4/5</u>

The proposal contains a requirement for two major cuttings. Travelling

Northwards the first of these will be through Denaby Woods and the second through Barnburgh Cliff both areas of great beauty used extensively by local communities for leisure purposes, weather permitting. Whilst neither are classified as being of Special Scientific interest BOTH are designated Regionally Important Geological/Geomorphological Sites (RIGS) according to both Doncaster Council and The Department of the Environment thus placing more onerous and stringent requirements for planning of HS2.

This is a preliminary report only and will need further study by others but I hope it is at least a useful starting point.

IMPACTS AT BRAMLEY

The demolition of at least 70 homes plus business property demolitions make the impact on this town significant.

IMPACTS AT HOOTON ROBERTS & FIRSBY

High Speed Rail 2 – Long Term Effects and Regional Concerns
Opening Statement

This report has been created on behalf of the residents of Hooton Roberts and Firsby, who have shown great concern over HS2 Ltd.'s recent decision to change the original 'preferred' route to Meadowhall, to a route which now sets to affect their homes, businesses and cause major damage to the surrounding environment. Upon careful analysis of the South Yorkshire Options Report (SYOR) and the David Higgins Sheffield & South Yorkshire Report (DHR), it is clear that the new route has been proposed under false / invalid information, a lack of local topography knowledge and disregard to local communities. It is also apparent that the newly proposed route will only benefit Sheffield City Centre, whilst the rest of South Yorkshire will either have affected either negatively or not at all.

We hope that by outlining our concerns in this report HS2 Ltd will be able to address some serious concerns raised by our communities and rectify the benefits of this route to the rest of South Yorkshire.

Phase 2b MI8 Eastern Route Design Irregularities and Regional Impact Costs
(Constructional and Operational)
In the SYOR and the DHR it states that there is a £1 billion cost saving to be made if the new route to Sheffield City Centre is selected, against the original 'preferred' route to Meadowhall.

- Q: However, several financial experts (including the National Auditing Office) have claim that these figures do not stack up, and the SYOP does not provide a valid finical comparison of the two routes.

Figures from NAO actual pin down the saving to around £768 million which doesn't even take into account the additional £640 million of additional costs the Meadowhall route was planning to use (including an additional £32 million in noise mitigation). Furthermore, an additional £150 million was from the Meadowhall route base target was omitted for the east of Rotherham 2k tunnel.

Taking into account all this additional cost it would appear that the original route to Meadowhall or the Victoria Street route may offer the best cost saving if options were broken down fairly.
Response?

- Q: No information has been provided on the operational costs or the service costs of HS2. Why is this information not been published and how can HS2 guarantee that their service will be competitive with classic rail services already in operation, without raising regional rail costs (like on the West Coast Rail line)? Philip Hammond made a statement to the Transport Select Committee in 2011, stating that the HS2 Business Case to sell fares at the same as cost as conventional rail services on the west coast up north would be extremely difficult. Response?

- Taking into account that the new route will have a smaller customer base and higher operational costs than the original preferred route from Meadowhall, how is HS2 adapting its business module to ensure that its services will provide the target ROI and value for money service that was originally planned. Response?

- Q: HS2 has already spent £2 billion and hasn't laid any track. If the new route is approved, it will go through another consultation period which could last another 12-15 months. Being that the consultation period for the Meadowhall route has already been completed, why haven't the additional cost involved in consultation being factored in to the £1 billion cost saving (£534 million).
Response?

- Q: If the Phase 2b MI8 eastern leg route was approved, would HS2 Ltd agree to release a quarterly cost summary so that the public could keep track of the cost savings made as highlighted in the SYOR and DHR, or would it be open to a publicly sponsored / supported audit of the project during Phase 2b.
Response?

Environmental Impact (Refer to DWG3)

The HS2 Business case states that where possible impact to local wide life and the environment must be reduced, but in the SYOR HS2 submits that THE environmental impact will be greater on the new route than on the original preferred route to Meadowhall.

- Q: From reading the SYOR it is apparent that HS2 have completely overlooked the impact that a high speed rail line will have on rural areas of South Yorkshire which contain rare animal species, National Wildlife Reserves and Ancient Forests and areas of significant scientific interest.
Response?

- Q: In April 2016 the UK signed up for the Paris Agreement, agreeing to reduce its overall greenhouse gas output by 1.55%.

- Phase 1 of HS2 will create over 1 million tonnes of carbon during construction.

- HS2 requires 3 times as much power to operate than existing rail systems

This is information is again has been omitted from HS2's reports as it points out stubborn state of thinking from a technological and environment view.
Response?

Depreciation of the UK Farming Industry (not taken into consideration)

The phase 2b route will negatively affect local businesses and land owners, especially farmers who will not only loose land and potential short term capital opportunities during construction, but long term financial stability as some fields will no longer be suitable for farming once HS2 is operational (58 farms effected nationally). Most of our regional farmers have been working the land for generations and are now in danger of having their lively hoods taken as land reduction will diminish their annual income. Once a member of the EU the UK received £3 billion per annum in additional farming support, now post Brexit we see that the new government is taking no measures to refund this capital, nor provide any other support to one of Britain's great declining industries.

- Q: How does HS2 rectify contributing to the decline of the UK farming industry?
Response?

- Q: How will HS2 support affect farmers in the long terms? Onetime financial pay offs cannot substitute generations of future work and financial stability. Response?

Topographical and Congestion Concerns (Refer to DWG1 & DWG2)

The SYOR states that the Meadowhall option will raise several topographical and congestion issues during construction and operation.

- Q: The SYOR doesn't outline in great detail the topographical restrictions of BOTH routes (Meadowhall and M18 Eastern Leg alternative), nor does it provide an in depth comparison of the possible issues they may occur and there cost implications. We have reviewed land composition plans, geological survey maps and deep mining reports which suggests that a route through Rotherham 'as planned' would produce the same / if not more design restrictions, running through;

- Deep Mines

- Areas of high land movement / instability o Flood
plains
- High concentrations of Dolomite, Limestone, Sandstone, Coal

It is also apparent that HS2 rejected the MI8 Eastern Leg Route back in 2009 because of major topographical concerns. Response?

- Q: HS2 have suggested that construction within the Meadowhall region would greatly congest the area and raise air pollution level for the surrounding population. However, HS2 have not discussed or compared how Sheffield city centre (which does not provide as many access options as Meadowhall) will be affected in relation to the original proposal. Furthermore, the Meadowhall area maybe a highly populated/dense region, but it a lot of the surrounding buildings are commercial and industrial, not residential like on the MI8 Eastern Leg route proposal. Response?

Disruption to the Public and Businesses

HS2 has outlined in the SYOR and the DHR that the new route will create less demolitions and disruption than the Meadowhall route as it runs through less clustered residential and Business areas in the region.

- Q: We have calculated that on the original Meadowhall route there were 102 recorded residential demolitions, whilst on the new route there is just under
500. Response?

- Q: There have been hundreds of reports from neighbouring HS2 action groups (including our own) stating that serval of their members have not been notified that their homes are within the proposed HS2 line safe zone area. Why is HS2 unable to look on a map and efficiently communicate with
residents that will be affected and why can't HS2 produce an accurate figure on the number of houses that will be affected. Response?

- Q: The SYOR states that noise pollution will be reduced by running the new route through tranquil country land instead of an area with a high level of back group noise from the motorway. Where is the data to back up this statement, along with the Noise & Vibration Assessments for regional rural living areas?
Response?

- Q: On HS1 residents located with a 60-meter proximity to the HS rail route (the safe zone area) fell under "compulsory purchase" and were offered full market value (prior to blight implications) plus 10%. No such compensation plans have been announced for HS2 as of yet, nor have plans for properties being blighted. Response?

- Q: Taking into account current housing rates, costs of relocation and stamp duty, most of the families affected will actually lose money. Response?

- Q: Several reports have been recently released into the effects of Rayleigh Waves (which HS2 will create even below its top speed) and how they could cause major damage to surrounding areas with deep mining, unstable land compositions or old buildings. How is HS2 planning on supporting these communities and protecting valuable heritage and historical sites around the region close to the newly proposed route. Response?

- Q: Because of the 'backwards' development and planning structure that HS2 have adopted a lot of people have been left ln limbo; unable to sell or develop their homes and unable to make any long term living plans. The Exceptional Hardship Scheme (EHS) is extremely restrictive in terms on compensational reimbursement, especially to those who have been fed false / incomplete information from HS2 or have not been notified about HS2 at all. Furthermore, as noise and disruption analysis have not yet been completed (as informed by HS2), residents located near to the track will be unable to ascertain if their property value will decrease. How is HS2 planning on supporting and compensating these people. Response?

Connectivity and Demand

The main purpose of HS2 is to 'rebalance and develop Britain's infrastructure', as well improving classic services to deal with projected rail demand statistics:

- Q: Why is the new route being promoted under the NPH banner and a national infrastructure project when it excludes over 770,000 of potential regional users? Is HS2 expecting these people to travel into to Sheffield City Centre during rush hour to catch a train, or use other existing rail services that are closer? Furthermore, the 'Loop' required on the new line to connect Sheffield with Leeds has not been factored into the new cost total of Phase 2b.
Response?

- Q: The SYOR states that Meadowhall is the preferred option because it better serves the South Yorkshire region and connects well with networking national regional transportation services. The new route fails to accomplish this and attempts to substitute Meadowhall Shopping Centre, a popular regional destination with a spur to Chesterfield City Centre. Meadowhall Shopping Centre provides a versatile shopping experience that a relatively small city centre like Chesterfield cannot. How does HS2 expect to draw customers away from the own city centres to retain the same travel demand as Meadowhall.
Response?

- Q: The HS2 Business Case states that 27% of people will use HS2 'just because it is there'. How does HS2 back up this statement when you factor in a rapidly increasing negative attitude towards HS2 in across Britain (now including Birmingham - LBC) and raising rail costs. Response?

- Taking into account the results of the EU referendum, it is logical to assume that the demand to travel to London or in fact Britain will be less that what has been stated in the HS2 strategic case (created 2013 pre-Brexit). Therefore, wouldn't it make more sense to prioritise HS3? The Institute of Public Policy Research, former Chair of the City Growth Commission Jim O'Neill and several other sources have argued this point on several occasions. Response?

- Last year the Department of Transportation released a report into the projected capacity figures of HS2. They found that train data from public records had not been used, certain services had not been accounted for and that the HS2 strategic proposal failed to accurately outline cheaper modifications to existing services, such as increasing carriage numbers and changing to peak time services. 51M have also project that by just replacing one first class carriage to a standard carriage, increasing the size / length of current trains and making a couple of scaling operations on the West Coast Main line, current capacity could be trebled. Response?

National Project Concerns and Data Irregularities Route
Feasibility
Taking into account our previous points made on cost, the new route should either provide a better overall service to South Yorkshire, connect north cities effectively so the NPH initiative can be progressed and provide quicker travel times to the capital in order to meet the criteria set in the HS2 Business case and the SYOR. We see however that the new route only better serves Sheffield in terms of accessibility, it increases the capital run time by 14 minutes, doesn't include a connection to Leeds and makes Doncaster the better option for most regions for long distance rail travel. After carrying out further research into this matter it became clear that Sheffield Regional Council invested just under £200k into a report which requested that the original route, which was the preferred option of HS2, be rejected in favour of a City Centre orientated route, which was discarded in 2012 by HS2 for the following reasons:

- It would include more demolitions

- It would affect more SSSI's

- Would be difficult to construct due to unforeseeable historical mining works Response?
Issues with Meadowhall

The SYOR states that consultants were used to determine if constructing the HS2 hub and rail line at Meadowhall would be possible. Although their results highlighted several issues that would need addressing, they don't actually say that the original route is impossible or better than the newly proposed MI8 Eastern Leg Route.

- Q: Have similar calculations been made on the new route to determine that all the regional topographically issues can be efficiently, financially and construction-ally addressed, and if so where is the information to support this. Response?

Doncaster still better

The newly proposed route on the M18 Eastern leg doesn't just fail to meet the needs of the South Yorkshire region, it is also 14 minutes slower to London than the original preferred route to Meadowhall, the station will be less accessible during rush hour traffic and unless further NPR investment is assured it will not contain a connection to Leeds. A large portion of our

regional support believes that Doncaster would still be the most viable option for them. Response?

Last Minute Design Alterations

During the Phase 01 consultation stage HS2 made several minor design alterations to reduce public disruption and avoid significant topographical, geological and environmental issues. This included adding tunnels, changing the lay of the track and moving the track position. How likely is it that the new route position will change so that effects even more residential buildings, of directly intersects with villages located next to the new route? Response?

Consultation with Rotherham Council

It is our understanding that HS2 have been liaising with regional city councils as far back as 2009 (before the preferred route Meadowhall was 'shelfed'). Can you confirm / provide details of Rotherham Metro Borough Council's stance on the current reroute. Response?

Benefits to the North

HS2 Ltd have stated that when the project is operational over 3 times as many passenger journeys will run to the capital, suggesting that most of benefits will be disturbed to the south (specifically London).

Additionally, Teresa May has recently stated that investment and development projects in the north will be reduced in favour of development in the south east. These are just two points of many that highlight Westminster's intensions to suck resources from the north and develop / involve areas that will contribute to their ambitions. This has been made even more apparent by HS2's recent decision to change the Phase 2b route, which would have benefited all of South Yorkshire, in favour of an option that allows Sheffield City Centre to absorb all the benefits. Response?

Technology and the Environment

The HS2 Business case concludes that a new High Speed Rail line is the best option to achieve NPH ambitions, whilst rebalancing Britain and developing the infrastructure. The report reaches this conclusion by comparing HS2 against other alternatives such as developing existing road networks, existing rail networks and aviation services.

- Q: The report however does not take into consideration fast developing technologies such as driverless vehicles, drone freights and full immersive conferencing tech that are set to have massive impacts worldwide in the next 15-20 years (before HS2 it scheduled to completed). The report also fails to

mention that other countries using this technology like France and Japan on scaling down the operations for cheaper, more advanced technologies.
Response?

- Q: Several research papers have been released in relation to HS2 operations and the production of Rayleigh Waves, which highlighted trains could derail at top speeds and create mayor land subsidence.

Two options were taken into consideration by HS2 prior to performing any in depth research; that a concreate slab be added underneath the bottom of the track (increasing costs, construction time and noise pollution levels), or lower the speed of the trains to under 200kph. What is HS2 Ltd.'s current stance on this issue and has any research been carried out since 2011 when HS2 said that nothing had been looked into. Response?

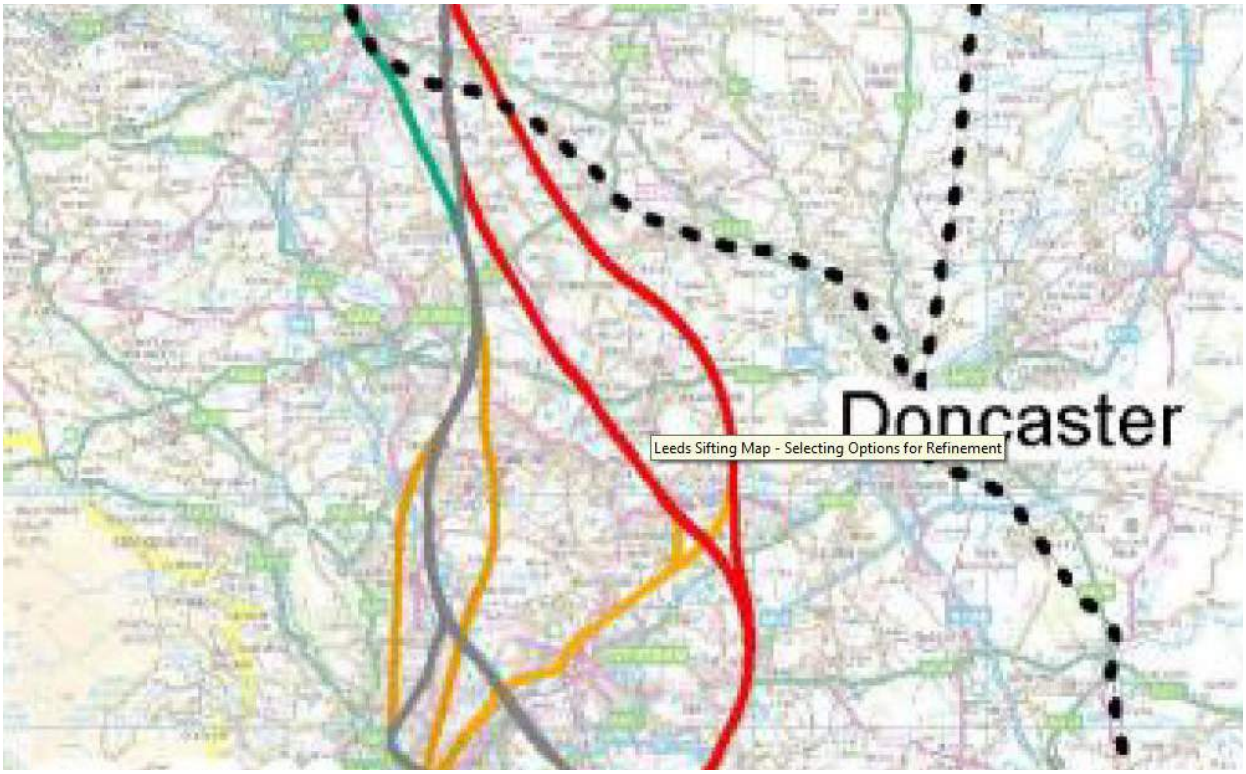
Freedom of Information

Serval neighbouring groups (including ourselves) have issued Freedom of Information requests to HS2 to attain a greater understanding on how the local area will be affected. These requests

APPENDIX 8

"EAST OF ROTHERHAM" - THE OLD HISTORY OF A REJECTED ROUTE

One of the central claims of the Higgins Report was that a new approach was needed, which led to the surprise announcement of the new M18 eastern route, which was sprung on local authorities, MPs and public alike on July 7th 2016. This bombshell took some many days to sink in. Like a Chapter from George Orwell's distopian novel '1984', one day HS2 Limited was proclaiming the connectivity and benefits of the 2013 Consulted Meadowhall route and critising all notions of a City Centre location, and the next thing it had completely reversed. Now, a city centre location and new route were far superior to the old consulted Meadowhall route, which was no longer acceptable. Three years of advocacy had gone in a split second. Many people wanted to know what had changed to justify this U-turn.



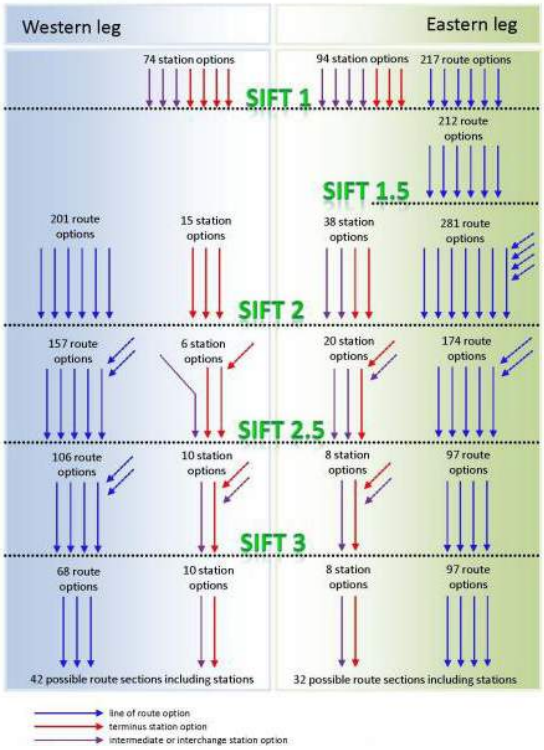
Options for phase two of the high speed rail network *HS2 Ltd*

East of Rotherham
(included as part of 'Doncaster' on figure 5.21 above)

5.5.9 A route option was considered that would broadly follow the A1(M) north of the Doncaster area with the aim of following an existing transport corridor. The A1(M) corridor passes around 6.2 miles (10km) to the east of Leeds and as a result a greater length of new track would be required in order to provide the connection into Leeds compared to other comparable routes. The route would be challenging to construct, would impact on a number of SSSIs and would require more demolitions than comparable routes.

(7.3.27) The routes east of Rotherham would be sufficiently far to the east to avoid the large concentrations of shallow mining and opencast working associated with the Middle Coal Measures strata, but would not be without risk due to unknown historical data.

(7.3.28) The consequence of these routes would be that they would not directly serve Sheffield and access could only be achieved by a spur off these routes, adding to the capital cost through additional route length. Journey times to central Sheffield would be less competitive than a direct route. There would be potential for placing an intermediate station on a through route but this would be remote from the urban areas where demand is concentrated, and these station options were ruled out.



FINANCIAL DIRE STRAITS

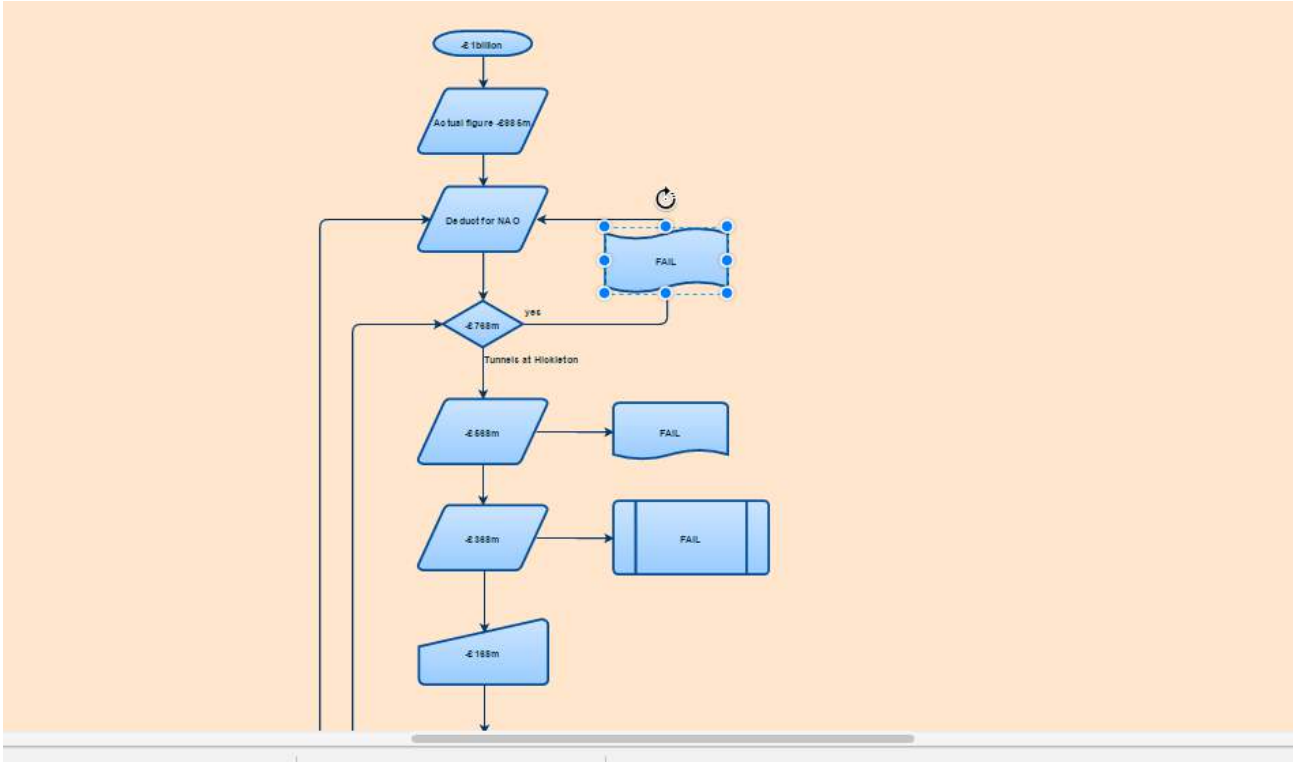
From March 2016, the Public Accounts Committee of the House of Commons and the National Audit Office were pressuring HS2 Limited to rein in budget overspend and make cost savings. With a requirement to save £7billion, HS2 Limited suddenly produced a package of £9billion of savings with a flagship
£1billion of cost savings on abandoning the Meadowhall front and centre as hard proof of achievable reductions. This came after a backdrop of lobbying by Sheffield City Council, Sheffield business organisations and newspapers to see a switch from Meadowhall to a city centre location backed with £190,000 of council taxpayer's money funding reports and £6,000 breakfast briefings. From November 2015, after Leeds City Council had achieved a change in station location, though one that did not trigger a route change, pressure was building on HS2. The main driver in plans was not connectivity as claimed, nor the extensive review of the 217 previously identified lines of route (LOR) from 2009/10. Instead, using the basic costing data from these LOR, a report seems to have been made to identify which route would cost the least. East of Rotherham was identified as saving the most, and it was amended to maximise this by removing high cost elements such as the 2km £200m tunnel specified at Hickleton.

A recent Freedom of Information request by a Mexborough resident has identified that HS2 in addition to the Secretary of State, Patrick McGloughlin, and government officials secretly visited Mexborough on a number of occasions in April and May 2016 to look at ground conditions. This was presumably due to the realisation that the newly constructed Shimmer Estate was not on the original maps and to assess the demolition damage. While local MPs, councillors, residents and media were kept it the dark, plans were not revised but progressed. It appears that in May 2016, HS2 Limited decided to abandon Meadowhall as part of a cost saving programme. Old routes from 2011 were examined, presumably now factoring financial savings as paramount as well as speed and perceived ease of construction.

Upon this, a particular line of route ("East of Rotherham") was chosen. Work was started, an information event planned, village halls and community centres booked, engagement staff hired, leaflets printed and the Higgins Report booked. Maps were drawn up on 25th of June and the report was presented to the media on July 7th.

FALSE ACCOUNTING: HOW THE NUMBERS DON'T WORK

The most compelling justification for the longer and more damaging M18 Eastern route is the claim of a £1 billion cost saving from the HS2 budget.



The claimed £1 billion can be quickly reduced by reality in this way:

£1 billion (actually £985m) – NAO reality adjustment = £768m - £534m one off saving for Meadowhall station = £234m less £200m for 2km Hickleton Tunnel =
£34m - £200m for Bramley tunnel = £166m extra cost - £200m for Mexborough Tunnel = £366m - £200m for Crofton Tunnel = £566m

If unspecified tunnels are not built, then the high demolition numbers and higher noise mitigation costs will add an additional c. £300m. This would see
£266m of additional cost over Meadowhall.

Another cost comparison is on a like-for-like basis, where the £534m saving from not building the Meadowhall station, as well as associated viaduct and property acquisition and in addition to the 2km Hickleton tunnel would see an additional cost of
£400m for the M18 Eastern Route.

-£1,000,000,000

The amount claimed to be saved by switch to new M18 Eastern Route in the July 2016 Higgins Report

-£985,000,000

The actual claimed saving from HS2 files obtained under FOI Sept 2016

-£768,000,000

The figure after challenge by the National Audit Office May 2016

+£34,000,000

The saving once one off Meadowhall station costs are removed on a like for like basis & proposed LOR 2km Tunnel at Hickleton is included from original proposal

+£400,000,000

The Final additional cost of the longer M18 Eastern route after full land purchase and compensation is calculated for the 489 residential demolitions needed & 10,000 households within 300m full mitigation package Green tunnels, & uncosted engineering, mining, flood, highways, & mining

Engineering & Construction costs

Rail engineers and local communities along the route feel that additional highway, environmental and geological costs are inevitable along the new route, which then will run into several hundred million pounds extra cost. This means that even with the Meadowhall saving, the new route will end up more expensive to build than the consulted and recommended route of 2013-16.

AN OLD BAD IDEA

East of Rotherham had been one of the many original lines of route from a long list which had been “parked” or rejected in the year-long sifting process. Planners had been tasked with finding corridors of countryside north to Leeds that were free of protected sites. Unfortunately for the Yorkshire coalfield communities, the disused and reclamated waste - which was now greenbelt where a proud coal industry had once stood before deliberate closure for

political reasons by the 1983-97 Conservative governments - was now a seemingly ideal corridor to Leeds. Ideal, perhaps, if you neglect to consider the plight of the deprivation among sectors of the mining villages along the route which were now benefiting from an influx of investment and incomers and a growing leisure, self-employment and service sector. East of Rotherham was based on old maps provided by Ordnance Survey, which did not show the many housing developments constructed since the 2010 Liberalisation of planning controls under the NPPF. Such developments by entrepreneurial Yorkshire Housing groups such as Strata Homes, Harron Homes, Redrow Homes bringing vitally needed New Build Homes onto a restricting market.

East of Rotherham was rejected by HS2 Limited because of the unsuitability and length of the route compared to Meadowhall. There were more demolitions, noise impacts at Bramley, Mexborough and New Crofton.
Connectivity within South Yorkshire was inferior to Meadowhall. The route had envisaged a depot at Hemsworth-Havercroft or Cudworth. The Route had required a 2 km tunnel under Tour de Yorkshire Listed Village Hickleton.

WHEN MEADOWHALL WAS RIGHT

A snippet that might have been missed though - in a BBC report in 2015 it was stated that "*It was announced by HS2 in 2013 that a new station linking Sheffield with London and Birmingham via the HS2 high-speed rail network would be situated at Meadowhall shopping centre."*

Katherine Button, of HS2 Ltd, said: "The Sheffield Meadowhall station is the best location to serve the wider South Yorkshire region. "We have scrutinised other options including a city centre site, but Meadowhall provides significantly better connections to more people and places across the region and at a lower cost, and provides the quickest onward journey times to Leeds, Newcastle and Scotland. "That is why the majority of Sheffield City Region authorities, as well as Leeds City Region and East Midlands authorities support Meadowhall, and are keen to see faster progress in the coming months."

Creating jobs, houses and accessibility

HS2 Ltd.'s analysis suggests that the Sheffield Meadowhall station could support between 4,000 and 5,400 jobs and between 250 and 300 houses. The journey times to London would be 1hr 9 minutes while Birmingham would be 38 minutes away.

Connecting with the region

This station is well placed to encourage jobs and growth in the South Yorkshire area, and already has excellent connectivity with existing public transport networks: up to nine trains per hour run into Sheffield Midland station, with a journey time of as little as five minutes. Trains also connect Meadowhall with Rotherham, Barnsley and run beyond that to Wakefield, Doncaster and Scunthorpe. The site is also close to Junction 34 of the M1 motorway, making it accessible by road.

See below a document presented to HS2 Limited on August 2nd 2016, still awaiting a response.

CROFTON'S SUBMISSION TO HS2 LIMITED ON AUGUST 2ND

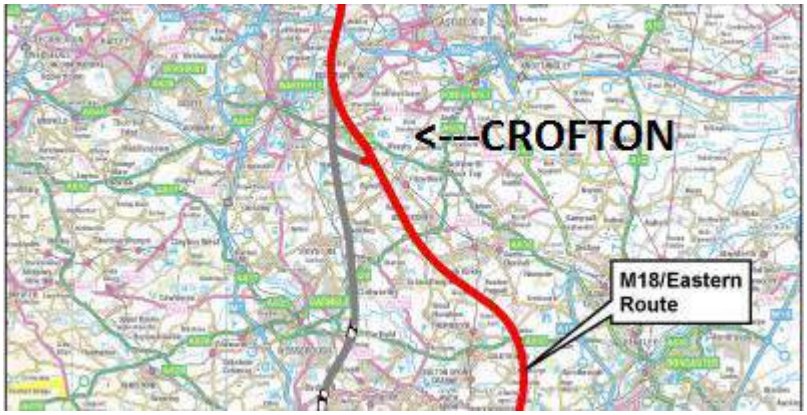
A Response to the HS2 Limited "Sheffield & South Yorkshire Report 2016 of 7/7"

HS2 an engine for destruction

The bombshell Higgins Report of 7/7 is an attempt by HS2 Limited to resolve the dilemma over the location of a HS2 station in Sheffield and the route connection to Leeds arising from this. Firstly, it is an admission by HS2 Limited that the original Meadowhall Station & route of 2013 was a mistake.

It is asserted incorrectly by Sir David Higgins that the new recommended route (M18 corridor) will have less impact on communities than the original 2013 proposal & that it will save an estimated £1 billion.

This response is from the affected communities of Mexborough in South Yorkshire who face the demolition of 212 newly built homes & Crofton in West Yorkshire which has significant impact on 9,000 residents from RSM Depot & Track.



We challenge this assertion on impact which has not been backed up with evidence from HS2 Limited. Our communities will be devastated by HS2, and the sudden announcement has created chaos for our residents in their personal lives, house prices, mortgages & future plans. Our estimates of impacts do not suggest at this stage that the above statement on impact improvement in new route is true and accurate. We also challenge the £1 billion saving as it does not take into consideration, the increased geological spend in West & South Yorkshire through running high speed through disused coalfields & construction of Sheffield link line.

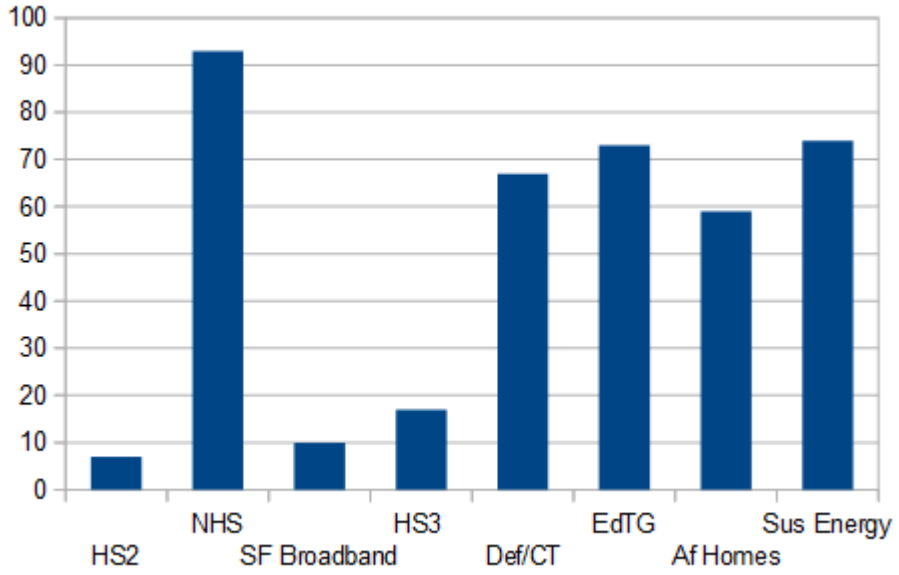
We also believe that the HS2 project is now out of control in terms of budget & activities and that a Strategic Review by the Department of Transport & Department of the Environment is now needed.

BREXIT

After the Referendum vote of 23 June, the democratic mandate of improved High Speed links to EU members is now questionable, as also the need for the UK to integrate into an EU High Speed Rail System. The state of UK finances & economy no longer supports a £70-80 billion project. A Comres Poll showed that 52% of Voters in Yorkshire oppose HS2 at the £70 billion cost level.

VOTER OPINION IN YORKSHIRE

Polling in 2015 by Comres showed that only 7% of public in Yorks/Humber felt HS2 was a priority compared to 93 % for NHS & priorities such as Sustainable Energy, Affordable Homes, Education/Training, Defence & Counterterrorism, HS3, & Superfast Broadband.



NORTHERN POWERHOUSE

It is the wide belief in Yorkshire that improved slow or fast rail connectivity between Manchester-Leeds, Manchester-Sheffield, Liverpool-Leeds-Hull, Huddersfield-Wakefield is essential but that existing Virgin Fast Rail links to London from Doncaster on the ECML adequately support the region and that HS3 should proceed & replace HS2.

SHEFFIELD-LEEDS CONNECTIVITY

We feel that it is against natural justice for a rail link between Sheffield and Leeds to bypass theses cities and impact on West & South Yorkshire when a direct route option exists. We note that Sheffield Council spent £190,000 lobbying HS2 for Route 4 to be sited though our villages and not in the Sheffield region.

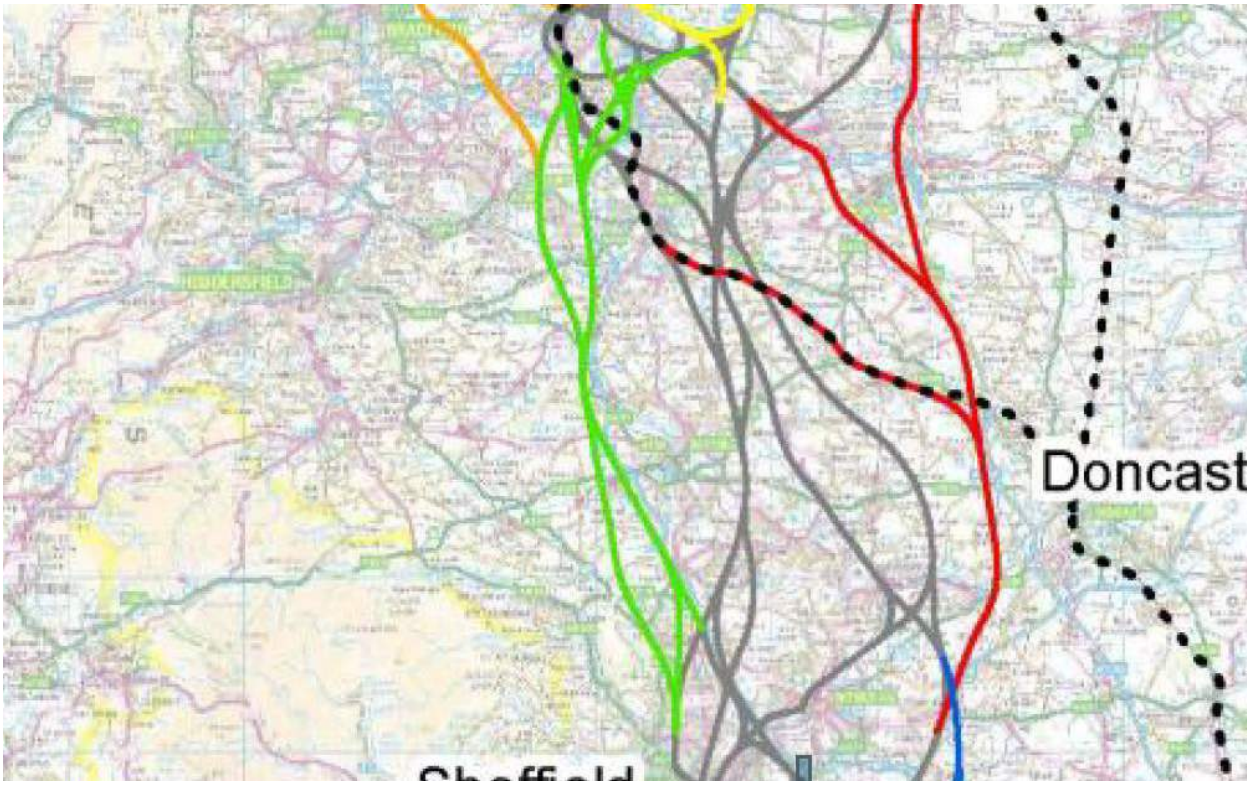
HS2 ALTERNATIVE ROUTES

We assert that HS2 Limited has failed in its statutory duty to examine all alternative route proposals as required by law and we restate some these here. We believe that a decision to adopt the Route 4 proposal without formal consideration of alternative routes is unlawful.

APPENDIX 9

ALTERNATIVE LINES OF ROUTE IGNORED BY HS2

EXISTING HIGH SPEED TWO LINES OF ROUTE WEST OF ROTHERHAM LOR(CUDWORTH) MEADOWHALL ROUTE LOR WITH MIDLAND LINE WEST OF BARNSLEY (HIGH SPEED UK LOR)



Routes to the West of Barnsley

(7.2.20) Two routes were considered between Sheffield and Leeds that would pass to the west of Barnsley and broadly follow the M1 corridor. These two route options would be common to south of West Bretton, here they would diverge with one route continuing to follow the M1 to Leeds whereas the other would take a more direct route that would pass between Ossett and Dewsbury.

(7.2.21) North of Sheffield the M1 runs through hilly terrain. Several towns and villages have grown towards the motorway treating it as a growth boundary. These two factors would result in any railway alignment through this area requiring the extensive use of steep gradients, tunnels and significant earthworks.

(7.2.22) North of West Bretton, the most significant engineering challenge is the Calder Valley and the string of towns that run along its northern bank. A direct route into Leeds that ran between Ossett and Dewsbury would be able to cross the Calder Valley on a viaduct. However, no acceptable route for a branch off this route linking to the ECML via the low ground on the eastern side of Leeds was identified.

(7.2.23) A route north of West Bretton that would follow the M1 corridor would be able to link to the ECML via eastern Leeds, but this link would either have a low (<200kph) design speed or would be costly because of the urban nature of the area near the confluence of the M1 and M62. The crossing of the Calder Valley would likely require a tunnel if it were made close to the M1 due to the need to minimise residential demolitions in Horbury.

Introduction

The residents of the many South and West Yorkshire communities that lie in the path of the revised HS2 route generally support the principle of developing improved high speed rail links if this can be done by Low impact and low cost lines of route between the Northern Towns and Cities. They believe that if correctly designed, HS2 could achieve major benefits for these communities, for the whole Yorkshire region and for the entire nation. They note that 55-80% of Yorkshire people in polls oppose the cost, route and impact of the current scheme. Of particular importance is the improvement of trans Pennine links as part of the Northern Powerhouse. Haven chosen and advocated a route for three years (Meadowhall) now abandoned and rejected, a new rushed and previously rejected LOR "East of Rotherham" if it were rejected and found wanting would jeopardise the entire Eastern Leg. Moreover it the wide scale belief that the high costs of Phase 1 will cause the project to run out of funding and support in Birmingham, Crewe or Manchester. A poorly selected LOR to Leeds would add to this probability. So for those who support the idea the idea of a High Speed Rail in Yorkshire, (a minority) the high cost, high impact & low connectivity of the Eastern Route threatens such a prospect. The current Secretary of State Chris Grayling would be best advised to visit the affect communities, not in secret but in public by their invitation before accepting a recommendation from HS2 which is not fit for purpose.

However, the Yorkshire communities are deeply concerned that the current HS2 scheme will not achieve any of its connectivity and capacity objectives, and will instead impose excessive and unnecessary impacts on the communities that lie in its path. The Yorkshire communities believe that the current HS2 proposals lack any coherent strategy, and must be radically redesigned to conform to a structured and transparent set of principles which will ensure the delivery of worthwhile transport benefits, and simple value for money, for all.

With HS2 Ltd failing to offer the necessary leadership in the development of these structured principles that might best serve the public, and the wider public interest, the Yorkshire communities have taken it upon themselves to put forward their own set of principles. These are listed in the following paragraphs.:

Principle 1

The primary purpose of new high speed railways is to improve the ability of the national rail network to provide 'hugely enhanced capacity and connectivity' between the UK's major conurbations, and between its principal cities.

Principle 2

Given current regional imbalances, which are reflected in the often poor links between many regional cities, there must be a greater priority put upon improving interregional links than upon improving already fast links to London.

Principle 3

The ideal situation would be for all principal UK cities (of circa 200,000 population or more) to be directly interlinked (i.e. requiring no change of trains) by services of intercity quality, operating at hourly or better frequencies between centrally-located stations.

Principle 4

It must be recognised that it is possible only to construct a limited length of new high speed railway, and that the greatest practicable interconnection between the UK's many regional conurbations will be achieved through full interconnection between the new high speed lines and the existing rail system, to form a single enhanced national network.

Principle 5

To maximise economic and environmental benefits, the new line must be accessible to the greatest practicable population, whilst at the same time preserving the integrity of existing business interests. This generally dictates that high speed services should operate from existing city centre stations.

Principle 6

To maximise accessibility, and also to compensate for possible local environmental impact, proposals for new high speed lines should be developed to provide greater capacity and opportunity for local services.

Principle 7

Proposals for new high speed lines (and all elements thereof) should be fully compliant with all relevant aspects of public policy including:

a) A fully integrated public transport system, offering optimised interchange between all modes including high speed/intercity rail, local/regional rail, buses, international aviation and the private car.

b) Transport sector CO2 emission reductions in conformance with the 80% reduction target of the 2008 Climate Change Act.

c) Balanced development of regional economies to redress current economic imbalances, with particular attention to committed initiatives such as the 'Northern Powerhouse' and the 'Midlands Engine'.

d) Respect for existing rural environments and green spaces, and concentration of development upon existing urban centres.

e) Fair, transparent and open Government.

f) Minimised public expenditure, in terms of both capital expenditures on new construction and ongoing subsidy of the entire rail network.

Principle 8

All elements of new high speed railway proposals, including precise line of route, links to existing network and station and depot locations, should be designed to conform best with all of the principles listed above.

Local Primary Concerns with HS2

The Yorkshire communities are particularly concerned that current HS2 proposals are being developed as an exclusively north-south initiative. No thought appears to have been given to the greater need for improved east-west trans Pennine connectivity and capacity. As a consequence, HS2 appears to be having the perverse effect of making it more difficult and expensive to implement the improved connectivity and capacity necessary to achieve the transport and economic goals of the Northern Powerhouse.

The Yorkshire communities are also concerned that HS2 has been developed so far with almost exclusive reference to the primary cities of the region i.e. Sheffield and Leeds. No account

appears to have been taken of other major population centres and communications hubs, for instance Doncaster, Wakefield, Bradford and Huddersfield.

The latest development of the HS2 proposals, to delete the earlier Meadowhall station proposals for Sheffield, appear to greatly limit the benefits that HS2 will offer even for Sheffield. This will not only damage Sheffield's economy, but also the economic interests of the many surrounding communities which at the same time will suffer the excessive local impacts of building HS2.

Considered as a whole, HS2 appears to be a badly designed and unfit for purpose proposal that is incapable of meeting any of the aims on which it has been sold too public and politicians alike. We do not consider HS2 to be acceptable, either from a local or a national perspective. Moreover, we believe that there have been multiple failures which have seen alternative proposals – in particular the High Speed UK scheme – rejected for trivial and possible selfish reasons, and which have seen the hugely suboptimal HS2 proposals developed to the disadvantage of all but a narrow technocratic elite.

The extent of HS2's failures can be seen in the following tabulated comparisons.

Structured Technical Comparisons between latest HS2 proposals and alternative HSUK scheme for national high speed rail network

The 8 principles set out in the preceding pages inform 11 specific tests which define HS2's performance within the Yorkshire region.

Test	
1	**Station proposal for Sheffield**
2	**Maintenance of through services for Sheffield**
3	**Sheffield-London journey time**
4	**Leeds-London journey time**
5	**Achievement of 'hugely enhanced capacity & connectivity' between UK's major conurbations**
6	**Compliance with Northern Powerhouse objectives**
7	**Inclusivity**
8	**CO2 reductions**
9	**Community & countryside impacts**
10	**Cost**
11	**Depot location**

Comparative Performance Assessment of revised HS2 proposals for Yorkshire against alternative High Speed UK proposals

Introduction

On 7th July 2016, HS2 Ltd released new proposals for HS2's route and stations in Derbyshire and Yorkshire. Whilst avoiding the difficulties, both

political and technical, of the previous scheme to serve Sheffield at Meadowhall station, the new scheme has introduced a wide range of new problems, most obviously the destruction of an entire housing estate in Mexborough, and the envelopment of Crofton on both sides with new railway infrastructure.

HS2 Ltd has given public assurances that its proposals a) will save £1 billion in project costs, and b) represent best practice, outperforming all alternatives.

This paper puts HS2 Ltd.'s assurances to the test. It is based upon the following two precepts:

- New high speed rail lines should bring direct benefit to the communities that lie in its path.
- Whatever scheme is adopted should represent best practice, delivering the greatest benefits for the least financial cost and environmental impact.

The 11 tests laid out in this paper are informed by the alternative High Speed UK (HSUK) proposals for a national network of high speed lines interlinking all principal cities. Within the Yorkshire region, HSUK will serve Sheffield at a new station on the site of the former Sheffield Victoria station and Leeds at the existing Leeds City station. HSUK services will extend across the Pennines to Manchester and Liverpool, and will extend also onto the existing network to serve Wakefield, Bradford, Huddersfield and many other centres.

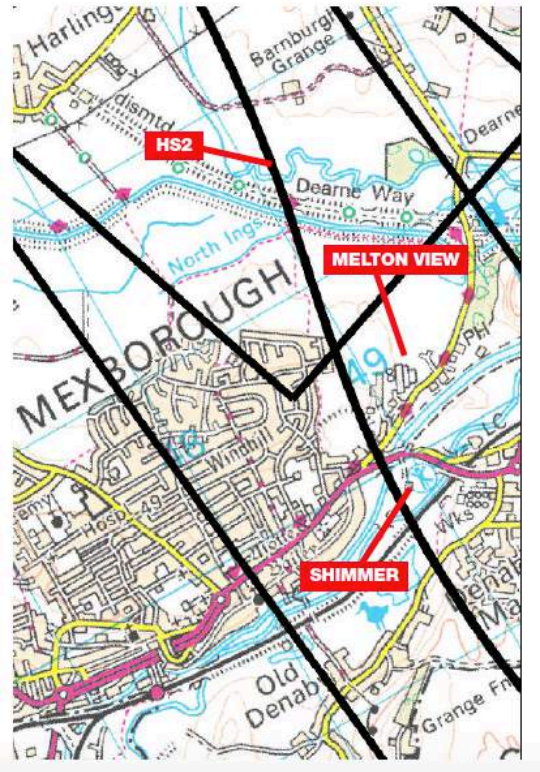
More information on High Speed UK can be found on
www.highspeeduk.co.uk

APPENDIX 10

The fastest current train from Doncaster to London is the 12.06, with a journey time of 97 minutes, which is 14 minutes slower than the best-possible HS2 journey from Sheffield to London in 17 years' time. Mexborough to London, via Doncaster, is currently 110 minutes, the same time as Mexborough to London via Sheffield on HS2 in 2033.

Mexborough's 200-home Shimmer estate, which would be demolished to make way for HS2, does not feature on the company's map of the M18/Eastern route (Conisbrough-Ryhill ref C321-MMD-RT-DPL-130-581601). The document features no buildings on the site, even though it is marked 'Fit For Acceptance'. The map is dated 17.06.16, less than three weeks before Shimmer residents were told their homes would be demolished.

The Melton View / Lavenders estate, that will accommodate more than 400 properties when complete, is also not marked on the same map. Many of these residents will qualify for compensation because they are within 300m of the proposed line. Buildings shown on the map in this area are the former Yorkshire Water treatment works, which was decommissioned ten years ago.



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