Instead of high-speed rail

Policy Exchange

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About the Author

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Acknowledgements

The author gratefully acknowledges the help of Trevor Parkin, of the Stone Railway Campaign Group. In what follows, we draw heavily on the group's analysis of the effects of reinstating HS2 Phase 2, and its proposed alternative to reinstatement, which it and we have called HS2 Phase 1+. We also share large parts, though not all, of the group's analysis of and proposed alternative to Northern Powerhouse Rail. All conclusions, recommendations and judgments are, however, our own.

Published by
Policy Exchange, 1 Old Queen Street, Westminster, London SW1H 9JA

www.policyexchange.org.uk

ISBN: 978-1-917201-71-1

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Foreword

Richard Tice MP, Deputy Leader Reform UK and Member of Parliament for Boston & Skegness

We all know the phrase that the definition of insanity is doing the same thing again and again and expecting different results. All of us, it seems, except the government.

Even as the historic disaster of HS2 blows through more billions in overspending and more years of delay, even as it sucks money from things the country actually needs, even as taxes on people and business rise, ministers are about to commit to further high-speed rail schemes which could make HS2's problems and price-tag look trivial.

As this paper forensically explains, one of the schemes, a new high-speed line between Liverpool and Manchester, that I call HS3, will cost up to £30 billion – but journeys on it between those two great cities will actually take longer than the rail service does now! And if the line is extended across the Pennines to Leeds, another £40 billion might be needed – for a journey time saving of around ten minutes. Ministers are also preparing a revival of the cancelled northern leg of HS2, a further £25-30bn commitment. History shows these numbers will be tens of billions higher.

Labour politicians appear to believe these things will be vote-winners. The mayor of Greater Manchester, Andy Burnham, has said that promising to build them would be a "strong northern story" for Labour to address the challenge of Reform, tackling "why voters feel so alienated from the system."[1] I am certain that is diametrically wrong.

The political obsession with high-speed rail is a small part of a quite different "northern story," and indeed an everywhere else story: how mainstream British politics became estranged, in so many ways, from ordinary voters' real wishes and needs.

Outside a bubble of politicians, journalists and construction industry lobbyists, also exposed by this report, the voters of the North do not want, and never have wanted, a handful of high-speed rail lines, serving a handful of big cities, at fares only business people on expenses can afford.

They want the money to be spent on the often failing railways (and roads) that they actually use. This report suggests a whole series of such improvements – including an "Elizabeth Line" for Manchester - which would deliver more, for more people, in more places, more quickly, more cheaply than any high-speed rail scheme. We will examine them closely.

To anyone tempted to bid for the Liverpool-Manchester high speed

1. Press Association, 14.5.25.

scheme, or the revived northern leg of HS2, I give this warning: do not bother. A Reform government will spend the money instead on things the country needs more.

That is the choice: tens of billions freed to spend on conventional rail and roads that help ordinary folk get to work - or another two decades of failure and waste.

Executive summary

Imagine you are in charge of a project which, by money wasted, is perhaps the most expensive single mistake in British history; something you yourself describe as an "appalling mess" with no solution, final budget or opening date in sight.[2]

What do you do? You start work on another scheme just like it, only worse.

Even as she pledges to "draw a line in the sand" under the failures of HS2,[3] the Transport Secretary, Heidi Alexander, is preparing an even greater train crash. Even as she publishes a report[4] criticising her predecessors for rushing into immature schemes for political reasons, and making promises they could not keep, Alexander is about to do precisely the same.

The Government says it will soon "set out further details on our plans for Northern Powerhouse Rail,"[5] NPR, a new high-speed scheme from Liverpool to Manchester and Leeds. It has recently been briefed to journalists – and not denied – that ministers will commit to this scheme, or at least the Liverpool-Manchester section of it, at or before this month's Labour Party conference.[6] But NPR is a project which achieves the difficult feat of making HS2 look sensible. Indeed, last month even the Government's own official infrastructure watchdog gave NPR a rating of "red,"[7] meaning that it "appears to be unachievable."[8]

As we show, NPR will be a high-speed railway on which trains will never be able to reach high speeds, because the stations are too close together. The Manchester-Liverpool section will start with a vastly expensive eight-mile tunnel, and a further seven miles of open track, in the wrong direction – roughly south, only then turning west towards Liverpool. This section alone will cost at least £17 billion (in reality, perhaps £30 billion), but trains will actually take longer to get from Manchester to Liverpool than the existing (May 2025) service. And in design, NPR is even less mature than HS2 was when it was approved.

The official reason for doing it like this is that it would also serve Manchester Airport. But the "airport" station would actually be a mile away, and you would have to transfer by bus. That journey, too, would be slower, or at best no quicker, than by the current conventional trains running into the airport itself.

The real reason, almost certainly, is that those first 15 miles in the wrong direction were also slated to carry the northern leg of HS2, phases 2a and 2b, which were cancelled in 2023. And some still hope that phase 2 can rise, slightly modified, from the dead. Alexander has also given

2. https://news.sky.com/story/government-to-announce-another-delay-to-hs2-13385232
3. https://www.gov.uk/government/speeches/resetting-the-high-speed-two-hs2-programme
4. https://assets.publishing.service.gov.uk/media/68a72b319e1cebdd2c96a0ae/hs2-experience-major-transport-projects-governance-assurance-review.pdf
5. https://hansard.parliament.uk/commons/2025-06-19/debates/EE716619-BE7D-4FA3-9EA3-A7B3D67DD6EE/UKInfrastructure10-YearStrategy
6. https://www.theguardian.com/business/2025/aug/13/labour-to-revive-northern-powerhouse-rail-project-trains
7. https://assets.publishing.service.gov.uk/media/6895fbcb9c63e0ee87656a2b/nista_annual_report_data_2425.xlsx
8. https://www.gov.uk/government/publications/nista-annual-report-2024-2025/nista-annual-report-2024-25#annex-the-annual-report-and-transparency-data-on-major-projects

"steers that [HS2] should plan to retain the spurs to the former phase 2a and 2b sections,"[9] at a cost of £500m.

So as well as Liverpool-Manchester, we could face a third high-speed scheme, "HS2 Light," a slightly lower-speed, allegedly lower-cost revival of HS2's cancelled northern leg between the West Midlands and Manchester. The rail minister, Lord Hendy, said in July that "we hope to come back and say more in a few months" on this.[10] But as we show in this paper, HS2 Light is a trap which would cost little, if at all, less than the original scheme. It would also, remarkably, make services between London, Birmingham and almost 20 cities and towns further north *worse* than they are now.

Around nine-tenths of journeys are local. Each year, three London bus routes carry about as many people as Spain's entire 2,500-mile high-speed rail network. One London tube line carries six times more people.[11] Only 8 per cent of journeys by distance (2 per cent by volume) are made by train.[12] Yet for most of the last decade, long-distance high-speed rail has dominated, distorted and damaged Britain's transport policy - at the direct expense of things which matter far more.

Once HS2 started to consume political attention and spending, for instance, the expansion of Manchester's Metrolink tram more or less stopped. In the five years between 2010 and 2015, Metrolink added 58 new stops. In the ten years since, it has added only six.[13] Last year the government spent 75 per cent more on HS2 than it spent on local public transport across the entire country.[14] Amid ever-tightening state finances, this must change if our transport system is to improve. Instead, the government appears to be doubling down on high-speed.

This paper explains how Britain was – and still is - sucked down the dead end of high-speed rail through a massive lobbying effort by the construction and consultancy industries. The well-known Northern Powerhouse Partnership, which claims to be the "voice of the North's business and civic leaders,"[15] is in fact substantially a lobbying operation for high-speed rail. Eight of its 10 private-sector directors work for firms with direct commercial interests in HS2. Between them, their companies (or joint ventures of which they are part) have already collected at least £8.3 billion from the project, with far more to come. Many of the claims the NPP has made for the economic benefits of high-speed rail are false.[16]

A recent official evaluation of Britain's only existing high-speed rail line, the HS1 domestic service from London to Kent, puts such claims into perspective. More than a decade after the domestic service began, it finds that "local economic indicators [in Kent], such as GVA per capita, have not increased significantly compared with peer locations which have not benefitted from HS1." There were only tiny improvements in train performance, and the scheme overall, even with the wider economic impacts, has been "poor value for money."[17]

We show, too, that the crisis in HS2 is even worse than Ministers admit. The true cost for the rump still being built is up to 22 per cent greater than that stated by Ministers, and declared to Parliament.[18]

9. https://assets.publishing.service.gov.uk/media/685177afcf42a58f50cac99b/hs2-ltd-letter-to-transport-secretary.pdf
10. committees.parliament.uk/oralevidence/16312/pdf/
11. The three busiest bus routes in London carried 37 million passengers between them in 2024, see https://tfl.gov.uk/cdn/static/cms/documents/2023-2024-annual-bus-stats.xlsx versus 39 million for Spain's entire high-speed network. The Northern Line carried about 250 million passengers last year.
12. https://www.gov.uk/government/statistics/rail-factsheet-2024/rail-factsheet-2024#rail-travel-in-the-context-of-other-transport-modes
13. https://en.wikipedia.org/wiki/List_of_Manchester_Metrolink_tram_stops
14. See Chapter 1.
15. https://x.com/np_partnership
16. See Chapter 2. Directors as of May 2025.
17. https://assets.publishing.service.gov.uk/media/682f37fbb33f68eaba9539cd/hs1-second-evaluation.pdf
18. See Chapter 1.

Most importantly, we set out a programme of alternative rail and transport investments for the North which will be both transformative – and deliverable.

Projects looking for a plan

We start by recognising that public transport is a network. Creating better public transport means creating a better network – allowing people in thousands of places to travel easily door-to-door, often by connecting from a train to a tram or bus. It does *not* mean grafting one or two new high-speed lines, serving a handful of places, onto an otherwise still decrepit system - an approach which Liverpool University's Ian Wray, who coined the "Northern Arc" concept, calls "projects looking for a plan."[19]

The focus on high-speed rail has also meant an obsession with links – lines between places. But, as Wray says, the key capacity problem of the North's railway is at *nodes* – that is, what happens to all the trains when they hit chokepoints like central Manchester or Leeds. Most of the North's trains serve one or both of these cities, on some of Britain's most congested track. Because the railway is a network, the inevitable problems there ripple across the region.

The high-speed schemes on the table would do relatively little to fix this problem, at enormous expense. The full newbuild HS2 scheme to Manchester would remove only six of the almost 60 trains each hour using the conventional tracks at Manchester Piccadilly station, around 10% of the total. The full Northern Powerhouse Rail would remove perhaps 7-14% more.[20] It would be more effective, and cheaper, to address the problem directly.

An Elizabeth Line for the North

So our central proposal is a high-capacity east-west route across central Manchester to tackle the North's worst rail bottleneck. As in London, the new element would be a tunnel under the city centre, with an underground station at Manchester Piccadilly, to join up the existing conventional lines either side. Those lines would be electrified and upgraded for higher speed and capacity, as some already have been or are being.

HS2 is sometimes justified with the argument that the Elizabeth Line has been a great success, with more passengers than forecast. What that unconsciously concedes is that an Elizabeth Line, a project wholly different in nature (and cost), is what's actually needed.

A two-track tunnel would, like its London sister, have the capacity for 30 trains an hour each way – almost four times more than the service proposed for Northern Powerhouse Rail. It would increase rail capacity across Manchester by around 100 per cent, far more than NPR. A two-track tunnel with a four-platform underground station at Piccadilly would increase capacity by around 130 per cent; a four-track tunnel would increase it by 200 per cent.

Rather than just one line between Liverpool and Leeds, serving seven stations, this would create a dense, frequent network serving more than

19. https://uk2070.org.uk/wp-content/uploads/2025/02/Why-Rail-Projects-need-a-Regional-Plan-FINAL-Edited-250211.pdf

20. A typical weekday off-peak hour between 1200-1259, checked on Realtime Trains, shows 59 passenger and freight trains scheduled to serve or pass through Piccadilly. We assume HS2 would remove four of the six arriving/departing London trains each hour and two of the four arriving/departing Birmingham trains. There are 9-10 east-west regional express services to, from or through Piccadilly each hour. We assume NPR would remove 4-8 of these. (A residual conventional fast service would need to be maintained for intermediate stations such as Stockport, Stoke, Huddersfield, etc.)

80 stations including, on the western side of Manchester, Bolton, Preston, Blackpool, Wigan and St Helens Junction as well as Warrington and Liverpool; on the eastern side Sheffield, Ashton, Rochdale, Halifax and Huddersfield as well as Bradford and Leeds.

It would be faster between Liverpool and Manchester than Northern Powerhouse Rail, only slightly slower between Manchester and Leeds, and provide the same or better frequency and capacity. Yet it would cost around £9- 13 billion, perhaps half what NPR's Liverpool-Manchester section alone would cost.

The other main Northern chokepoint, Leeds station, can be addressed with the proposed Leeds mass transit system, which could and should take substantial numbers of local services off the heavy rail tracks through the station.

Electrification and upgrading of most lines

Northern politicians are right to say they want the kind of rail network which south-east England has. But that is emphatically not high-speed: it is a dense, frequent, almost all-electric web of low and medium-speed conventional lines. We propose extending electrification to around 80 per cent of routes in the North, all but the most rural lines, including from Sheffield to Leeds and Manchester; from Hull to Sheffield and Leeds; from Manchester to Halifax and Bradford; and from Chester (and North Wales) to Warrington, Manchester and Crewe. Capacity upgrades, including extra tracks and new signalling, would also be installed. As in southern England, each town and city would be linked every 15-30 minutes. Unlike NPR or HS2, this would improve service to the vast majority of the North's people and communities.

Longer trains – a relatively quick intermediate step

Much overcrowding on the North's railways is caused by the practice of running extremely short trains. Of the 43 trains departing Leeds in the weekday peak hour between 5 and 6pm, almost half, 21, have only two or three carriages.[21] Almost no train anywhere in the North, save those to and from London and a small minority of cross-country trains to Birmingham and Bristol, has more than six carriages.

In the same 5-6pm hour, London's busiest terminal, Waterloo, also has 43 departing trains. Of these, 37 have eight carriages or more and only one has less than four carriages.[22] Indeed, few trains of any kind in south-east England are shorter than four carriages. All London's Elizabeth line trains have nine carriages.

Even before work on the North's "Elizabeth line" started, significant improvements in capacity can be achieved on many routes within months, even weeks, by running longer trains using modern rolling stock currently sitting in storage, and by delaying the retirement of some older stock. Platform lengthening would be needed on some routes, though almost all current platforms can accommodate at least four-car trains. In other cases, new trains would need to be ordered and power supplies upgraded – but

21. Checked on Realtime Trains, as at September 2025. Figures are for trains scheduled to depart between 1700-1759.

22. Realtime Trains, op cit

this is still relatively cheap and quick. Again, it is surprising there has been so little focus on this, perhaps because everyone is spending their time thinking about heavy-engineering-based schemes instead.

And if the West Coast Main Line between the North West, the Midlands and London is overloaded – though in years of asking, no-one ever provided evidence that it is – this paper sets out a programme of capacity improvements to that line which we have called "HS2 Phase 1+." This would also have the merit of maintaining and improving services to the places where HS2 would have degraded or reduced them.

A genuinely integrated network

Another slower, but still relatively quick, change – possible within a few years - would be integrated timetables, ticketing and information: making the system more useful and usable without running a single extra bus or train. The Swiss national rail website allows you to plan a multi-modal journey to any location served by any form of public transport, not just, as in Britain, a national rail station. Trains are arranged to connect with each other, and with buses. At the moment large numbers of potentially public transportable journeys aren't taken because people don't understand the bus networks and don't realise what is possible with a combination of modes.

Integrated, multi-modal contactless ticketing can be achieved widely and quickly without needing a costly infrastructure of card readers at every station: the current, outdated DfT approach, now moving slowly through the South East. Instead, a mobile app uses your phone's GPS function to virtually tap you on and off. (As this paper went to press, the DfT began small trials of such a scheme.) By reducing the friction of travel, contactless increases public transport use. And it deals with confusing fares, a major deterrent to passengers. It always charges you the lowest fare for the journey you're taking and ensures you can never be caught with the 'wrong' ticket.

Hundreds of small and medium-sized schemes

As this suggests, rail is only part of any solution. The new government has continued the last one's city region transport settlements with a claimed injection of £15 billion (across the country, not just the North). The money needs to be real, but is welcome. Small and medium-sized schemes can do far more, in more places, more quickly, for more people than a few slow and costly iconic projects. Bus lanes, for instance, are an unglamorous but effective way of improving public transport, deliverable in months. They create a virtuous circle, making services faster, more reliable, more attractive to passengers (generating more fare revenue) and cheaper to operate (because fewer vehicles and drivers are needed). The government must incentivise mayors and councils to use its funding properly, and exercise close supervision to stop them wasting it.

Britain has fewer tram networks than other countries because they have been far more expensive to build. We should copy the French approach,

installing multiple new tram systems by using the same or similar kit of parts everywhere, rather than, as now, everything being done bespoke.

Cakeism

The author was No10 transport adviser when the decision to proceed with HS2 was taken, fighting unsuccessfully against that choice, and this paper is, we hope, frank about the mistakes made then. Because part of the problem was cakeism, a belief you can have high-speed rail and all the other things too. At high-speed prices, you just can't. You never could, even with better public finances than now. You have to choose – or at least to sequence, fixing your local transport first and only then turning to the comparative luxury item of high-speed (which is, in fact, what France, Germany and Spain did do).

Overpromising meant we indulged every demand for costly, undeliverable schemes, raised expectations to impossible levels – then caused outrage when those schemes inevitably hit the reality buffers, even though we were (and are) still spending fortunes. One of the more surreal episodes of the last few years was to hear a £96 billion investment, 2021's Integrated Rail Plan, described by the then opposition leader, Keir Starmer, as "crumbs from the table."[23] That was the price we paid for embracing high-speed fantasies; Starmer in office should take heed.

Time to let go

Ministers and metro mayors now have a choice. They can waste another few years clinging to high-speed schemes that are ever less likely to happen, given the continuing deterioration of the public finances and the ballooning cost of HS2 Phase 1. Or they can get started on something that would work.

23. https://www.yorkshirepost.co.uk/news/opinion/columnists/sir-keir-starmer-in-the-yorkshire-post-boris-johnson-has-sold-the-region-out-3463228

Chapter 1
Further deterioration in the existing project

HS2's current publicly-known state

Amid soaring costs, all sections of HS2 bar Phase 1, from London to the West Midlands, have now been cancelled.[24] HS2 trains will run to Birmingham on high-speed track. They will run to Manchester, Liverpool and Scotland on high-speed track as far as Handsacre, near Lichfield, then join the existing West Coast Main Line, saving just under half an hour on the current journey time to Manchester.

The Government and HS2 Ltd, the state-owned company delivering the scheme, agree that Phase 1 is substantially overbudget – but they cannot agree by how much. The Government says it will cost up to £54bn, £9.4bn over the funding envelope. HS2 Ltd says it will cost up to £66bn, £21.4bn over the funding envelope.[25] HS2 Ltd has now published an even higher figure, £61.8bn as of June 2024, without the Euston part of the scheme, which adds a further £6.5bn.[26] (All these figures are in 2019 prices – for March 2025 prices, add around 26-27 per cent.)

For perspective, even the lower of these overspends, £9.4bn in 2019 prices, would be enough to electrify almost every railway line in Northern England; give three cities a new light rail system; or roughly double the capital budgets of the courts, prisons and police in each of the next five years. And the total claimed cost of Phase 1 alone – up to £88 billion in March 2025 prices – is now nearly three times more in nominal terms than the original claimed cost of the *entire* Y-shaped scheme.

In June 2025 the Transport Secretary, Heidi Alexander, said HS2 was an "appalling mess… the word 'affordable' was clearly not part of the HS2 lexicon," and formally abandoned Phase 1's promised in-service date of 2033.[27]

The chief executive, Mark Wild, told MPs in July that the Phase 1 main works civils contracts alone (that is, just building the trackbed, tunnels, viaducts and other structures – not stations, land purchase, design, electrification, signalling, systems or trains) "should have cost £19.5 billion. We have already spent £26 billion and we are just over halfway done… the likely overspend is probably between 50% and 100%."[28]

Overall, he earlier said, including the main works civils and the other elements, Phase 1 should have been 70-80 per cent finished by now, but

24. https://policyexchange.org.uk/wp-content/uploads/2022/11/HS2-The-kindest-cut-of-all.pdf
25. https://committees.parliament.uk/publications/46679/documents/239132/default/
26. https://assets.publishing.service.gov.uk/media/685177afcf42a58f50cac99b/hs2-ltd-letter-to-transport-secretary.pdf
27. https://hansard.parliament.uk/commons/2025-06-18/debates/A676AA06-6199-4DB7-BF0B-8923EFF9DF75/HS2Reset
28. committees.parliament.uk/oralevidence/16312/pdf/

was actually only about a third complete – and the exact percentage was unclear because "the project has become disconnected from the reality of the site works."[29] New Civil Engineer magazine reported that the first HS2 services would not start until 2036 at the earliest, with 2039 looking more likely, ten years later than the most recent official opening date.[30]

HS2 is running far further overbudget than has been publicly admitted

Bad as the admitted position is, it understates HS2's difficulties. Each month, the Department for Transport publishes details of all payments it has made over £25,000.[31] The amounts are broken down by project and recipient. We have been through each monthly report since 2009 and collated the sums paid out on HS2.

We find that the amounts spent are far greater than those publicly admitted and declared to Parliament, including by the current Ministers, even allowing for inflation adjustment. (The Government has mostly given spending figures for HS2 in 2019 prices, presumably to make them look lower. However, the numbers in the monthly reports are the actual sums spent.)

For 2022/3, the DfT told Parliament that HS2 would spend £5.8bn in 2019 prices, equivalent to £7bn in 2023 prices.[32] According to the monthly reports, the actual amount spent that year, including staff costs, was £8.1bn – 15.7 per cent greater.

In 2023/4, the DfT told Parliament that HS2 would spend £6.3bn in 2019 prices, equivalent to £7.7bn in 2024 prices.[33] According to the monthly reports collated by Policy Exchange, the actual amount spent in 2023/4 was £8.6bn. And these are only the sums paid to external contractors – not staff costs at HS2 Limited, which added £175 million, making a total of £8.75bn – 14 per cent more than the amount claimed to Parliament.

For 2024/5, according to the monthly reports collated by Policy Exchange, the amount spent is £8.3bn. That is 22 per cent more than the amount budgeted and announced to Parliament (£5.5bn in 2019 prices, equivalent to £6.8bn in March 2025 prices.)[34]

Salaries are high

Despite very poor performance, salaries at HS2 Ltd are among the highest in the public sector. According to DfT disclosures, the chief executive, Mark Wild, is paid between £660,000 and £665,000, making him Britain's best-paid public servant. Other super-earners include Jim Crawford, chief programme officer, who is on at least £425,000, and Matt Denham, the procurement and supply director, who is on at least £370,000. At least 23 other HS2 Ltd executives are paid more than £160,000.[35]

The organisation is also top-heavy with senior staff. According to our analysis of 2024/5 staff data, 314 of HS2 Ltd's 1947 staff are graded at Senior Civil Service level, 16.1 per cent of the workforce, compared with

29. https://www.imeche.org/news/news-article/hs2-boss-backs-laser-guided-reset-to-end-cycle-of-bad-news
30. https://www.newcivilengineer.com/latest/hs2-completion-date-pushed-to-late-2030s-as-anticipated-final-cost-continues-to-rise-15-05-2025/
31. https://www.gov.uk/government/collections/dft-departmental-spending-over-25000
32. https://www.gov.uk/government/speeches/hs2-6-monthly-report-to-parliament-june-2023
33. https://www.gov.uk/government/speeches/hs2-6-monthly-report-to-parliament-november-2023
34. https://www.gov.uk/government/speeches/hs2-6-monthly-report-to-parliament-december-2024
35. https://www.data.gov.uk/dataset/5161398b-c0f9-45b9-8451-893face3a9ab/organogram-high-speed-2

only 6.4 per cent at its parent body, the Department for Transport.[36]

What the Government is doing to fix the problems

Alexander now claims she is "drawing a line in the sand" and "calling time on years of mismanagement"[37] with a "bold reset plan."[38] She promised to "turn the page" and "stop [costs] spiralling any further."[39] It is not clear, however, what the bold plan consists of, or whether it will end the problems.

Indeed, our figures (above) show that the amount by which HS2 exceeds its budgets has risen, not fallen, under the new government. It spent 15.7 per cent more than budgeted in 2022/3 and 14 per cent more in 2023/4. But in 2024/5, HS2 had an overspend of 22 per cent. Even Alexander admitted that HS2 Ltd "cannot be certain that all cost pressures have yet been identified."[40]

Mark Wild, HS2 Ltd's chief executive, was more direct. In a March 2025 letter to Alexander, he said that "significant… further cost pressure is likely" and that "for the last year, HS2 Ltd has been attempting to stabilise the MWCC [main works civil contracts] without success."[41]

Wild and his finance director, Alan Foster, have spoken of their plans for the "renegotiation" of contracts which are, Wild conceded, "effectively… cost reimbursable."[42] That is, the contractors building the scheme are paid whatever they spend (usually up to a certain limit), plus an allowance for profit, giving them little motive to save money - indeed, the reverse.

However, both men admitted that there is little incentive for HS2's contractors to renegotiate deals which are so favourable to them. As Foster put it, "we have to manage our expectations… we clearly have to reach a compromise there, but there are opportunities for improvement."[43] As the DfT official Alan Over agreed, construction is "continuing in the round on the previous basis."[44]

A few months later Leo Quinn, chief executive of one of the main HS2 contractors, Balfour Beatty, said: "If someone wants to renegotiate the contract, that's the wrong priority… Isn't it good news in a way that the balance sheet as a country is able to carry that [overspend]? Because if you had actually put that liability down to all of your contractors, and the cost had overrun the way it's overrun, you wouldn't have a construction industry in the UK."[45] On the same day, Balfour Beatty announced an 11 per cent rise in profits, a £125m share buyback and a 9 per cent rise in its dividend.

Wild added in July that the Government would "make sure the contractors understand" that future public-sector work – "hospitals, schools, prisons, the grid and Sizewell C" – might be at risk if they refused to cooperate.[46] But in practice, the government needs the contractors as much as, or more than, they need it, so this leverage, though not nil, will be limited.

The main new elements of Alexander's bold plan appear to be a new chairman – Mike Brown, formerly of TfL and the project to rebuild Parliament – and some new supervisory boards. This seems highly unlikely

36. Ibid. DfT figures are at https://www.data.gov.uk/dataset/17d5c23d-f431-48e8-802a-b987431c8d92/organogram-department-for-transport
37. https://hansard.parliament.uk/commons/2025-06-18/debates/A676AA06-6199-4DB7-BF0B-8923EFF9DF75/HS2Reset
38. https://www.gov.uk/government/news/transport-secretary-draws-line-under-hs2-mismanagement-with-bold-reset-plan
39. https://hansard.parliament.uk/commons/2025-06-18/debates/A676AA06-6199-4DB7-BF0B-8923EFF9DF75/HS2Reset
40. ibid
41. https://assets.publishing.service.gov.uk/media/685177afcf42a58f50cac99b/hs2-ltd-letter-to-transport-secretary.pdf
42. https://committees.parliament.uk/oralevidence/15160/pdf/
43. ibid
44. ibid
45. https://www.cityam.com/hs2-should-not-re-negotiate-contracts-says-balfour-beatty-boss/
46. committees.parliament.uk/oralevidence/16312/pdf/

to "fix things," or even stop them getting worse.

The Stewart review

On the same day as announcing its reset, the Government published a review by James Stewart, former chair of KPMG's infrastructure practice, into HS2 and the lessons for big infrastructure projects generally. Stewart said that "projects don't go wrong, they start wrong," accusing ministers in the Cameron government of a "hurry" to start work on "gold-plated" and "immature" designs because of political "pressure to maintain momentum….many examples of key decisions [have] been driven by schedule rather than cost."

He said governments had breached the "golden rule" of "think slow, act fast, ie that time taken in the planning, development and design phase will have a big pay-off in the delivery phase." Britain, he said, must "stop designing and building things we cannot afford."[47]

Stewart also recommended substantial pay rises for HS2 Ltd management, saying this was necessary to attract the best talent.[48]

47. https://assets.publishing.service.gov.uk/media/685291bf2b367fdd44c15e2b/dft-major-transport-projects-governance-assurance-review.pdf

48. ibid

Chapter 2
Britain's continuing fixation with high-speed rail

There has been copious analysis of how HS2 went wrong, which we will not repeat here.[49] But there has been much less analysis of why Britain bet the farm on high-speed rail in the first place – a decision taken against both the evidence, and the wishes of the public.

Even on the scheme's earlier figures, now dwarfed by the grim reality, it was clear that pound for pound, almost any other public transport project would do more than HS2 for economic growth, modal shift, net zero and levelling up. HS2's own 2013 economic case stated that 43 per cent of its benefits, almost half – even under the full Y-shaped scheme – would go to London and the South-East, making its effects on regional inequality little better than neutral.[50] For at least the first 60 years after it opens, the small amounts of C02 it saves through greener transport will be outweighed by the vast amounts of C02 it is taking to build it.[51] Modal shift from car or air to rail, by HS2's own account, will be almost nil.[52] Dozens of smaller, poorer places on the existing main lines, including Coventry, Stoke and Stockport, would see their London service reduced and/or slowed down under HS2.

The scheme's own business case for the line from London to Manchester said it would return (over 60 years) only 90p in benefits for every £1 of taxpayers' money spent.[53] That was based on an official, vastly understated construction cost of £62 billion in 2025 prices – less than the London-Midlands leg alone will now end up costing – and on highly optimistic assumptions of fare revenue. Given the continual increases in cost, the actual benefit figure might now be closer to 50p for every £1.

The North has never wanted high-speed rail

Public support for HS2 has been consistently low across the country, including in Northern England. The latest YouGov polling (March 2025) finds 31 per cent support the scheme, little changed from 2019, when it was 29 per cent.[54] Among Northern voters, the figure is also 31 per cent, down from 32 per cent in 2019.[55] The two major cutbacks to HS2, in 2021 and 2023, were fiercely opposed by big-city leaders, lobbyists, journalists and other elites in the North - but not opposed by Northern voters, though this went almost unreported by a largely HS2-sympathising media.

49. One of the authors has a summary at https://www.thetimes.com/uk/transport/article/hs2-biggest-problems-speed-route-cost-lprl0fpkc
50. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/628526/CS866_A_HS2_Phase_2a_Economic_case.pdf - page 75
51. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/400836/hs2ml-carbon_assessment_and_narrative-_25thoct13_wed_tagged_version__-_updated_0.pdf - page 27
52. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/365065/S_A_1_Economic_case_0.pdf - page 83
53. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1084080/hs2-phase-2b-western-leg-crewe-to-manchester-supplement-to-the-update-on-the-strategic-outline-business-case.pdf - page 22
54. https://yougov.co.uk/topics/politics/trackers/support-for-high-speed-rail-hs2
55. https://yougov.co.uk/topics/politics/trackers/support-for-high-speed-rail-hs2?crossBreak=north

Polling immediately after the 2023 cancellation found that only 25 per cent supported retaining the full London-Manchester route, while 49 per cent did not (the figures in the North were 28-48). By 59 per cent to 19 (57-19 in the North), voters said they would rather spend the money on local transport than on proceeding with the northern leg of HS2.[56]

Local public transport is far more important than inter-city public transport, but is treated worse

Almost 90 per cent of journeys are local. Last year, three London bus routes carried about the same number of passengers as Spain's entire, 2500-mile national high-speed rail network. A single Tube line carried six times more passengers.[57] The deficiencies of Britain's local public transport systems, outside London, are widely recognised as a significant national weakness. As James Heath, outgoing chief executive of the National Infastructure Commission, the body charged with setting the country's infrastructure priorities, has put it:

> *"Most of our large cities outside London are not achieving their productivity potential, which is the main driver of the overall economic disparities we see between regions. This is in contrast to most similar economies where major regional cities outperform the national productivity average. The future of transport in UK cities is a key part of the answer to this challenge…. inadequate transport systems in many of our cities are a binding constraint on growth…. the Commission's strong view is that if we want to improve the economic performance of our cities, then transport policy should prioritise intra-city improvements to enable greater capacity and commuting flows."*[58] *(Our italics).*

Yet the overwhelming priority for spending has been an inter-city scheme, HS2, the biggest single capital project in British peacetime history. Even on the official figures, in 2023/4 the government spent far more on HS2 (£7.7bn)[59] than on local public transport for the whole country (£4.9bn) or on the entire national road network, the motorways and major A-roads (£6.1bn).[60] As we saw in Chapter 1, HS2's actual spend that year was £8.6bn – 75 per cent more than the amount spent on local public transport.

Why has this happened?

Significant lobbying by vested interests

HS2 may not be an effective use of money for the travelling public - but it is very good news indeed for the construction and consultancy industries. These have mounted a highly effective lobbying campaign to divert public funding into high-speed projects. Trams, bus lanes, and new conventional tracks are more useful – and more wanted by the public - but they are cheaper, with fewer opportunities for profiteering, than a few giant schemes which can be milked for decades.

56. https://www.opinium.com/wp-content/uploads/2023/10/VI-2023-10-06-Observer-Tables.xlsx - see questions HS1, HS2.
57. The three busiest bus routes in London carried 37 million passengers between them in 2024, see https://tfl.gov.uk/cdn/static/cms/documents/2023-2024-annual-bus-stats.xlsx versus 39 million for Spain's entire high-speed network. The Northern Line carried about 250 million passengers last year.
58. https://web.archive.org/web/20250321032249/https://nic.org.uk/speeches/james-heath-the-future-of-transport-in-uk-cities/
59. https://www.gov.uk/government/speeches/hs2-6-monthly-report-to-parliament-november-2023 (the figure given is £6.3bn in 2019 prices, equivalent to £7.7bn in 2024 prices.)
60. https://assets.publishing.service.gov.uk/media/66a8dd93ab418ab055592fb9/E03149684_PESA_2024_Web_Accessible.pdf - table 5.2, page 73

The Northern Powerhouse Partnership – lobbyists for high-speed rail

Since its launch in 2016, a group called the Northern Powerhouse Partnership has established itself as a frequent voice in the debate about Northern transport, quoted more than 4,000 times by print media alone.[61] The NPP calls itself the "leading voice of business and civic leaders across the North,"[62] "representing the voice of the North's business and civic leaders."[63] This claim is taken at face value by journalists, who treat NPP as a disinterested and representative commentator. The BBC calls it a "business-led think tank and advocacy group for the North of England"[64] and its chief executive, Henri Murison, who it often interviews, the "front man for business and civic leaders across the North."[65]

The Northern Powerhouse Partnership speaks often of the need for investment in Northern transport – but seldom (though not never) about most aspects of the North's transport network, such as buses, active travel, Metrolink or conventional rail. Its transport work has focused overwhelmingly on a demand to build two expensive high-speed rail schemes: HS2 and Northern Powerhouse Rail, running east-west across the Pennines from Hull to Leeds, Manchester and Liverpool, with occasional forays into demanding expensive road schemes.

Part of the explanation is that these "business leaders across the North" and representatives of Northern business in fact represent only a tiny section of the business community – those with a direct commercial interest in high-speed rail. Of the ten private-sector directors of the Northern Powerhouse Partnership,[66] eight are also senior executives or directors of HS2 beneficiaries and contractors: companies or members of joint ventures paid a total of at least £8.3 billion to date by HS2, with billions more to come.

NPP's representation of the North is just as questionable. The vast majority of its directors appear to be based either in Manchester – or outside the North altogether. As of May 2025, they are:

Sambit Banerjee, based in London, chief executive of Siemens Mobility,[67] which has more than £600m of contracts with HS2 for signalling, power supply, telecoms and station information systems.[68]

Richard Bonner, apparently based in Bristol,[69] director of buildings and places at the consultancy Atkins,[70] which says it has "played a vital role in nearly every phase of the HS2 project" and is "currrently supporting delivery across five major contracts."[71] Atkins has directly collected at least £199 million from HS2 to date, according to our analysis of the DfT's payment records, and is part of contracts which have been paid at least £581 million.

Jane Healey Brown, based in Manchester, who runs the city's office of the consultancy firm Arup.[72] This engineering practice

61. Factiva database search.
62. https://www.northernpowerhousepartnership.co.uk/
63. https://x.com/np_partnership
64. https://www.bbc.co.uk/news/articles/cprglvj820po
65. https://www.bbc.co.uk/news/uk-england-67032095
66. Companies House records, accessed May 2025.
67. https://www.linkedin.com/in/sambit-banerjee-2975801b/?originalSubdomain=uk
68. https://news.siemens.co.uk/news/siemens-mobility-secures-infrastructure-and-service-contracts-worth-gbp-560-million-for-hs2
69. https://www.business-live.co.uk/professional-services/engineering-consultancy-atkins-hires-west-26513722
70. https://www.linkedin.com/in/richardbonner/?originalSubdomain=uk
71. https://www.atkinsrealis.com/en/projects/high-speed-2
72. https://www.linkedin.com/in/jane-healey-brown/?originalSubdomain=uk

has been involved in HS2 since its inception, including producing the documentation accompanying the parliamentary bills. It is now involved in designing HS2's stations,[73] among other work. It has been paid at least £651 million by HS2 to date, according to our analysis of DfT payment records.

Juergen Maier, based in Manchester, former chief executive of Siemens and now a non-executive director at Innovo,[74] the largest shareholder in Costain,[75] awarded a £400m contract for lineside systems.[76] Costain is also one of HS2's main works construction contractors, in a joint venture with Skanska and Strabag which has collected a total of £6.5 billion from HS2 to date, according to our analysis of DfT payment records.

Patrick McLoughlin, former transport secretary and now a director of Xrail Group,[77] an HS2 contractor.[78] In a potential conflict of interest, McLoughlin is also chairman of Transport for the North, the statutory transport body bringing together the region's local authorities.

Chris Oglesby, based in Manchester, chief executive of Bruntwood,[79] a property company which sold a major site in central Manchester to HS2 for its proposed station.[80] The price it received was £40.5 million.[81]

Mark Reynolds, based in London, group executive chairman and former chief executive of Mace,[82] which is designing and building the HS2 stations at Birmingham Curzon Street[83] and Euston, if it ever happens.[84] Mace Dragados, the joint venture building the stations, has already collected at least £837 million for Euston (even though there is very little to show for it) and £136 million for Birmingham, making a total of at least £973 million to date, according to our analysis of DfT payment records.

Chris Woodroofe, based in Manchester, the managing director of Manchester Airport.[85] Woodroofe's airport would in theory served by both the northern leg of HS2 and Northern Powerhouse Rail, though the "airport" station would in fact be about a mile from the airport and serving even that requires a highly indirect route between Manchester and Liverpool, making journeys slower than the existing line, see Chapter 3.

Only two of NPP's 10 private-sector directors, Jim O'Neill and Angela Seeney, appear not to work for companies with commercial interests in HS2. NPP also has four public-sector directors, the vice-chancellor of Manchester University and the leaders of Manchester, Bradford, and East Riding councils. The last pair appear to be the only two of NPP's 14

73. https://www.arup.com/projects/hs2-interchange-station/
74. https://www.innovogroup.com/director/juergen-maier-cbe
75. https://www.thetimes.com/business-money/companies/article/the-real-estate-giant-that-wants-to-bring-dubais-audacity-to-the-uk-qb6krdp9h
76. https://www.newcivilengineer.com/latest/hs2-ltd-pays-additional-150m-to-skanska-costain-strabag-for-london-tunnels-15-07-2024/ and https://www.costain.com/media/press-releases/2024/costain-wins-major-hs2-rail-systems-tunnel-and-lineside-me-contract/
77. https://members.parliament.uk/member/333/registeredinterests
78. https://www.xrailgroup.com/case_studies/hs2-enabling-works-london-euston/
79. https://www.linkedin.com/in/chris-oglesby-90522070/?originalSubdomain=uk
80. https://mediacentre.hs2.org.uk/news/hs2-acquires-second-major-development-site-paving-the-way-for-manchesters-new-high-speed-station
81. https://themovemarket.com/tools/property-prices/square-one-travis-street-manchester-m1-2ng
82. https://www.linkedin.com/in/mark-reynolds-mace/?originalSubdomain=uk
83. https://www.macegroup.com/news/hs2-reveals-final-designs-for-birmingham-curzon-street-station/
84. https://www.aphex.co/customers/how-hs2-euston-use-aphex
85. https://www.linkedin.com/in/chris-woodroofe-60788a3/?originalSubdomain=uk

directors who are from east of the Pennines. The North East and South Yorkshire are completely unrepresented on the group, as is Merseyside.

Labour's rail and urban transport review

In opposition, in late 2023, Labour commissioned the Northern Powerhouse Partnership, Innovo and former Siemens Rail director Juergen Maier to undertake a "rail and urban transport review." Henri Murison, NPP's chief executive, was also on the review panel, as was Allan Cook, the former chairman of HS2 Ltd.[86] The review's secretariat was Arup, the consultancy which has earned more than £650m from HS2. It was published in August 2024, after Labour entered government.

Though the review was supposed to include urban transport, it ended up barely mentioning intra-city transport and heavily focused on demanding new inter-city high-speed rail lines. It specifically recommended two projects which could benefit Siemens, Maier's former employer, even though these have little or nothing to do with urban transport, and demanded the rail minister be given "explicit responsibility for helping develop rail supply chains."[87]

The review sensibly recommended that the choice of schemes to invest in "should be determined… on the basis of objective analysis" - but then said that this should be ignored in the case of Northern Powerhouse Rail, demanding Government be "pressing ahead at speed to deliver NPR in full, with all the benefits it brings… this credible network does not need reviews or further optioneering."[88] Little has been heard of the review since, but it shows the level of capture achieved by the NPP and its members.

Oakervee review

For some HS2 decisionmakers, the interests of the construction industry – rather than of the public – do appear to have been a key factor. In 2019/20, Doug Oakervee led a review of HS2 for the Johnson government which proved pivotal in securing approval for the scheme. Some months after his report was published, Oakervee said he had recommended proceeding because "had HS2 been cancelled it would have done tremendous harm to the supply chain… and the construction industry in general."[89] Only one of the three other reasons he gave for his recommendation – the supposed overloading of the West Coast Main Line – was transport-related. It later emerged that contractors for the project held a private dinner for Oakervee during his researches.[90]

A fundamentally flawed thesis of agglomeration

Agglomeration is a key factor in economic and productivity growth. In the words of the then Prime Minister, Boris Johnson, clustering productive and creative businesses and people together allows them to "meet each other, and compete with each other, challenge each other, spark off each other… that's when we get the explosion, or flash of creativity and innovation."[91] The thesis is correct – but the high-speed rail lobby has applied it at the

86. https://www.urbantransportgroup.org/system/files/general-docs/Rail%20and%20urban%20government_FINAL.pdf
87. https://www.urbantransportgroup.org/system/files/general-docs/Rail%20and%20urban%20government_FINAL.pdf
88. ibid
89. https://www.newcivilengineer.com/latest/review-chiefs-hs2-support-driven-by-9bn-sunk-costs-and-fragile-state-of-construction-sector-18-12-2020/
90. https://www.constructionnews.co.uk/government/oakervee-privately-dined-with-consultants-during-hs2-review-18-05-2021/
91. https://www.gov.uk/government/speeches/pm-speech-at-manchester-science-and-industry-museum

wrong geography and level.

A key part of the case assembled for high-speed rail is that Northern Powerhouse Rail will agglomerate the North, and HS2 will agglomerate the North with the Midlands and London - moving them all towards a single "regional" economy supposedly like Germany's Rhine-Ruhr region, which is far more productive than northern England. (Sometimes this putative single region is said to be the North, sometimes it is said to be the North plus the Midlands – a "region" stretching as much as 300 miles from one end to the other.)

The Northern Powerhouse Partnership claimed in 2022 that even building just the Manchester-Leeds section of Northern Powerhouse Rail "would have transformative impacts for the whole region, creating a 'megatropolis' with a combined labour force of 3.2 million people." It "could *by itself* increase productivity *across the North* by 6 percent… and increase gross value added (GVA) in our region by about 8 percent over 10 years. That is equivalent to a £22bn uplift in GVA by 2060."[92] Our italics.

Or as the Maier review put it last year, "the productivity impact of stronger connectivity is evident by the levels of economic growth that have been achieved in various European secondary-city regions through the introduction of inter-city high speed rail. In Germany's Ruhr-Rhine [sic] region for example, faster and more reliable high-speed rail links have supported the transformation of cities like Düsseldorf, Cologne and Bonn and provided benefits."[93]

These claims are simply not true. There are no high-speed rail links between any of the cities in the Rhine-Ruhr region, though there is a high-speed link between Cologne and another region (there is also one part of the way to Aachen, which is not in the region.) It would not be sensible for there to be, because the distances are too short to allow trains to reach high speeds.

What there is within the region (as in other high-productivity areas such as South-East England and the Netherlands' Randstad) is a dense and effective network of conventional services. They are frequent but not fast – even by the fastest trains, the 48-mile journey from, say, Dusseldorf to Dortmund, about the same distance as Manchester to Leeds, takes about an hour, only slightly faster than in Northern England and slower than northern England before work on an upgrade of its existing main line started.[94]

The difference with the North, as the Centre for Cities points out, is "frequency, rather than speed," and perhaps even more (because frequencies at least on the main routes in the Rhine-Ruhr and northern England are actually quite similar) capacity, density and quality of service. Links in Germany, the Netherlands and southern England are much more rail or metro-based and almost all those railways are electrified. Northern commuters have to rely more on buses and diesel trains, and reliability is lower.[95] (All that said, the quality of the Rhine-Ruhr rail network is actually much closer to Northern England's than many in Britain realise.

92. https://committees.parliament.uk/writtenevidence/43332/pdf/

93. https://www.urbantransportgroup.org/system/files/general-docs/Rail%20and%20urban%20government_FINAL.pdf

94. See int.bahn.de for times. The fastest journey time from Leeds to Manchester was 48-50 minutes, but has been stretched to 64-68 minutes to allow for the line upgrade.

95. https://www.centreforcities.org/reader/building-northern-powerhouse-lessons-rhine-ruhr-randstad/five-facts-randstad-rhine-ruhr-comparison-northern-powerhouse/

The service is often terrible. Cancellations and late running are now routine, and over the summer entire routes were suspended for lack of staff and rolling stock.)[96]

Yet even with (somewhat) better transport, and often shorter distances between cities, than in Northern England, the Rhine-Ruhr does not operate as a "megatropolis" or agglomeration and neither does the Randstad. As academic experts and the Centre for Cities, among many others, have said, "commuting links show [these places'] city regions to be distinct, rather than operating as part of a larger, single economy." Commuting between cities in both Rhine-Ruhr and the Randstad "tend[s] to be quite low," with the vast majority of it taking place within city areas of each region rather than between them.[97]

The vast majority of people, both here and in Germany and the Netherlands, live in the same city area they work in – that is, either in the city itself, or in the countryside and towns immediately around it. The North's weakness is that, unlike Germany's, its cities are individually weak. The agglomeration effect happens largely *within* city areas, not between them; it is poor transport *within* Britain's city areas that makes them less agglomerated, effectively "smaller," than they should be; and it is better transport *within*, not between, the North's city areas that will help drive economic and productivity growth.[98]

To some extent, this is already happening. Over the last 20 years Manchester has grown more than the UK and Northern average, not through chimerical long-distance high-speed rail schemes but, in part, through significant improvements to Metrolink, the local light rail network in the city area, which now serves 99 stops. Despite this improvement, Manchester remains economically weak relative to European comparators – which is why it is so worrying, as stated above, that Metrolink expansion has slowed or stopped and there has been little progress on bus priority as local leaders obsess about high-speed rail.

Region-wide agglomeration is even less likely to happen in Northern England than in the Randstad or Rhine-Ruhr, given the immutable facts of geography. Firstly, the distances are quite often greater: Hull and Liverpool, the cities at either end of the proposed Northern Powerhouse Rail route, are 126 miles apart by rail. Secondly, unlike in any of the comparator regions, the two main cities are separated by England's biggest mountain range, and by miles of beautiful but largely uninhabitable moorland.

Many other places in Northern England are also separated from each other by hills or mountains, creating distinct and particular economies and identities. In Yorkshire, particularly, trying to mash together even places which are geographically close has been difficult: fifty years after local government reorganisation, many in, say, Dewsbury have never accepted being joined (in "Kirklees") to Huddersfield, less than 10 miles away. The political culture of Teesside is quite different from that of Manchester, NPP's heartland, which is different again from Merseyside or Yorkshire.

The notion that a single railway line, however fast, serving only a handful of stops, can alone create a single "megatropolis" is at best

96. https://www.vrr.de/en/aktuelles/meldungen/shortage-of-skilled-labour-leads-to-restrictions-in-regional-rail-transport/
97. https://www.centreforcities.org/reader/building-northern-powerhouse-lessons-rhine-ruhr-randstad/five-facts-randstad-rhine-ruhr-comparison-northern-powerhouse/
98. Ibid.

unevidenced. (In any case, many journeys on NPR would in practice be little, if at all, faster, see Chapter 3). The claims of a "6 per cent rise in productivity" and 8% rise in GVA "across the North" from one section of NPR alone appear to be little more than assertions in a report[99] for the NPP by Mott MacDonald, another consultancy earning hundreds of millions of pounds from HS2.[100] The Mott report gives no indication of how the figures, which seem deeply implausible, were reached.

The Northern Powerhouse Independent Economic Review (NPIER), which attempted to consider the actual evidence, stated that a very wide range of improvements constituting a "substantial restructuring of the North's economy" - including better transport, local, regional and inter-city, but also "substantial improvements in the skills base [and] in innovation performance" - could raise the North's productivity by 4 per cent.

It cautioned, too, that "there is particular uncertainty over the scale of agglomeration benefits that could be realised by fast journey times between the cities of the North, and the extent to which these are additional to the North rather than a redistribution of activity within the North."[101] The NPIER said the impact of reduced journey times on GVA would be "less than 0.5%" allowing for skill levels, occupational composition and other factors.[102]

The argument that inter-city railway lines bring significant agglomeration benefits grows even more stretched when applied to HS2, with 80 miles of largely open countryside between Manchester and Birmingham.

Outlandish claims

The claims about GVA and productivity above are among several made by the high-speed rail lobby which, to put it kindly, lack visible means of support. Henri Murison, the Northern Powerhouse Partnership's chief executive, claimed in 2023 that opening HS2 and NPR in full would deliver "significantly over £100 billion in economic benefit… *every year*… It's not just one year you get the benefit. *The first year [after opening] basically pays for it, and every other year is a bonus* (our italics)."[103] The Northern Powerhouse Partnership has also claimed that HS2 and NPR are "key to unlocking" a "£1008 billion prize" for the North's economy.[104] This was then reported as a "one-trillion pound jackpot for the North" if HS2 got the go-ahead.[105]

The Northern Powerhouse Independent Economic Review, referred to above, was given as the source for both these claims. But its main report didn't even mention HS2, except in an annexe, and as stated above it was "uncertain" that faster trains could really release meaningful benefits. It stated that the "significantly over £100bn" (in fact £97bn) increase in GVA could come only from a "transformational" scenario involving far wider changes than two high-speed rail schemes, including "substantial improvements in the skills base and graduate retention and attraction, innovation performance, and inward investment… across the North" as well as "transformational improvements to the North's transport connectivity" with "integrated… city-region local public

99. https://www.northernpowerhousepartnership.co.uk/wp-content/uploads/2021/10/FINAL-3541_WhitePaper_MW_Northern-PowerhouseRail.pdf
100. https://www.newcivilengineer.com/latest/hs2-arup-mace-and-balfour-among-highest-earning-from-1-25bn-spent-on-work-for-scrapped-phase-2-11-10-2023/
101. https://transportforthenorth.com/wp-content/uploads/Northern-Powerhouse-Independent-Economic-Review-Scenarios-For-Future-Growth.pdf
102. ibid
103. LBC, 4 October 2023, https://twitter.com/LBC/status/1709556277347541348
104. https://x.com/ConnectBritain/status/1184391089278599169
105. https://www.mirror.co.uk/news/politics/one-trillion-pound-jackpot-north-20586219

transport networks… involving frequent rail services, light rail and bus, all supported by smart, multi-modal ticketing" as well as improved inter-city services.[106] The source of the NPP's "£1 trillion" claim (40 per cent of the UK's entire annual GDP) is unclear: it may simply be the £100 billion claim, multiplied by ten.

An equally far-fetched claim was made by the then HS2 chairman, Terry Morgan, in 2018, who said that the (full Y-shaped) scheme would create 500,000 new jobs[107] and that this was "just the beginning."[108] The figure was repeated by his successor, Allan Cook, the following year.[109] This number, actually 451,000, was produced by HS2 Ltd adding up various claims made in the HS2 "growth strategies" published by local authorities and regional bodies along the line.[110] It includes, for instance, a claim that HS2 will create 37,000 new jobs in Crewe - a place where there are only 23,000 jobs at the moment.[111] Even the source document, a local council report, only states the figure as an "up to" and no evidence is given for how it was reached.[112]

The "500,000" figure also includes a claim by the West Midlands Combined Authority, since deleted from its website, that "the project will transform the West Midlands by creating more than 100,000 jobs, adding £14 billion to the local economy."[113] Birmingham City Council previously predicted a much lower number, "nearly 13,000," of new jobs in "Greater Birmingham."[114] Centro, the then WM transport authority, predicted 22,000 new jobs in the West Midlands from HS2[115], or 51,000 jobs with an additional £2bn package of local transport improvements. The number seems to derive from a claim, also unevidenced, by one of the Local Enterprise Partnerships that 104,000 jobs could be "created *and safeguarded*" by the scheme[116] - not the same thing at all, of course.

In Greater Manchester, HS2 is claimed to create 96,000 new jobs. But the council document it's drawn from again gives no source for the figure and makes clear that it refers to jobs delivered by HS2 and Northern Powerhouse Rail.[117] The East Midlands accounted for 74,000 of the new jobs, according to HS2. But the source document is far more indirect: "Our analysis suggests that by targeting some of our key sectors that can benefit from HS2 connectivity, in particular manufacturing, technology and high value services, we can boost employment growth from just below to above the projected UK trend - equivalent to an additional 74,000 jobs and almost £4 billion of GVA by 2043."[118]

Media failings

One part in the disaster was played by the North's regional media, who largely became cheerleaders for high-speed rail rather than reporters or scrutineers, their proper role. Though the state of the North's transport was a great subject to campaign on, several totally bought high-speed rail as the solution, repeating dubious lobbyist claims without challenge, doing little or no independent reporting or analysis and making little effort to find out what their readers actually thought or wanted. (Indeed, at least one major title, the Manchester Evening News, is no longer even

106. https://www.transportforthenorth.com/wp-content/uploads/Northern-Powerhouse-Independent-Economic-Review-Executive-Summary.pdf - page 16
107. https://live-newstatesman-b2b.pantheonsite.io/90000-homes-half-million-jobs-to-be-created-by-hs2/
108. https://www.yorkshirepost.co.uk/business/hs2-boss-tell-economic-growth-conference-500000-new-jobs-are-just-beginning-224882
109. https://assets.publishing.service.gov.uk/media/5de7d73b40f0b60881a07230/hs2-chairmans-stocktake.pdf
110. https://www.transport-network.co.uk/HS2-chair-trumpets-500k-jobs-and-90k-homes/15426
111. https://moderngov.cheshireeast.gov.uk/documents/s59543/Crewe%20HS2%20Masterplan%20-%20app%202.pdf
112. ibid.
113. https://web.archive.org/web/20220308144339/https://www.wmca.org.uk/what-we-do/hs2/our-vision/
114. https://assets.publishing.service.gov.uk/media/5a7c6bb8ed915d6969f44bdd/strategic-case.pdf - page 97.
115. https://web.archive.org/web/20231231223543/https://railuk.com/high-speed-rail/centro-responds-to-green-gauge-21s-hs2-report/amp/
116. https://web.archive.org/web/20210803094904/https://gbslep.co.uk/resource/report/midlands-hs2-growth-strategy/
117. https://assets.ctfassets.net/nv7y93idf4jq/4sSHKQVxGM-QuM488IMsWqG/cdc77581d9f6ce8d407b07976a2417e0/17-1060_HS2_Growth_Strategy.pdf
118. https://www.broxtowe.gov.uk/media/5334/east-mids-hs2-growth-strategy-final-version-2017.pdf

based in the city it covers.) People who do not support high-speed rail – in every opinion poll, the majority – have found little place in their pages.

Instead of being close to their readers, newspapers have instead become close to regional politicians. Last year the political editor of the Liverpool Echo, while doing that job, ghost-wrote a book which calls itself a "half-memoir, half-manifesto" for the metro mayor he is supposed to be covering.[119] This year, the editors of the Echo and the MEN published a statement co-ordinated with the metro mayors of Liverpool, Steve Rotheram, and Greater Manchester, Andy Burnham, on the day those politicians launched their publicity campaign for a new high-speed railway. As Burnham put it, "the MEN and the Echo have never left our side."[120]

The day HS2's eastern leg to Leeds was cancelled, in 2021, the editor of the Yorkshire Post, James Mitchinson, wrote that he "became emotional...I've taken this one so personally... I'm almost grieving for what I know the people living in our region have been denied."[121] It was quite proper to cover the significant opposition to the cutback, including from big-city council leaders in Leeds and Sheffield. But the fact that leaders of other Yorkshire councils such as Rotherham and Wakefield, and the majority of the people of Yorkshire, supported the cancellation and preferred the alternative projects does not appear to have been reported by the paper.

There were also subtler forms of bias. As stated, rail accounts for only 2 per cent of journeys by volume, and 8 per cent by distance, and in the North (only partly because the trains are so bad) even less than this. But a recent BBC review (not specifically about HS2) found that the broadcaster does far more coverage of trains than of other forms of transport which serve more people, such as buses – because journalists travel by train, and because buses were seen as boring.[122]

Learning the wrong lessons from continental Europe

Another reason for the focus on high-speed rail is perhaps that, after the high media profile of France's TGV or Spain's AVE, high-speed railways came to be seen as successful; as core to a transport system; and maybe to some politicians as symbolic of being a modern European country.

But as the figures quoted above show, they are far from core. Other European countries fixed the actual core, their local urban transport networks, before turning to high-speed rail. As we have seen, the agglomeration effects attributed by British campaigners to high-speed rail are in fact attributable to good local services. And unlike in France, Spain, Germany or Italy, all England's main cities, save Newcastle, are within around 200 miles of all the others, meaning the time saved by high-speed rail is not worth the substantial extra costs of building it. The relative closeness of England's cities means greater population density, too, and thus greater expense and political difficulty building disruptive high-speed track than in the emptier countryside of Spain or France.

Even with the Continent's more favourable geography and lower costs,

119. https://www.livpost.co.uk/q-who-wrote-the-mayors-new-book-a/
120. https://www.inpublishing.co.uk/articles/men-and-liverpool-echo-join-forces-25371
121. https://mobile.twitter.com/SamShedden/status/1461764343591325696
122. https://www.bbc.co.uk/aboutthebbc/documents/thematic-review-taxation-public-spending-govt-borrowing-debt.pdf

many of its high-speed lines are failures: unnecessary, wasteful, and badly-delivered, according to a report by the EU's Court of Auditors, the Brussels equivalent of the National Audit Office, which examined ten high-speed rail schemes in EU countries.

As the auditors found, "trains run on average at only around 45% of the line's design speed on the lines audited, and only two lines were operating at an average speed above 200 km/h" (125mph, the current UK maximum linespeed on its *conventional* main lines.) The same benefits, the report said, could have been achieved at "far lower" cost by building or upgrading conventional lines. The Paris-Nantes TGV, for instance, typically covers the 243-mile distance in 2 hours 15 minutes, an average speed of 108mph, only 15-20mph faster than many of Britain's conventional intercity services. (London-Newcastle averages 95mph, London-Manchester 88mph.)

The auditors also found that decisions were "often based on political considerations" rather than proper analysis, and that "cost overruns… and delays were the norm instead of the exception," with cost overruns averaging 78 per cent and half the ten projects experiencing delays of more than a decade.[123]

Britain's only existing high-speed line, HS1 from London to the Channel Tunnel, though rightly considered a success (and much cheaper than HS2), has fallen vastly short of the usage predictions made by its promoters[124] and remains substantially underused, with around 50 per cent spare capacity.[125]

Though urban transport networks in most Continental cities are better than Britain's, the significant costs of high-speed rail have often left less money for other conventional services. Between 2012 and 2023, when the UK rail network grew slightly, France closed around 2,000 miles, 10 per cent, of its system.[126] Many other French lines have almost no service, and many direct trains from the regions to Paris and other main cities have been replaced by connections or buses. As Franck Leroy, president of the country's Grand Est regional council, said: "There is a feeling of abandonment, a feeling that everything was sacrificed to high-speed."[127] Germany's conventional railways have suffered significant underinvestment and collapsing performance – also affecting the high-speed service, which shares many sections of conventional track.

A number of countries have cancelled high-speed schemes, including Sweden, the Netherlands and Malaysia. The US federal government has withdrawn funding for the California high-speed project.

123. https://www.eca.europa.eu/lists/ecadocuments/sr18_19/sr_high_speed_rail_en.pdf
124. https://assets.publishing.service.gov.uk/media/5a7de8afed915d74e33eece2/Review_of_HS1_demand_forecasts.pdf
125. https://www.railadvent.co.uk/2025/04/groundbreaking-scheme-to-accelerate-growth-of-international-train-travel.html
126. https://ec.europa.eu/eurostat/web/transport/database
127. https://lecourrier.vn/france-un-futur-train-a-batteries-pour-les-petites-lignes-rurales-devoile/1269729.html

Chapter 3
New high-speed dreams?

Northern Powerhouse Rail/ Northern Arc: a high-speed line that will take longer than the existing service

In early June 2025, the Financial Times reported that the chancellor, Rachel Reeves, had "signed off plans to spend billions of pounds on a new railway line between Manchester and Liverpool… as part of next week's Whitehall spending review."[128]

The spending review – and, the week after, the government's ten-year infrastructure strategy – came and went without any commitment to this scheme, part of an east-west high-speed project called Northern Powerhouse Rail which was supposed to run from Liverpool to Manchester and Leeds. But something does appear to be happening. The infrastructure strategy said that the Government would "set out plans to take forward its further ambitions on Northern Powerhouse Rail in the coming weeks."[129] In mid-August, it was briefed to journalists – and has not been denied – that ministers will commit to this scheme, or at least the Liverpool-Manchester section of it, at or before this month's Labour Party conference.[130]

The chancellor, Rachel Reeves, had previously sounded a cautious note on even the Liverpool-Manchester element, saying in October 2024: "We need to make sure we work through all the commitments and only sign up to things we can genuinely afford as a country."[131] Asked in December whether NPR was still viable, the then DfT permanent secretary, Dame Bernadette Kelly, replied: "I am slightly stepping back from the language of Northern Powerhouse Rail, because… it is important when we think about what we are going to try and achieve through rail investment in the north that we look at it as a series of programmes and choices rather than a big totemic thing. As we know with HS2 Ltd, that can become quite problematic as we try to deliver things."[132] Kelly said there were "big value-for-money challenges" over NPR.[133]

If there is a dispute in government about how firmly to commit to this scheme, that should be welcomed. Northern Powerhouse Rail is a scheme that makes HS2 look sensible. It will be a high-speed railway on which trains will never be able to reach high speeds, because the stations are too close together. The Manchester-Liverpool section will start with a vastly expensive eight-mile tunnel in the wrong direction – roughly south, only then turning west towards Liverpool. This section alone will cost perhaps

128. https://www.ft.com/content/9e2dba53-1fb9-46b0-8900-c6b251e3db26
129. https://assets.publishing.service.gov.uk/media/6853c5db99b009dcdcb73649/UK_Infrastructure_A_10_Year_Strategy_Web_Accessible.pdf
130. https://www.theguardian.com/business/2025/aug/13/labour-to-revive-northern-powerhouse-rail-project-trains
131. https://www.liverpoolecho.co.uk/news/liverpool-news/chancellor-wont-commit-liverpool-manchester-30073093
132. https://committees.parliament.uk/oralevidence/15160/pdf/
133. ibid

£30 billion, but actually take longer to get from Manchester to Liverpool than the existing service. It is certain to be an even more "appalling mess" than HS2. Even the HS2 lobbyists Greenguage 21 argue against it, saying that it "wouldn't solve the main problem facing North West England's rail network."[134]

The origins of Northern Powerhouse Rail

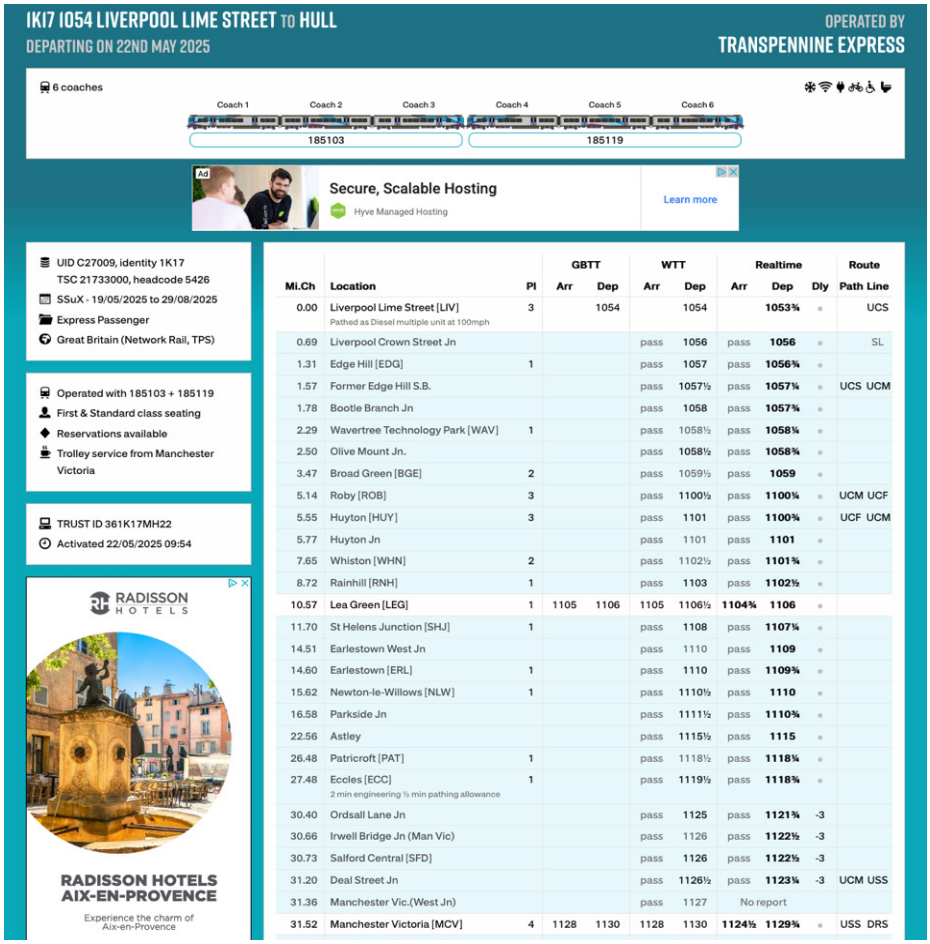
The first 15 or so miles of HS2 Phase 2 south out of Manchester, from the city centre to Millington, a few miles west of Manchester Airport, were due to be shared by Northern Powerhouse Rail. Between Manchester and Liverpool, NPR trains would have used the HS2 tracks to Millington, then a newbuild high-speed line from there to Warrington, then an upgraded existing conventional freight line (currently little used) from Warrington to Ditton, near Widnes, then the existing conventional main line from there into central Liverpool.

When the last government cancelled Phase 2, it announced that it had set aside £12 billion to better connect Manchester and Liverpool. This would, it said, allow the delivery of NPR between the two cities as previously planned, including the high-speed line between Manchester, Millington and Warrington. But it said ministers would work with local leaders to agree whether they wished to suggest other uses of this money to achieve the same objectives.[135]

This sentence was included because without HS2, a north-south route, it makes no sense at all to build a line this way from Manchester to Liverpool, an east-west journey. Liverpool is more or less exactly west of Manchester. In the 2025 timetable, trains on the existing direct, electrified and upgraded route, the "Chat Moss" line through Newton-le-Willows, are timetabled to do the trip in 34 minutes, including one stop at Lea Green en route and a 2-minute "engineering allowance."[136] As the realtime running data (third column) below shows, they actually often do it in just over 30 minutes, even with the Lea Green stop, arriving several minutes ahead of schedule. A non-stop service could achieve a sub

134. https://www.greengauge21.net/rail-transport-needs-of-the-northern-arc/
135. https://assets.publishing.service.gov.uk/media/65294b416b6fbf0014b75641/network-north-transforming-british-transport.pdf
136. https://sacuksprodnrdigital0001.blob.core.windows.net/electronic-national-rail-timetable/electronic%20National%20Rail%20Timetable/02.%20December%202024%20timetable%20documents/London%20North%20West%20Route/087%20Liverpool%20to%20Manchester%20(Summary).pdf

30-minute time on current infrastructure. (In May 2025, the journey time on most of these trains was temporarily extended by a few minutes to allow for engineering work on the Transpennine Route Upgrade, though the fastest trains still do the journey in 31-34 minutes.)



1K17 1054 LIVERPOOL LIME STREET TO HULL
DEPARTING ON 22ND MAY 2025
OPERATED BY TRANSPENNINE EXPRESS

6 coaches
Coach 1 Coach 2 Coach 3 Coach 4 Coach 5 Coach 6
185103 185119

UID C27009, identity 1K17
TSC 21733000, headcode 5426
SSuX - 19/05/2025 to 29/08/2025
Express Passenger
Great Britain (Network Rail, TPS)

Operated with 185103 + 185119
First & Standard class seating
Reservations available
Trolley service from Manchester Victoria

TRUST ID 361K17MH22
Activated 22/05/2025 09:54

Mi.Ch	Location	Pl	GBTT Arr	GBTT Dep	WTT Arr	WTT Dep	Realtime Arr	Realtime Dep	Dly	Route Path Line
0.00	Liverpool Lime Street [LIV] Pathed as Diesel multiple unit at 100mph	3		1054		1054		1053¾		UCS
0.69	Liverpool Crown Street Jn				pass	1056	pass	1056		SL
1.31	Edge Hill [EDG]	1			pass	1057	pass	1056¾		
1.57	Former Edge Hill S.B.				pass	1057½	pass	1057¼		UCS UCM
1.78	Bootle Branch Jn				pass	1058	pass	1057¾		
2.29	Wavertree Technology Park [WAV]	1			pass	1058½	pass	1058¼		
2.50	Olive Mount Jn.				pass	1058½	pass	1058¾		
3.47	Broad Green [BGE]	2			pass	1059½	pass	1059		
5.14	Roby [ROB]	3			pass	1100½	pass	1100¾		UCM UCF
5.55	Huyton [HUY]	3			pass	1101	pass	1100¾		UCF UCM
5.77	Huyton Jn				pass	1101	pass	1101		
7.65	Whiston [WHN]	2			pass	1102½	pass	1101¾		
8.72	Rainhill [RNH]	1			pass	1103	pass	1102½		
10.57	Lea Green [LEG]	1	1105	1106	1105	1106½	1104¾	1106		
11.70	St Helens Junction [SHJ]	1			pass	1108	pass	1107¼		
14.51	Earlestown West Jn				pass	1110	pass	1109		
14.60	Earlestown [ERL]	1			pass	1110	pass	1109¾		
15.62	Newton-le-Willows [NLW]	1			pass	1110½	pass	1110		
16.58	Parkside Jn				pass	1111½	pass	1110¾		
22.56	Astley				pass	1115½	pass	1115		
26.48	Patricroft [PAT]	1			pass	1118½	pass	1118¼		
27.48	Eccles [ECC] 2 min engineering ½ min pathing allowance	1			pass	1119½	pass	1118¾		
30.40	Ordsall Lane Jn				pass	1125	pass	1121¼	-3	
30.66	Irwell Bridge Jn (Man Vic)				pass	1126	pass	1122½	-3	
30.73	Salford Central [SFD]				pass	1126	pass	1122½	-3	
31.20	Deal Street Jn				pass	1126½	pass	1123¼	-3	UCM USS
31.36	Manchester Vic.(West Jn)				pass	1127	No report			
31.52	Manchester Victoria [MCV]	4	1128	1130	1128	1130	1124½	1129¾		USS DRS

NPR, by contrast, would first travel for 15 miles in the wrong direction, roughly south - only then turning west towards Liverpool. It would be built as new high-speed track between Manchester and Warrington - but would then join an existing conventional line, snaking on sharp curves round a chemical works, as far as Ditton, near Widnes, and then (probably) the existing, fairly heavily-used conventional main line into Liverpool via the busy Edge Hill cutting.

The total distance to Liverpool, about 42 miles, would be a third longer than via the existing Chat Moss route, 31.5 miles. Trains would also stop more often, with intermediate stations in the vicinity of Manchester Airport, at Warrington Bank Quay (on low-level platforms below the existing station) and "Liverpool Gateway" in the Ditton area. Because these stops are close together, and trains take longer to speed up and slow down than a car, trains would not be abe to reach very high speeds.

So even though the new sections would be built as high-speed line, NPR would actually take *longer* than the current conventional service, taking

35 minutes for the Manchester-Liverpool journey.[137]

That is not the only problem. Around eight of that first 15 miles would be in a long tunnel under Manchester's southern suburbs. Just under a mile would be on viaduct in the inner city. Tunnels and viaducts are very expensive. The route out of Manchester to the west is far less built-up. In Cheshire, there would need to be four major new bridges, three across motorways and the fourth at a high level across the Manchester Ship Canal.[138]

Official government analysis in 2024 said this route was the worst value of the three, with a "higher capital cost, a slower journey time and consequently a likely worse benefit-cost ratio" than either of the other options.[139]

The official justification for doing it like this is that trains would also be able to serve Manchester Airport. But NPR's "Manchester Airport" station would actually be almost a mile from the airport, at Davenport Green, on the other side of the M56 motorway. You'd have to catch a bus to reach the terminals – or potentially a tram, if it was extended - adding perhaps 15-20 minutes, and considerable hassle, to every journey.

With this additional transfer time, getting to the airport would again be slower, or at best no quicker, from most places by NPR than by the current conventional trains - which run into the heart of the airport itself, taking as little as 13 minutes from central Manchester. (The equivalent journey on NPR, including the transfer, would take at least twice as long.)

The other justification given is that the Bill to build some of the route, the Manchester end originally intended to be shared with HS2, is already in Parliament, having passed its early stages in 2022 before Phase 2 was cancelled (the Bill has been on hold since.) This is also a poor argument. The mayors' ambitions for a new underground station and city-centre tunnel in Manchester (see below) mean that the existing Bill, which authorises a surface station and city-centre viaduct, will have to be heavily amended, if not dropped. The proposed section of new high-speed line between Millington and Warrington is not covered by the existing Bill at all, and will almost certainly need a separate parliamentary process.

The real justification for doing it like this, almost certainly, is that the industry, the lobbyists, the DfT and the mayors still hope that the northern leg of HS2, or a version of it, can somehow be revived. But the risk is that, in trying to hold on to the remnants of HS2, the North ends up with a scheme quite unsuitable for the very different job it has to do now.

"This isn't another 'big rail' vanity project"

The mayors of Greater Manchester and Liverpool City Region have ignored the last government's invitation to consider a different scheme, issuing a series of demands that ministers go ahead with the route as previously planned.

In May the mayors published a report on the proposal, which they have now rechristened the "Liverpool-Manchester Railway" serving what

137. https://assets.publishing.service.gov.uk/media/62389f1ae90e07799cd3de47/integrated-rail-plan-for-the-north-and-midlands-web-version.pdf - pages 19,116

138. Across the canal, there remains an existing, long-disused Victorian railway bridge, but it is highly unlikely that it would be suitable for high-speed trains.

139. Internal government documents.

they call the "Northern Arc." Tellingly, the foreword pleaded: "This isn't another 'big rail' vanity project." It involved most of the usual suspects – again written by Arup, and with a "partnership board" including Atkins, Mott MacDonald, Laing O'Rourke and other HS2 contractors.[140]

It contained several misleading claims, including that the distance between Liverpool and Manchester on the new railway is 50km (31 miles),[141] which is the crow-flies distance between the two city centres and the distance on the existing direct line. The distance on the mayors' preferred line, as stated above, would be around 42 miles, more than a third longer.

The report also claimed that trains could do the trip on the new line in 32 minutes with three intermediate stops,[142] not the previously-quoted 35 minutes with two intermediate stops.[143] Thirty-two minutes was presumably chosen to be fractionally quicker than the 34-minute existing service, but is not realistic for that distance and those stops at that spacing. Several media reports, likely based on briefings by the mayoral teams, falsely said the journey time between Liverpool and Manchester would be even lower, around 20 minutes.[144]

Transport for Greater Manchester has claimed that the new line would "create an additional £7bn annual GVA [gross value added],"[145] a nearly 4 per cent rise in the entire economic output of the North West - another implausible number without any obvious source attached.

Though the mayors want the route to be the same, Burnham wants an underground city-centre station at Piccadilly. He says, quite rightly, that the current plan to build an NPR surface station there next to the existing platforms would be enormously disruptive to central Manchester, including years-long severance of Metrolink; would consume valuable development land; would carve an ugly viaduct through the inner city; and would mean that trains from Liverpool to Yorkshire have to reverse in Manchester. But an underground station, and associated extra tunnelling, would be more expensive.

Liverpool, too, wants a different approach to its city centre, potentially including newbuild tunnelled line and an underground station. But it does not yet seem to have settled on a plan, or a site for the station, and the approach to Liverpool is shown as dotted lines in the mayors' document. Again, this will certainly be more expensive.

The mayors' report said the amount set aside by the last government for Manchester-Liverpool was £17 billion[146] – £5 billion more than the amount actually set aside.[147] (The mayors may be hoping to make up the difference from other parts of the Northern Powerhouse Rail budget.)

Even this, however, appears unrealistic. With the underground station and extra tunnels in central Manchester, a more realistic figure for Manchester-Liverpool is likely to be at least £20 billion – more again if a tunnelled section into Liverpool is to be built. The Stone Railway Campaign Group has estimated that the Liverpool-Manchester section could cost £24.7bn, or £35.8bn with a tunnelled approach to Liverpool.[148]

140. https://greatermanchester-ca.gov.uk/media/sttdzqkv/connecting-the-north-west-to-drive-national-prosperity-may-2025-accessible-2025-05-13.pdf

141. https://greatermanchester-ca.gov.uk/media/sttdzqkv/connecting-the-north-west-to-drive-national-prosperity-may-2025-accessible-2025-05-13.pdf - page 18

142. Ibid, page 18

143. https://assets.publishing.service.gov.uk/media/62389f1ae90e07799cd3de47/integrated-rail-plan-for-the-north-and-midlands-web-version.pdf - pages 19,116

144. https://www.liverpoolecho.co.uk/news/liverpool-news/new-station-liverpool-faster-trains-31634862 and https://eandt.theiet.org/2025/05/14/new-manchester-liverpool-rail-link-would-slash-commutes-times-create-22000-jobs

145. https://committees.parliament.uk/writtenevidence/137314/pdf/

146. https://greatermanchester-ca.gov.uk/media/sttdzqkv/connecting-the-north-west-to-drive-national-prosperity-may-2025-accessible-2025-05-13.pdf - page 43

147. https://assets.publishing.service.gov.uk/media/65294b416b6fbf0014b75641/network-north-transforming-british-transport.pdf - page 21 and https://www.gov.uk/government/speeches/northern-powerhouse-rail-between-liverpool-and-manchester

148. Correspondence with the author

Northern Powerhouse Rail east of Manchester

NPR also involved high-speed tracks running east of Manchester across the Pennines to Leeds. This was proposed even though the existing conventional main line between the two cities is currently being upgraded, resignalled, electrified, and given new stretches of three and four-tracking. That in-progress £12bn scheme, called the Transpennine Route Upgrade (TRU) and due for completion in the early 2030s, will allow six fast trains per hour between Manchester and Leeds, taking around 41 minutes.[149]

In 2019 Transport for the North (TfN), the statutory transport body led by the region's councils and mayors, proposed two main options for NPR east of Manchester. The first, a hybrid, was roughly half newbuild high speed line (from Manchester to Marsden, near Huddersfield) and half using existing upgraded lines. Option two was a full newbuild high-speed line, in tunnel almost all the way, via Bradford rather than Huddersfield.[150]

The Johnson government promised in 2019 – most unwisely – that it would "fund the Leeds to Manchester route,"[151] by which it meant the first, hybrid, option, costing about £22 billion. But TfN and the Northern leaders quickly decided they wanted the maximum scheme, costing £36 billion (in 2021 prices)[152] - even though the journey from Manchester to Leeds would only have been three minutes faster than under the hybrid plan, and only 11 minutes faster than the journey time already due to be achieved by TRU.

The fact that TfN had itself proposed a hybrid option was quickly forgotten. When it was formally made the Government's choice in 2021's Integrated Rail Plan, outrage and cries of betrayal ensued from TfN and the politicians – a sobering lesson in the folly of allowing expectations to rise ahead of what can and should be delivered.

It was also a lesson in the mistake of treating projects as separate, totemic schemes rather than as part of a network. As the Government itself put it in 2021's Integrated Rail Plan: "Two projects [NPR and TRU] for rail services between the same two places were effectively being proposed in isolation from each other."[153]

The full-fat NPR scheme suffered the same design flaws as its high-speed brethren. The main rationale for the extra expense was to serve Bradford but the proposed NPR station there, as at Manchester Airport, is too badly placed to be of much use: disconnected from local services at the existing bus and rail stations, a 10-minute walk outside the city centre and severed from it by a six-lane ring road. Most journeys to Bradford are to the city centre, or require interchange to local services. NPR would have made those journeys little better, or worse; any time gained on the trip from Manchester or Leeds would have been lost, or largely lost, in the increased time and hassle of making the local connection. As one local user group said, "you could stay on the train and be in Leeds quicker."[154]

Interestingly, there now appears to be a divergence of approach either side of the Pennines. While Liverpool and Manchester's focus is still on high-speed schemes, the three Yorkshire metro mayors published a report last month calling for the government to commit to a series of

149. https://thetrupgrade.co.uk/benefits/
150. https://assets.publishing.service.gov.uk/media/62389f1ae90e07799cd3de47/integrated-rail-plan-for-the-north-and-midlands-web-version.pdf
151. https://www.gov.uk/government/speeches/pm-speech-at-manchester-science-and-industry-museum
152. https://assets.publishing.service.gov.uk/media/62389f1ae90e07799cd3de47/integrated-rail-plan-for-the-north-and-midlands-web-version.pdf
153. https://assets.publishing.service.gov.uk/media/62389f1ae90e07799cd3de47/integrated-rail-plan-for-the-north-and-midlands-web-version.pdf
154. https://hadrag.com/2021/07/22/bradford-npr-station-worry/

rail improvements, mainly upgrades to conventional lines.[155] Their report did mention the trans-Pennine section of NPR – though it didn't feature prominently, and seems to be the hybrid version chosen in the Integrated Rail Plan, rather than the full-fat version demanded in 2019.[156] Also interestingly, the Transport Secretary, Heidi Alexander, and the rail minister, Lord Hendy, are pictured with the mayors on the frontispiece to the report.

"HS2 Light"

In September 2024, a year after the last government cancelled HS2 Phase 2, its northern leg between the West Midlands and Manchester, the mayors of Greater Manchester and the West Midlands, Andy Burnham and Richard Parker, published a proposal for what they claimed was a lower-specification, lower-cost Phase 2 replacement, using exactly the same route.[157]

The mayors put their names to the report and fronted the press conference but it was actually written or supported by many of the usual consultancy and construction firms in the Northern Powerhouse Partnership and the Maier review, and profiting from HS2 - Arup, Mace, Skanska, Dragados and so on - and was under the direction of Sir David Higgins, chairman of HS2 Ltd from 2014-18.[158] The contact address is an Arup corporate email.[159]

The mayors' new plan would, they said, deliver up to 85 per cent of the benefits of the previous Phase 2 scheme, yet cost between 25 and 40 per cent less. It was not shown how the figure had been calculated but it was, they said, achievable by building the line for 185mph operation (the European high-speed standard), rather than the 250mph of the London-West Midlands section (Phase 1), and with ballasted rather than slab track. This would allow the scheme to be delivered "in partnership with… the private sector."[160] Higgins claimed: "We have conclusively shown that a new line can be built cheaper and faster."[161]

Even HS2's strongest supporters were unconvinced: the rail commentator Gareth Dennis said the plans were "bad," "technically illiterate" and "based on several severely misjudged ideas about costs. Suggesting that anything other than the full and original HS2 design will be cheaper and quicker to deliver is wrong."[162]

This is likely to be correct. We considered an option like this in government, not just for phase 2 but for the full scheme - coming to quite the opposite conclusion from Higgins: that it would likely to be very little, if at all, cheaper, given the costs of redesigning and possible reconsultation and even re-legislation. The cost differential between 185 and 250mph is largely in route choice (a faster route has to be flatter and straighter, needing more earthworks) but if the same route was to be used this saving would not be available.

The official claimed cost of the cancelled section of Phase 2, at the time it was cancelled, was around £290 million per mile in 2023 prices.[163] The mayors' claim of a 25-40% saving thus implies a cost of £175m- £215m

155. https://www.westyorks-ca.gov.uk/media/dc1kmwkh/yorkshires-plan-for-rail-accessible.pdf
156. Ibid, see table, page 50
157. https://www.bbc.co.uk/news/articles/c1k3k87y497o
158. https://static1.squarespace.com/static/6639e259219ec5292dcad78f/t/66e1aac8b9a95d4a042577d5/1726065375571/Opportunity+through+Connectivity+Main+Report+FINAL+1.pdf
159. https://www.midlandsnorthwestraillink.co.uk/
160. https://static1.squarespace.com/static/6639e259219ec5292dcad78f/t/66e1aac8b9a95d4a042577d5/1726065375571/Opportunity+through+Connectivity+Main+Report+FINAL+1.pdf
161. https://static1.squarespace.com/static/6639e259219ec5292dcad78f/t/66e317f833d8dc65e26b029b/1726158841233/Midlands+NWRL+PR.pdf
162. https://x.com/GarethDennis/status/1834543859256185339
163. £19.8bn for c68 miles, see page 5 of https://assets.publishing.service.gov.uk/media/65294b416b6fbf0014b75641/network-north-transforming-british-transport.pdf - the full Phase 2 route was c83 miles but, as stated in chapter 3, the last 15 miles into Manchester were retained under the previous government for potential use in Northern Powerhouse Rail, see later in this chapter. The total claimed cost of Phase 2 with this last section was £31.8bn.

per mile, and a total cost of up to £14.6bn in 2023 prices (£15.2bn in 2025 money).[164]

But the actual cost of the section of HS2 that is currently being built, Phase 1, was in 2023 between £420 million and £490 million a mile[165] – more than twice as much. It is even more now. To be fair, Phase 2, apart from the last eight miles into Manchester, involves less tunnelling than Phase 1 – but even so, the chances of it being delivered for anywhere near the amount implied in the mayors' report are clearly very remote. A more realistic figure is £25-30bn.

The mayors' report continued the tradition of making outlandish and unevidenced claims of benefits, saying the new link could add "up to £70bn annually to the West Midlands and Greater Manchester economies."[166] The size of these economies, added together, is currently around £160bn a year.[167] In other words, it was claimed that connecting them with a faster rail line could expand them by almost 45 per cent.

The claim about private finance, too, is fanciful: no private investor could hope to get their money back on such a project, which is also why no private finance was found for phase 1, the more lucrative end involving London. Parker, the West Midlands mayor, had indeed already admitted this, saying in April 2024: "What I think is currently failing...is the idea that that line could ever be privately funded...No business in this country or any other country that I know of will buy land to put a spade in the ground unless any future rail line is underwritten by government."[168]

It is likely, of course, that the mayors and the lobbyists know all this perfectly well, but are hoping that talk of cost savings, private money and economic bonanzas can seduce the new ministers into reviving Phase 2. Only once work was well underway and too late to stop, with huge amounts already spent, would the real costs be admitted – a copy of the tactics used on Phase 1.

Mixed signals from ministers

Backers of HS2 Light were encouraged when sales of the land bought to build Phase 2, due to begin in summer 2024 after its cancellation, were put on hold. DfT has given occasional briefings to the media saying that ministers are sympathetic to HS2 Light.[169]

It emerged in June 2025 that the Transport Secretary, Heidi Alexander, had given "steers that [HS2 Phase 1] should plan to retain the spurs to the former Phase 2a and 2b sections,"[170] at a cost of half a billion pounds. It seems unlikely this money would have been authorised if there was no prospect at all of a revival.

The Chancellor, Rachel Reeves, appears cooler, however, saying in December that she would not "give people false hope" that the northern leg could be revived in some form, saying the government's transport focus was "connectivity within the north of England" rather than on the West Coast mainline.[171] Around the same time, New Civil Engineer magazine was told the DfT had "no intention" of progressing the mayors' proposal "until Phase 1 is completed."[172] A feasibility study or working

164. Again, this is for 68 miles, and assumes that the last 15 miles into Manchester will be paid for separately.

165. £49-57bn in 2019 prices, equivalent to £59-69bn in 2023 prices, for c140 miles, see https://www.gov.uk/government/speeches/hs2-6-monthly-report-to-parliament-november-2023

166. https://static1.squarespace.com/static/6639e259219ec5292d-cad78f/t/66e317e9ed3b7d1ab-cb27550/1726158825915/M-NWRL+-FAQs+-+13+September+2024.pdf

167. https://www.wmca.org.uk/media/bipfjwys/state-of-the-region-2023-report-250324.pdf and https://democracy.manchester.gov.uk/documents/s41838/Economic%20Strategy%20Update.pdf

168. At an election hustings in Hockley, 15 April 2024.

169. https://www.telegraph.co.uk/news/2025/03/19/hs2-scrapped-leg-replaced-new-rail-line/

170. https://assets.publishing.service.gov.uk/media/685177afcf42a58f50cac99b/hs2-ltd-letter-to-transport-secretary.pdf

171. https://www.ft.com/content/4d61552e-b097-40c6-8bbe-3a74cf06b7c1

172. https://www.newcivilengineer.com/latest/dft-wont-progress-mayors-birmingham-to-manchester-rail-plan-until-hs2-phase-1-completed-09-12-2024/

group promised by the previous transport secretary, Louise Haigh,[173] does not appear to have materialised.[174]

In July, the rail minister, Peter Hendy, said: "We are very aware of the capacity and connectivity constraints north of Birmingham to Manchester… we are looking at that very carefully…we hope to come back and say more in a few months' time." Asked whether that meant a new line, he said that the government was considering "doing it in sections." But Alan Over, the DfT official, added: "Before we jump to infrastructure solutions, we need to make sure that we cannot get capacity challenges solved in other ways using our existing capacity and capability." Hendy agreed: "Money is very tight, and investment in new infrastructure is, as Alan says, the last resort."[175]

Hendy, a junior minister, and DfT are not, of course, the decisionmakers here. As Hendy earlier admitted himself, "we will not be very persuasive to the Treasury and to the Chancellor and other parts of Government about doing any more [of HS2] until we can at least show that we have [Phase 1] properly under control."[176] But Phase 1, as we show earlier in this paper, is getting worse, not better.

Is the West Coast Main Line full?

One key claim to justify this scheme, constantly repeated, is that the West Coast Main Line (WCML; the existing conventional line between London, the West Midlands, the North West and the West of Scotland) is "close to the limit of its train-carrying capacity" and that "within the next decade, travel demand on the London-Manchester corridor will exceed the maximum capacity of the line."[177] Assuming 2 per cent growth per year, the WCML will be full by 2036, the mayors' report said.[178] Parker, in the report's press release, claimed the line was "already maxed out."[179] Even Peter Hendy, the rail minster, claimed in July 2025 that the WCML was already "nearly full, despite covid."[180]

As No10 transport adviser, the author repeatedly asked for evidence that the WCML would soon be full, but was never given any. Avanti West Coast runs 48 trains every weekday from Manchester to London, providing just over 27,000 seats in this direction each weekday.[181] The Office of Rail and Road, the regulator, says that in 2023/4 there were 3.4 million rail journeys between Manchester and Camden (the London borough in which Euston, the WCML terminus, sits.)[182] That is an average of 9,300 per day.

Thus across the average day only about a third of the service's current seating capacity from Manchester to London is used. At 2 per cent growth per year, it would take 53 years, not the claimed 12, to fill it. Of course, more passengers will join at intermediate stops (though Manchester is by far the busiest); some trains will be busier than others; there are slightly fewer trains at weekends; and about 4,700 of the 27,000 seats are first class, though first class passengers are also included in the 9,300 daily total.

The figures clearly do not, however, support any claim that the WCML

173. https://www.ft.com/content/896d40a0-6090-4686-858c-31e85f0f0ff6
174. https://www.pressreader.com/uk/i-weekend/20250301/281964613466664?srsltid=AfmBOorAQMp-jifp3eHaV85Kuh9iyEVekWPcvuVyG8OztA-JE8Q_Y59Mig
175. https://committees.parliament.uk/oralevidence/16312/pdf/
176. https://committees.parliament.uk/oralevidence/15124/pdf/
177. https://static1.squarespace.com/static/6639e259219ec5292dcad78f/t/66e1aac8b9a-95d4a042577d5/1726065375571/Opportunity+through+Connectivity+-Main+Report+FINAL+1.pdf
178. ibid
179. https://static1.squarespace.com/static/6639e259219ec5292dcad78f/t/66e317f833d-8dc65e26b029b/1726158841233/Midlands+NWRL+PR.pdf
180. https://committees.parliament.uk/oralevidence/16312/pdf/
181. Realtime Trains shows that 15 of the 48 are nine-car trains (with 469 seats each) and 33 are 11-car (607 seats each). Figures as of May 2025.
182. https://dataportal.orr.gov.uk/media/vmoa3nyv/regional-rail-usage-apr-2023-mar-2024.pdf

is full, or nearly full, or is going to be full any time soon. Indeed, some services on the line have recently been reduced (the number of fast trains from London to Birmingham has been cut by about a third since 2019, for instance.)

Many current trains are short and make poor use of track capacity

The claim of "train-carrying capacity" is also carefully worded. Significant extra seating capacity could be added on the WCML, very quickly, without needing to run a single extra train. One cause of crowding is that current Manchester-Birmingham services, in particular, operated by CrossCountry, use extremely short trains. Of the 31 trains from Manchester to Birmingham each weekday, nine have only three standard-class carriages and 16 have only four. Only six of the 31 trains each day (19%) have more than four standard-class carriages, typically seven cars.[183]

The total number of standard-class seats on this route is around 7,500 a day. Most or all of the shorter trains could very quickly be doubled in length by using trains of the same type – class 221 Super Voyagers – used until December 2024 by Avanti West Coast but now made surplus by its new Evero fleet. A few of the ex-Avanti class 221s have been transferred to CrossCountry, but most are still in store. This would provide a 60 per cent uplift, an additional 4,500 standard-class seats each day.

Of the 48 trains from Manchester to London each weekday, 15 are nine-car Pendolinos, which have only five and half standard-class carriages. If they were all 11-car Pendolinos, that would add an extra 2,070 seats, all of them standard-class, each day. That would take a little longer, since the extra carriages would have to be manufactured, but is still deliverable in the relatively short term. The three carriages dedicated to first class in both lengths of train could also be reduced.

Further capacity increases could be achieved with relatively modest interventions such as platform extensions, as are already planned at several conventional stations under the HS2 scheme. This may also need power upgrades.

Quirks of the fare system also promote crowding, with cliff-edge differences in fares meaning that some trains at the supposedly "peak" times leave with plenty of spare seats, while the first trains after off-peak tickets start are overcrowded.

HS2 Light will devastate many towns' rail service to London and Birmingham

The North's most serious economic challenges are not in Manchester, Liverpool, Birmingham and other core cities, but in secondary cities and towns such as Stoke, Stockport and Blackpool.

But both the full HS2 Phase 2 scheme, and the mayors' proposed "light" alternative, would make London services to and from these places

183.Checked on Realtime Trains as of May 2025.

and many others *worse* – slower, less frequent, or both. They are on the current main lines, or are served by direct trains off them, but will not be on the HS2 Phase 2 or HS2 Light line.

Lobbying on high-speed rail is dominated by political leaders from the biggest cities – Birmingham, Liverpool and above all Manchester - and by bodies such as the Northern Powerhouse Partnership which, though nominally pan-Northern, are broadly dominated by Manchester. Even a leader such as Andy Burnham, who represents a wider area than his core city, is in effect campaigning for some parts of his area to have worse rail links to London.

Based on HS2's "central case indicative train service specification" (for the full scheme including Phase 2)[184] and a possible planned post-HS2 West Coast Main Line service (post-Phase 2)[185] the main victims are:

Stockport, part of Burnham's Greater Manchester, which would lose at least two of its three existing WCML trains per hour to London, and one of its two trains per hour to Birmingham, without HS2 replacement. HS2 Phase 2 and Phase 2 Light would not serve Stockport.

Wilmslow, which would lose its existing hourly WCML train to London without replacement. HS2 Phase 2 and Phase 2 Light would not serve Wilmslow.

Stoke-on-Trent, which would see its existing fast service to London halved in frequency, from two to one train per hour, and probably travelling via Stafford, taking longer. The fast service to Birmingham and Manchester would also be halved.

Macclesfield, which would see its Birmingham service halved and its existing 1tph London service probably travelling via Stafford, taking longer.

Stoke and Macclesfield are promised an HS2 service, to London only, but even if a service is provided, it is unlikely to be as frequent as the service they lose (or viable long-term) since it will be a stand-alone service for those relatively smaller places rather than, as now, part of a wider service to the major traffic centre of Manchester.

Oxenholme and *Penrith*, which would lose their existing fast WCML services to London without HS2 replacement. HS2 trains would run non-stop through these stations to maintain journey times to Carlisle and Scotland; since they do not tilt, they would be slower than the existing trains on this stretch of line. There would be a slow WCML service to London some hours via Birmingham. An HS2 service to Birmingham would be provided.

Blackpool, which would lose its direct trains to London without HS2 replacement.

184. https://assets.publishing.service.gov.uk/media/5f5f62ffd3bf7f723e21c07c/high-speed-two-phase-two-economic-case-document.pdf - page 43

185. https://assets.publishing.service.gov.uk/media/5a80a60540f0b62302694b83/annex-demand-and-capacity-pressures.pdf - page 76

Wigan, also in Greater Manchester, and *Warrington*, which currently have one direct WCML train to London each hour via the Trent Valley and one most hours via Birmingham, would lose the direct WCML Trent Valley train and possibly the one via Birmingham too. There would be an HS2 replacement, which would be about 10 minutes faster than now, but in the northern direction it would end at Preston or Lancaster, not Glasgow as now, reducing the number of direct trains from these stations to Cumbria and Scotland.

Stafford, Lichfield, Tamworth and Nuneaton are also likely to see their fast trains reduced and/or slowed down.

Chester, Flint, Prestatyn, Rhyl, Colwyn Bay, Llandudno Junction, Bangor, and Holyhead are likely to lose some, and may lose all, their direct trains to London.

Crewe's direct trains to London would be 13 minutes faster with HS2 Light than with only HS2 Phase 1, but probably less frequent (with the likely reduction and possible total loss of the Holyhead to London service, which runs via Crewe). There would be two HS2 trains per hour replacing the direct WCML services via the Trent Valley; there would also be a 1 train per hour WCML service via Birmingham, as now. Crewe would lose all its current fast trains to Manchester and Scotland. Most HS2 trains (other than those to Liverpool) would run in a tunnel underneath the town.

Freight

The mayors' report claims that "more than 40% of all goods moved in the UK" use the WCML[186] (in fact 40% of all goods moved in the UK *by rail*, ie about 3.5% of all goods moved in the UK, use some part of the WCML, often hundreds of miles away from the part that supposedly would be relieved by HS2 Light.) It also claims that "growth in daily freight trains is expected to reach 74% by 2043/4."[187] This turns out to be a prediction for rail freight across the entire country,[188] and omits to mention that rail freight has in fact fallen by more than a third over the last twenty years, from 115m to 72.5m tonnes.[189] In other words, the network was coping perfectly well twenty years ago with freight levels that were 50 per cent higher than now.

But won't the cuts to HS2 fill up the WCML?

Under current plans, HS2 trains will still run from London to Manchester and Liverpool, using the Phase 1 line between London and Handsacre, near Lichfield, then joining the WCML for the rest of their journey, saving about 25 minutes on the current journey time. (The Greater Manchester mayor, Andy Burnham, claimed the trains would "trundle" along the

186. https://static1.squarespace.com/static/6639e259219ec5292dcad78f/t/66e1aac8b9a95d4a042577d5/1726065375571/Opportunity+through+Connectivity+-Main+Report+FINAL+1.pdf

187. ibid

188. https://www.networkrail.co.uk/wp-content/uploads/2020/08/Rail-freight-forecasts-Scenarios-for-2033-34-and-2043-44.pdf

189. https://www.networkrail.co.uk/wp-content/uploads/2020/08/Rail-freight-forecasts-Scenarios-for-2033-34-and-2043-44.pdf and https://dataportal.orr.gov.uk/media/q1il1ksz/freight-rail-usage-and-performance-oct-dec-2024.pdf

WCML, though in fact they will travel on it at up to 110mph.)[190]

Significant media coverage was given last year to a report by the National Audit Office claiming that, in this scenario, "between Manchester and Birmingham there could be a 17% reduction in capacity" from now, meaning that DfT might have to "incentivis[e] people to travel at different times or to not travel by rail."[191]

The 17 per cent reduction is actually a claim by an interested party, HS2 Ltd, which appears to be based on two notions also claimed in the mayors' report: that every HS2 train joining the existing WCML north of Handsacre would have to replace a conventional WCML train on that stretch; and that each HS2 train would have fewer seats than the existing conventional WCML trains.

The second of these notions is false. The existing conventional Pendolino trains have between 469 and 607 seats. The other type of fast train used by Avanti West Coast, the Evero, has between 299 and 598 seats. HS2 says its trains would have 1100 seats, based on a 400-metre train (two 200-metre trains coupled together.) The mayors' report claims that running 400m trains will only be possible on the dedicated high-speed track between London and Birmingham, and that "beyond Birmingham to the North West, the WCML infrastructure is only able to accommodate 200m trains," with 550 seats.[192]

This is not true: HS2 always planned to run 400m trains on the WCML to the North West (Crewe, Preston and Carlisle) and to Scotland – both with the full scheme open, and in its initial plans for the first stage, with only Phase 1 open and HS2 trains joining the WCML at Handsacre.[193] 400m trains could also run via the WCML to Manchester Piccadilly if the new platforms planned there under the HS2 scheme were still built – obviously a far more realistic proposition than building an entirely new 80-mile line. (And indeed, under current plans the platforms *will* still be built, since the last 15 miles or so of the line into Manchester is supposed to remain for Northern Powerhouse Rail.)

There are grounds for doubting HS2's claims that you can get as many as 550 seats in a 200-metre HS2 train: the actual number may be around 470, which means 940 on a 400-metre train. But 940 seats is still 55 per cent more than the capacity of even the longest existing Pendolino trains.

Nor is it certain that every HS2 train on the WCML would require the removal of a conventional fast train. As mentioned, the full HS2 scheme was planned to open in stages over more than 10 years. The initial plan for the stage when only Phase 1 was open was that there would have been 10 fast trains from London per hour using the classic WCML tracks north of Handsacre, four or five more per hour than now.

Seven would be HS2 - three to Manchester, two to Liverpool, one to Preston and one to Glasgow – and three would be classic fast trains (more in the peaks) – one to North Wales, one to Crewe via Stoke, one to Manchester and Scotland.[194] Under this plan, assuming 400m HS2 trains, seating capacity from London to Manchester would roughly double from what it is now. (This plan was later changed – with HS2 trains north

190. https://www.greatermanchester-ca.gov.uk/news/place-first-a-unifying-path-for-a-united-kingdom/

191. https://www.nao.org.uk/wp-content/uploads/2024/07/hs2-update-following-cancellation-of-phase-2.pdf

192. https://static1.squarespace.com/static/6639e259219ec5292d-cad78f/t/66e1aac8b9a-95d4a042577d5/1726065375571/Opportunity+through+Connectivity+-Main+Report+FINAL+1.pdf

193. https://assets.publishing.service.gov.uk/media/5fc51d7b8fa8f54755392863/full-business-case-hs2-phase-one.pdf - page 133

194. https://assets.publishing.service.gov.uk/media/5a80a60540f0b62302694b83/annex-demand-and-capacity-pressures.pdf - page 73 and para 6.25, p105

of Birmingham not starting until Phase 2a to Crewe was complete, and joining the WCML in the Crewe area. We recommend below that it be changed back.)

Some in the high-speed rail lobby now appear to be focusing on a line only as far as Crewe, presumably in the hope that the missing part can be filled in later.[195] The northwestern metro mayors' main high-speed focus now appears to be their proposed Liverpool-Manchester railway.

Certain to fail

Only last month the Government's own National Infrastructure and Service Transformation Agency – its official monitor of major infrastructure projects – gave Northern Powerhouse Rail a rating of "red,"[196] meaning that "successful delivery of the project appears to be unachievable…there are major issues with project definition, schedule, budget, quality and/or benefits delivery, which at this stage do not appear to be manageable or resolvable."[197]

The latest accounting officer assessment, in January 2025, gives NPR a benefit-cost ratio (BCR) of only 0.4 – that is, 40p of benefits for every £1 of taxpayers' money invested, much worse even than HS2 and far below the normal level at which schemes are funded. It said DfT would, however, continue to work towards a strategic outline business case, and take into account wider benefits than the traditional BCR formula allows, while also investigating "lower cost options" and learning "the lessons of other projects notably HS2."[198] This BCR was also not based on the mayors' latest proposals, which would be much more expensive to deliver than the DfT's version of NPR.

Since then, of course, the public finances have only got tighter; HS2 has only got worse; and new strategic demands, above all for higher defence spending, have only got bigger. So continuing to press for very expensive high-speed rail schemes carries the serious risk that nothing will happen. A reset is needed.

Luckily, there are a series of schemes which are not only cheaper and easier to achieve, but which will in most cases deliver better outcomes for passengers.

195. https://www.rail-leaders.com/industry-news/high-speed-rail-group-calls-for-new-affordable-and-realistic-hs2-plan/
196. https://assets.publishing.service.gov.uk/media/6895fbcb9c63e0ee87656a2b/nista_annual_report_data_2425.xlsx
197. https://www.gov.uk/government/publications/nista-annual-report-2024-2025/nista-annual-report-2024-25#annex-the-annual-report-and-transparency-data-on-major-projects
198. https://www.gov.uk/government/publications/government-major-projects-portfolio-accounting-officer-assessments/northern-powerhouse-rail-accounting-officer-assessment-summary-may-2024

Chapter 4
Alternatives that would work – and could actually happen

What the "Northern Arc" really says

The Northern Arc concept borrowed by the metro mayors for their Liverpool-Manchester high speed line was coined by Ian Wray, honorary professor at Liverpool University's Heseltine Institute and former chief planner at the Northwest Development Agency. It echoes the so-called "East-West Arc" between Oxford, Milton Keynes and Cambridge – spoken about by Rachel Reeves in her growth speech earlier this year – but argues, almost certainly correctly, that a development arc across Liverpool, north Cheshire and Manchester is "a more realistic proposition" capable of delivering at a "much larger scale," because this corridor has many more people, cheaper housing, easier development politics, more brownfield land and far more economic assets (a wider industrial base, a major airport and a major port, as well as leading universities.)[199]

"Projects looking for a plan"

Wray, Jim Steer (one of the earliest high-speed rail lobbyists) and David Thrower, a former transport planner, argue that - though better rail is essential to the success of the Northern Arc - the focus on high-speed rail is misplaced. They say that though there is a case for a new line to relieve the WCML south of Crewe, "the economic case for Crewe-Manchester HS2 is flaky" and "combining what remains with NPR doesn't help much either," with "projects looking for a plan… conceived, designed and delivered in isolation and in the absence of a wider framework… likely to fail to achieve their objectives."[200]

They say the "main problem" of the North's rail network is the congested city centres which most trains must enter or cross, above all central Manchester - rather than on the links between cities. They note, for instance, that there are already "*three* existing lines linking Liverpool and Manchester" (their italics).[201] (The third is the line via Wigan, which is severed by a gap of a few metres at Headbolt Lane.)

As they put it: "Investment in city centres (the 'nodes'), rather than along network links between the nodes, is clearly what's most needed." Yet this is "a total lacuna in rail forward planning," not properly addressed in any of the current high-speed or conventional projects, including the

199. https://www.liverpool.ac.uk/heseltine-institute/blog/thecaseforthenorthernarc/#_ftn3
200. https://uk2070.org.uk/wp-content/uploads/2025/02/Why-Rail-Projects-need-a-Regional-Plan-FINAL-Edited-250211.pdf
201. ibid

in-progress Transpennine Route Upgrade. "Without investment in central Manchester the weakness of the existing arrangements will remain [under any of the new projects] - including poor reliability and an inability to provide important direct connections."

They noted that "overcoming the limitations on the existing three lines between Liverpool and Manchester will cost much less than a new line, and deliver benefits more speedily… than [by] building new lines." It would also "integrate the labour markets in the old industrial towns between Liverpool and Manchester" better than a new high-speed railway.[202]

An Elizabeth Line for the North

HS2 supporters sometimes argue "yes, but the Elizabeth line has been a success."[203] This perhaps unconsciously concedes that that, quite different, kind of project is what's actually needed.

Instead of a new high-speed line between Manchester and Liverpool, we propose a northern equivalent of what South-East England already has: a high-capacity east-west route across central Manchester to deal with the region's worst rail bottleneck. As in London, the new element would be a tunnel under Manchester city centre to join up the existing conventional lines either side. Those lines would be electrified and upgraded for higher speed and capacity, as some already have been or are being.

The core section of the tunnel could be two or four-track, with a four-platform underground through station at Piccadilly. It would have three portals at the western end, joining with the lines to Liverpool via Warrington, to Liverpool via Newton-le-Willows (the Chat Moss line) and to Bolton, Wigan and Preston. At the eastern end it would have branches joining with the lines to Rochdale, Halifax and Bradford, to Guide Bridge, Huddersfield and Leeds, to New Mills and Sheffield and possibly to Manchester Airport and to Stockport.

Rather than just one line between Liverpool and Leeds, serving seven stations, this would create a dense, frequent network serving more than 80 stations including, on the western side of Manchester, Bolton, Preston, Blackpool, Wigan and St Helens Junction as well as Warrington and Liverpool; on the eastern side Sheffield, Rochdale, Halifax and Huddersfield as well as Bradford and Leeds.

The central section of the Elizabeth line, between Paddington and Whitechapel, which has a two-track tunnel and stations, currently runs up to 24 trains per hour in each direction[204] and has the capacity for 30 trains per hour.[205] Twenty-four trains each way is more than *both* the existing surface lines across central Manchester - the Castlefield corridor via Piccadilly's platforms 13 and 14 and the route through Victoria and Salford Central – added together currently carry. It is three times more trains than the mayors' proposal for Northern Powerhouse Rail (8tph in each direction, of which four would go to Liverpool.)[206]

In Manchester, a two-track tunnel with a four-platform station would be able to handle more than 30tph, substantially more than doubling current cross-city rail capacity (both surface routes would remain in use.)

202. ibid

203. https://www.standard.co.uk/news/transport/elizabeth-line-crossrail-hs2-tfl-mark-harper-sadiq-khan-b1043108.html

204. https://tfl.gov.uk/info-for/media/press-releases/2023/may/full-peak-elizabeth-line-timetable-introduced-as-railway-celebrates-remarkable-success-in-its-first-year

205. https://content.tfl.gov.uk/elizabeth-line-post-opening-evaluation-interim-findings.pdf

206. https://greatermanchester-ca.gov.uk/media/sttdzqkv/connecting-the-north-west-to-drive-national-prosperity-may-2025-accessible-2025-05-13.pdf - page 14

A four-track tunnel with a four-platform station could handle at least 60tph, almost treble the existing capacity.

The journey time from Manchester to Liverpool would be faster than under NPR, 30 minutes or less, and by splitting Manchester-Liverpool trains between the Chat Moss and Warrington routes the same or better frequency could be achieved, even without any capacity upgrade works at all on those lines (electrification would be needed on the Warrington line). However, we recommend that both routes are upgraded for faster speeds and greater capacity. On the upgraded Transpennine line, the journey time from Manchester to Leeds would be 41 minutes, with six fast trains per hour.[207]

If the existing airport line wasn't connected to the new tunnel, trains could be routed by the surface lines, using the surface capacity released by the tunnel, reaching the central terminal area from Leeds in about 55 minutes and from Liverpool in about 45 minutes, about the same time as NPR and with less hassle (the train journey to NPR's "Manchester Airport" station would be quicker, but as stated that station would not be at the airport and passengers would need to transfer by shuttle bus.)

How much could it cost?

In 2022 prices, the core section of London's Elizabeth Line cost £15.8bn - the other £3bn was for works on the existing Network Rail conventional lines either side.[208] The core comprised 26.2 miles of new tunnel (two 13.1-mile bores),[209] eight new (two-platform) underground stations[210] and two new surface stations.[211] The tunnelling, track, systems and shafts cost £7.8bn (about £300m per tunnel mile). The stations cost £4.1bn (an average of about £410m each, maybe £100m each for the two surface ones and £490m each for the underground ones). The rest of the £15.8bn was £3.9bn of "indirect" and other costs including management, land and property - a ratio of around 3:1 direct to indirect costs. [212]

Including the branches and four-tracking on the core section, a Manchester version might end up needing about 15 tunnel miles, around £4.5 billion, with one four-platform underground station at Piccadilly. Such a station was estimated by Transport for Greater Manchester (TfGM) in 2023 at £1.6- £1.7bn.[213] (That was when it would also be used for HS2, which would require much longer platforms than an Elizabeth Line-style station). If the ratio of direct to indirect costs was the same as London's, the total cost could be around £8.2bn. If only two-tracking was used on the core section, though still with a four-platform station, the cost could fall to around £6bn. It might be less, because the Elizabeth Line had very large numbers of interfaces with existing London Underground lines. That might be balanced out by more interfaces with the surface system in Manchester than in London, however.

These figures are consistent with others produced by TfGM and the Government. Before HS2 was cancelled, TfGM costed a much longer, two-track tunnel under Manchester (of about 25 tunnel miles) and a four-platform through underground station at Piccadilly at between £8.7 and

207. https://thetrupgrade.co.uk/benefits/
208. https://content.tfl.gov.uk/construction-impacts-report-acc.pdf - pp 21-2
209. =42km, see https://learninglegacy.crossrail.co.uk/wp-content/uploads/2017/04/Machine-driven-tunnels-on-the-Elizabeth-line-London.pdf
210. At Paddington, Bond Street, Tottenham Court Road, Farringdon, Liverpool Street, Whitechapel, Canary Wharf and Woolwich.
211. At Custom House and Abbey Wood, next to the existing Network Rail station.
212. https://content.tfl.gov.uk/construction-impacts-report-acc.pdf - pp 21-2
213. https://committees.parliament.uk/publications/40361/documents/200295/default/ - page 168 of PDF

£9.6 billion.[214] Based on HS2 Ltd costings, a four-platform underground station and two-track tunnel (with only two portals) was £6.8bn.[215]

On the surface lines either side, electrification and capacity upgrades have already been delivered on the Chat Moss and Bolton/ Wigan lines, and are now in delivery on the Transpennine main line to Leeds via Huddersfield. But £2-4bn more would be needed to further improve capacity, and electrify the remaining diesel routes to Sheffield, to Leeds via Bradford and to Liverpool via Warrington.[216] In early 2024, the Government produced a "desktop initial view" that a Y-shaped tunnel under Manchester connecting the Yorkshire routes to both Liverpool routes, upgrades on the routes, and electrification of the Warrington route would cost a total of £8bn.[217]

In total, therefore, including both tunnel and upgrades, it seems feasible that a scheme offering far more than Northern Powerhouse Rail, to far more places, more quickly could be delivered for around £9-13bn in 2025 prices - between a half and a third less than the claimed cost of NPR's Liverpool to Manchester section alone, and possibly as little as a quarter of this section's likely true cost.

Electrification and upgrading of most lines

Northern politicians are right to say they want the kind of rail network which south-east England has. But that is emphatically not high-speed: it is a dense, frequent, almost all-electrified web of low and medium-speed conventional lines.

There is only one high-speed line in southern England, the domestic service on HS1 to Kent, open since 2009, which forms a tiny part of the network - and, incidentally, helps disprove extravagant claims about the benefits of high-speed rail. The most recent evaluation, quietly slipped out on the DfT website only last month, concluded: "While it is possible that increased levels of population and attraction for businesses in Kent will lead to greater economic activity (employment and GVA) over time, this has not yet been seen in the macro trends… Where population growth has taken place, it is largely associated with increased commuting to London, with the result that local economic indicators, such as GVA per capita, have not increased significantly compared with peer locations which have not benefitted from HS1."

The impact on train performance was "small, reducing delays by an average of only 18 seconds per journey." The overall benefit-cost ratio of the scheme, including wider economic impacts, was 0.7 (in other words, for every £1 of public money invested, you will get back, over 60 years, 70 pence.) This constituted "poor value for money." (The evaluation also ended at covid, since when there has been a sharp fall in rail commuting.)[218]

We therefore propose that the North should have what the South East actually benefits from, an upgraded and electrified network which improves service for the vast majority of the North's people and communities rather than merely for a relative handful along a single high-speed rail line. Electrification is key, making trains faster, cleaner, quieter, more reliable,

214. https://committees.parliament.uk/publications/40361/documents/200295/default/ - page 168 of PDF; see also map on p159 of PDF.

215. GM Partners' evidence to HS2 Phase 2 bill select committee, updated to current prices.

216. The unelectrified sections of these routes comprise around 120 route miles and 260 track miles (=415 single track km, stk). Assuming the costs of the most expensive and dysfunctional recent electrification project, the GWR electrification (£2.75m/stk in 2025 prices), electrification would cost £1.1bn; the rest is for capacity improvements. Most recent electrifications have cost less than GWR.

217. Internal calculations, advice to No10.

218. https://assets.publishing.service.gov.uk/media/682f37fbb33f68eaba9539cd/hs1-second-evaluation.pdf

more eco-friendly and more attractive to passengers: most places it has happened have seen what has been termed the "sparks effect," a surge in usage.

About 25 per cent of the Northern network, including the East and West Coast main lines, the lines between Manchester and Liverpool, Manchester, Bolton, Preston and Blackpool, most of the Merseyside local network, and some suburban lines around Manchester and Leeds, is already electric. Some further electrification projects, including the main Transpennine line from Manchester to Huddersfield and Leeds and part of the Midland Main Line, are already underway.

We propose increasing the proportion of the North's rail network which is electrified to 80 per cent, by electrifying around 800 route miles (about 2000 single track miles/ 3200 single track km) as follows. Routes marked * are partly electrified already. Other routes, such as the Manchester-Leeds-York main line, are not included in this list because they are already being electrified under existing budgets.

Leeds- Wakefield- Rotherham- Sheffield*
Leeds- Barnsley- Sheffield
Leeds- Knottingley
Leeds- Harrogate- York
Leeds- Hull*
York- Scarborough
Sheffield- Doncaster- Hull and Cleethorpes
Sheffield- Manchester (Hope Valley) including Marple area local lines
Sheffield- London*
Huddersfield- Halifax
Huddersfield- Wakefield
Manchester- Rochdale- Halifax – Bradford- Leeds
Manchester- Wigan- Southport
Manchester- Warrington – Liverpool/ Chester
Manchester- Knutsford- Chester
Crewe-Chester (and on to Holyhead)
Kirkham- Blackpool South
Manchester- Bolton- Blackburn- Clitheroe*
Preston- Blackburn- Burnley- Colne
Rose Grove (Burnley) - Todmorden
Carnforth- Barrow
Lancaster- Morecambe
Oxenholme - Windermere
Ellesmere Port- Helsby
Northallerton and Darlington- Middlesbrough- Saltburn
Darlington- Bishop Auckland
Middlesbrough- Hartlepool- Sunderland- Newcastle*

The most expensive and dysfunctional recent major electrification

project, the Great Western Main Line, cost £2.2 million per single track kilometre in 2019 prices[219] (£2.8m at 2025 prices). Even if these schemes cost that, the total would come to just under £9 billion, little more than half the price of just the Liverpool-Manchester section of Northern Powerhouse Rail.

In practice, most recent electrifications have cost less, often far less. A programme at this scale would create a consistent pipeline over more than a decade, allowing supply chain efficiencies that are not possible with the current stop-start approach.

Capacity upgrades, including extra tracks and new signalling, would also be installed. As in southern England, each major town and city would be linked every 15-30 minutes and smaller places every 30-60 minutes. Unlike NPR or HS2, this would improve service to the vast majority of the North's people and communities.

Longer trains – a relatively quick intermediate step

Much overcrowding on the North's railways is caused by the practice of running extremely short trains. Of the 43 trains departing Leeds in the weekday peak hour between 5 and 6pm, around half, 21 trains, have only two or three carriages.[220] Around a third of the express trains between Leeds and Manchester each day have only three carriages.[221] The rest only have five or six carriages. Almost no train anywhere in the North, apart from those to London and a small minority of cross-country trains to Birmingham and Bristol, has more than six carriages.

The 5-6pm hour at London's busiest terminal, Waterloo, also sees 43 train departures, but of these 37 have eight carriages or more and only one has less than four carriages.[222] Indeed, very few trains of any kind in south-east England are shorter than four carriages. All London's Elizabeth line trains have nine carriages.

Significant improvements in capacity can be achieved quite quickly by running longer trains, using hundreds of carriages of modern rolling stock that are now in storage doing nothing, and by delaying the retirement of some existing trains. Around 500 carriages, fully compatible with current standards and some as little as seven years old, are currently in storage or due to become surplus shortly with no other uses planned for them.[223]

As mentioned before, more than 80 per cent of trains on the Manchester-Birmingham-Bristol services run by CrossCountry currently have only three or four standard-class carriages. Last year, around 18 of the same class of train – the class 221 Super Voyager, with a total of at least 72 carriages - were made surplus from Avanti West Coast by the new Evero fleet. A handful have been transferred to CrossCountry but most are currently in store and could be quickly transferred to lengthen these services. Five High Speed Trains taken out of service in 2023 (totalling 35 carriages) could also be reintroduced.

Some 24 class 769 trains (totalling 96 carriages) are currently in store and could be added to the Northern fleet. Eight of this class, which can run on both diesel and electric power, are already operating on Northern.

219. https://www.nsar.co.uk/wp-content/uploads/2019/03/RIAECC.pdf - page 22
220. Checked on Realtime Trains as of September 2025 for departures between 1700-1759.
221. 47 of the 151 trains on a typical weekday, also from Realtime Trains.
222. Realtime Trains, op cit
223. Position as of May 2025.

A further 27 class 222 diesel trains (currently used on the Midland Main Line, totalling around 150 carriages) and 37 class 350/2 electric trains (148 carriages) are, or are shortly to become, surplus as they are replaced by newer rolling stock. These trains are still only around 20 years old and have at least a decade of useful life in them. Around 25 older class 158 Super Sprinter trains, being replaced by new trains in Wales, could also be retained and used to strengthen services operated by the same class in Northern England.

In many cases introducing these trains could be quick, since others of the same class already are being, or recently have been, used in the North and drivers and train crews have already been trained on them. Some further training would be needed. Some station platform lengthenings might also be necessary, though almost all stations in the North can accommodate at least four-car trains and most can handle longer ones. In a few cases, power supply upgrades might be needed to run longer electric trains. The bureaucracy of train leasing arrangements is also a small obstacle, but can be overcome.

A genuinely integrated and understandable network

Another slower, but still relatively quick, change – possible within a few years - would be integrated timetables, ticketing and information: making the system more useful and usable without running a single extra bus or train. Britain still has a very dense bus service but large numbers of potentially public transportable journeys aren't taken because people don't understand the bus networks and don't realise what is possible with a combination of modes. The Swiss and German national rail websites allow you to plan a multi-modal journey to any location served by any form of public transport, not just, as in Britain, a national rail station.

Swiss timetables are simple: the same pattern repeats at precisely the same minutes past every hour, seven days a week, rather than endless variations on different days or at different times of day like Britain. (Extra trains run to deal with peak hour or other spikes in demand, but the core service is always exactly the same.) Trains are arranged to connect with each other, and with buses. Connecting buses and branch line trains arrive at hub railway stations from every direction in the 5-10 minutes before the mainline train arrives, and depart again to every direction in the 5-10 minutes after it leaves. The same ticket covers the whole journey.

Integrated contactless ticketing can be achieved widely and quickly without needing to instal a costly infrastructure of card readers at every ticket barrier. You just have a mobile app which uses your phone's GPS function to virtually tap you on and off – the Swiss use something called Fairtiq but other products are available. By massively reducing the friction of travel, contactless increases public transport use. And it deals with a major deterrent – passenger confusion about fares. It always charges you the lowest fare for the journey you're taking and ensures you can never be caught with the 'wrong' ticket.

All this will be easier to arrange when every train is under the control

of Great British Railways and more bus services are franchised, but it can start now. Alas, for the moment Britain is moving even further away from simple pricing with strong DfT support for only having airline-style dynamic pricing on long-distance rail: that can be a useful way of selling spare capacity, but it's imperative to keep simple, reasonably-priced walk-on tickets too.

It would be possible to go further, developing a universal travel app which also shows journey times by car (including predicted traffic delays) and by bike, with safe cycling routes, and comparative CO2/ pollution emissions. The idea is that it would become the natural choice for motorists to plan journeys, but would nudge them towards public transport or active travel by showing them that such a journey would be quicker, cheaper or lower-emission than by car, and perhaps by offering them special deals on public transport for the journey they've just looked up.

A decent universal app would also capture for the public purse the large commissions which the railways are currently paying to Trainline, simply because its site is better than the poor existing NR and TOC sites. It would allow us to close more station ticket offices and have fewer ticket machines. In this way it might earn back its cost in a few years.

Hundreds of small and medium-sized schemes

As this suggests, rail is only part of any solution. The new government has continued the last one's city region transport settlements with a claimed injection of £15 billion (across the country, not just the North). The money needs to be real, but is welcome. Small and medium-sized schemes such as new stations and tramways can do far more, in more places, more quickly, for more people than a few slow and costly iconic projects.

Local authorities will need to be pushed to do effective, but difficult transport projects in the same way the government does clearly recognise it has to push them to allow new housing. Indeed, housing and transport are indivisible – the government won't be able to build the homes it wants without meaningful transport infrastructure alongside.

Britain has fewer tram networks than other countries because they have been far more expensive to build. We should copy the French approach, installing multiple new tram systems by using the same or similar kit of parts everywhere, rather than, as now, everything being done bespoke.

HS2 Phase 1 +

If the West Coast Main Line (WCML) does come to need capacity relief, instead of building a whole new line between the West Midlands and Manchester, we recommend four, much cheaper, interventions which we call "HS2 Phase 1+." They also deal with some of the key weaknesses that would not have been fixed, or might actually have been made worse, by the full-fat HS2 scheme. From south to north they are:

Improve the connection between HS2 and the WCML at Handsacre

Handsacre, north of Lichfield, will be a new junction where HS2 Phase 1 joins the four-track WCML, used by HS2 trains from London to Manchester, Liverpool and Scotland. Under the initial plans for the full scheme, reflected in the act of parliament giving authority to Phase 1, the HS2 connection was onto the inner fast lines located as the central pair of tracks. Such a connection was described by HS2 as the cheapest and least disruptive to the WCML in 2013 . More importantly, it avoided disrupting freight and local passenger trains using the outer WCML slow lines north of Handsacre.

In 2019, HS2 amended the design of Handsacre Junction to connect its railway onto the outer slow lines via Additional Provision 2 to the Phase 2a hybrid Bill. HS2 justified this on the grounds of reducing cost and the highly optimistic assumption that Phase 2a would open just one year after Phase One, after which it would only be used by the Stafford, Stoke, Macclesfield train, with all other HS2 services joining the WCML in the Crewe area instead.

The change was made to save money, by not building a complex, high-capacity and efficient junction at Handsacre which would only (at that stage) have been heavily used for a few years. Handsacre junction was simplified and scaled back to link only to the two slow lines of the WCML, in the belief that it would only ever have been used by, at most, one HS2 train per hour – a service to Stafford and Stoke.

Contrary to HS2's 2019 claims, the change to the Handsacre Junction design would not have reduced its cost. Instead, it would have reduced capacity for other rail traffic and appears to be adopted by HS2 to provide an extra insurance policy to justify the construction of Phase 2. Furthermore, now that Handsacre is to be the permanent junction used by all HS2 trains, it is essential that DfT reverts to the previous plan, where the HS2 lines are linked onto the WCML fast lines. This is likely to be cost neutral and should be accompanied by the removal of the HS2 junction at Fradley to save significant unnecessary costs.

Works to relieve the Colwich and Shugborough pinchpoints

Between Handsacre and Stafford, there are two WCML pinchpoints. These are the junction at Colwich, where the line to Manchester via Stoke branches off the mainline; and a 5km (3 mile) long section of the mainline just north of Colwich, where the line passes through the Shugborough tunnel. This part of the WCML is the only two or three-track section of the WCML between Handsacre and Crewe (the first two miles are currently two-track, the third mile is three-track.) We propose four-tracking this stretch, including the provision of a new grade-separated junction at Colwich and a second (approximately 750m long) tunnel at Shugborough.

A grade-separated junction at Colwich would also allow Stoke, Macclesfield Stockport and Manchester to be served by HS2 trains from both London and Birmingham without passing through Stafford. This will reduce the London to Manchester HS2 journey time by 7 minutes and the Birmingham to Manchester journey time by 30 minutes compared to the existing Cross-Country service of 90 minutes.

New platforms at Crewe to relieve the Crewe North pinchpoint

Another major WCML pinchpoint is the Crewe North junction located immediately north of Crewe station, which Network Rail declared to be at capacity in 2016. With HS2 unrealistically proposing to replace four Avanti Pendolinos per hour with seven HS2 services, once Phase One opens, it is likely that some regional and local services between Crewe and Manchester will need to be removed from the timetable. This situation would only have been resolved once the full-fat Phase 2b HS2 plans for a new tunnel under Crewe were completed in the 2040s.

This scenario and the reduction in hourly inter-city stopping services proposed by HS2 would have been disastrous for Crewe and explains why Crewe's hopes of an HS2-related bonanza would always have been dashed.

However, there is a way to resolve these problems and provide Crewe with improved rail services and an upgraded station. This involves better utilising the Independent lines located to the west of Crewe Station, which pass under Crewe North Junction in a tunnel before rejoining the WCML lines to both Manchester and Liverpool/ Scotland). The Independent lines are electrified and used by freight services but have spare capacity for passenger train usage. We therefore suggest building an island platform between the Manchester lines, together with new station access facilities as part of a revamp of Crewe Station.

Such a proposal would free-up capacity for more HS2 trains to call at Crewe Station and provide Crewe with the five HS2 stopping trains per hour, which would include the reinstatement of inter-city services to Manchester, all WCML stations further north, including Glasgow and Edinburgh, which would otherwise would have been withdrawn by HS2.

Upgrading HS2 Rolling Stock

Standard HS2 trains will only be provided with 8-carriages with a predicted maximum capacity of 470 seats, representing a 23% capacity reduction compared to the 11-carriage Pendolinos that operate extensively on the WCML. To address this issue, it is proposed the HS2 classic compatible fleet is upgraded to 10-carriages with an estimated capacity of 578 seats.

The current Pendolino trains used on the WCML can also tilt, allowing them to maintain slightly higher speeds (a maximum of 125mph) on curves than other trains. Regrettably HS2 trains will not be able to tilt – supposedly because tilting would reduce their maximum speed on the dedicated high-speed sections of track. This means they will be restricted

to a maximum of 110mph on the existing conventional WCML track, resulting in reduced journey times than Pendolinos north of Handsacre Junction.

Since HS2 'classic compatible' trains, which will use the West Coast Mainline and its branches to serve all destinations north of Birmingham, will travel approximately six times the track distance than the HS2 'captive' trains serving Birmingham Curzon Street on HS2 tracks only, not providing the HS2 classic compatible fleet with tilting technology is another false economy. We therefore recommend that the trains due to run onto the conventional network be built for tilting so they can maintain the speeds of the current Pendolino fleet when they join the WCML.

£10.00
ISBN: 978-1-917201-71-1

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