

Written evidence submitted by Mr M G Crowhurst (IRP0108)

I am not sure if responses are still sought, but having obtained and digested a copy of the IRP (along with coverage in the periodicals), a number of comments and suggestions come to mind, so I have taken the liberty of composing my thoughts. I don't know if this constitutes evidence or merely opinion, but I offer it for your consideration, and I hope you find it useful.

By background I am (was) a public transport planner, onetime MRTPI and MCIT, now long retired, having worked mainly in UK, local government. After retiring I served some years as chairman of Railfuture. However I now speak for no-one but myself, as a passenger. I assume the term stakeholder includes passengers?

Surprisingly perhaps, I find myself broadly in agreement with the basic policy outlined in the report (and widely trailed). If losing HS2(E) is the price of COVID, so be it. But I think we will need rather more than the minimal improvements proposed to the classic network, albeit not all immediately of course. In my comments I have tried to point towards some possibilities.

We need a mix of new high speed, upgrades and local improvements "Neu-bau" and "Aus-bau" the Germans call it. I think y suggestions would provide such a balanced package. If HS2(E) is dropped we need a more ambitious package of replacements. Obviously not all of it could happen soon, but above all, we must get on with electrification – much more, much faster, while there is still time. Decarbonising is not achieved by legislation alone, it needs action!

DfT Integrated Rail Plan for the Midlands and North, 2021 (incorporating HS2 and NPR)

A response

1. Context

I have always considered myself a "critical supporter" of HS2. On the face of it, the "Y" shaped network seemed sensible at least as a starting point. And whilst I accept the need to design for speed, I felt the proposed 400kph was higher than necessary, as the basic justification had to be capacity, albeit, city centre approaches apart, this was only an issue south of Rugby/Nuneaton, between Crewe and Preston, and possibly Colwich to Stafford.

My doubts began to emerge however, on two grounds. First, the environmental case depended on winning custom from road and air. But

forecasts emerged suggesting that the bulk of traffic would be either newly generated travel or diverted from classic rail. Although an element of the latter is to be expected, neither supports the environmental case, and whilst new generation is fine for the business case it is definitely bad for the environmental balance sheet on all counts.

Second, is the Y-shaped network such a good thing after all? First, it creams off the prime traffics (Birmingham, Manchester and Leeds) which will tend to undermine the viability of the remaining classic services on which the likes of Coventry, Leicester, Stoke, will continue to rely. Indeed these are likely to get either slower all-stops or less frequent services if any paths are to be freed on the classic routes for new regional services or freight. (In contrast, some quite small places, Chesterfield, Macclesfield, Wigan etc, will apparently be on the prime network.)

Furthermore, the eastern arm of the Y in particular seems to replicate the mistakes made by the Victorian rail builders in the 1800s, of sending everybody via Birmingham. The error of this policy soon became clear, as each separate northern company sought to develop its own mainline to London within a few decades. So would a separate high speed route to the East Midlands and North East not be better from the outset?

So my doubts about the eastern arm began to form, compounded by the Fiasco of the rerouting through South Yorkshire. The original Meadowhall route seemed to me far better, and the impact on the new housing at Conisbrough was a PR disaster of the worst order. (The safeguarding needs to be lifted at least from this section as soon as possible.) In short I had felt for some time that this part of the route simply did not make sense and probably would not be built in anything like the form proposed if at all.

All these doubts came together when the IRP was published, and in particular the system maps (map 3, page 58 in particular) appeared. Let's just consider some specific cases, such as: a) London – Nottingham / Sheffield via Birmingham (HS2) versus Midland ML (upgraded), or b) London – Leeds / York via Crewe and Manchester (rev) versus East Coast Main Line (upgraded), or even c) Birmingham – Derby / Sheffield etc via HS2 and EMP versus classic route throughout, and d) Liverpool – Manchester / Leeds etc via the airport (HS2) versus classic direct route(s). Leaving aside the reversal in Manchester (of which more anon), in each of these cases the comparison is between a longer but faster route using HS2 and the slower but more direct classic route.

I leave the calculations to the experts, but it seems to me that even if the end to end times are good or better by HS2, this is achieved by going further but faster.

Now given that fuel consumption increases as the square of velocity if I recall rightly, on no conceivable basis is this good news for fuel consumption, carbon and the environment, however good a selling point the swish new railway may be.

Notwithstanding the above, I do concur broadly with your basic new policy that the western side goes ahead but the eastern branch is replaced, for the time being at least, by some radical upgrades of the existing lines, some of which (such as electrification) many of us felt needed to go ahead in any case. My issues are mainly with how much alternative work (and in some cases exactly what) is needed instead. As someone said, if this package had been proposed at the outset without any mention of an eastern arm of HS2, everybody would have been happy (except of course Bradford). Nevertheless I also think the proposed network in the north west is now a mess, quite apart from the Manchester reversal fiasco. But I will take each corridor in turn, examine the options and made some suggestions, working east to west.

Before doing that, it is worth noting that several important coastal markets are not included in the diagram (figure 7, page 79) notably Hull and South Humberside, as well as Teesside (Middlesbrough, Stockton etc) and indeed Sunderland. Whilst there are some similar omissions from figure 6 (page 63) these tend to be smaller (Barrow, Blackpool) or inland (Halton, Wigan) although perhaps North Wales deserves a mention! This perhaps accounts for the undue focus on the prime markets, especially in the East.

2. East Coast Main Line

The ECML is already electrified but will need some more upgrades if it is to continue to serve as the main route to Yorkshire and the North East. Both Greengauge 21 and Virgin have made proposals in the past, which you are no doubt aware of. There are essentially two strategic options – either progressively develop a high speed corridor based on the ECML and confine improvements on the Midland to limited upgrades and electrification, or retain a long term option to build HS2 east or near equivalent, extended south in the M1 corridor to London and confine East Coast upgrades to on-line improvements. Either strategy should enable all services to the eastern half of

the country to remain in Kings Cross / St Pancras rather than be split that complex and Euston.

With completion of the Allington curve, Hitchin flyover and Werrington underpass, the scope for further upgrade separation south of Doncaster is now largely exhausted, but quadrupling is by no means complete. Relatively little remains to do south of Stoke tunnel (Grantham), but from there to Doncaster it is still mostly only two track and there is of course the notorious Newark crossing, and two tunnels, to deal with. But if the Victorian engineers could build a decent two-track main line over Stilton Fen, sure their modern successors could double the tracks with the benefit of almost two centuries of engineering advance, without breaking the bank? The Newark crossing is not so simple. The only option now with the A46 viaduct has been built, is to raise the Nottingham line up in parallel with the road viaduct, but whether that is physically possible given all the constraints including Castle station, I am not certain.

An alternative strategy, which keeps open the option of gradually developing a proto-high speed line by building new sections of fast track through the flat lands east of the A1/ECML corridor, bypassing the problem sections one at a time. Such a route could run almost dead straight from Corby Glen to north of Bawtry on the approaches to Doncaster, passing close enough in two places to the present line to permit temporary or permanent connections to be provided. Conveniently these two points are both a few miles each side of Newark, which suggests that the first priority should be a Newark bypass line of some 16 miles – with provision built in for easy extension both ways. In time this line could be extended either south to bypass Grantham (a slightly shorter distance) or north to Bawtry (rather further) bypassing most of the remaining two-track section and Retford Station. Services for Leeds, York and most of the points north, which now serve at most one of these stations would then use the fast line while the three stations would have more services calling at two or three and terminating at Doncaster or off-line points such as Hull, Lincoln etc. A secondary benefit might be avoiding the need to electrify the “joint line” via Lincoln for freight.

In due course the fast line could be further extended south, by passing Peterborough and Huntingdon on the west (again with connectors midway), but the remaining intractable problem is of course the Welwyn viaduct and tunnels. I fear that any opportunity to solve this one on line that may have

existed has long been lost. South of Hitchin there is of course heavy commuter and local traffic, and even the Hertford loop offers little relief except for emergencies. Ultimately a new line bypassing the whole area is the only solution. This would start south of Huntingdon, continuing the previous section, but running to the east, between Baldock and Royston, approaching London via the Lea Valley and finally tunnelling from the Tottenham area to the now widened Kings Cross approaches. But that is for the distant future.

North of Doncaster there are already various upgrades and grade separation on the plans, all of which would be needed whether HS2(E) is built or not (probably more so if it was). Given that very little does not call at York now (the second most important intermediate point behind Newcastle) and that looks likely to continue, would be a bypass line west of the city be justified? I think not. The station is on a tight curve, and there are avoiding lines on an even tighter curve. A bypass to Doncaster – to the east, is just possible, there are already several freight bypass lines. But between York and Newcastle there is much scope: widening the northern approach to York, widening and grade separation at Northallerton, extra platforms at Darlington, straightening (eliminating two motorway bridges) at Aycliffe, a possible Durham bypass, reviving the Leamside and Stillington lines, electrifying from Northallerton and Ferryhill to Middlesbrough (at least), revitalising (electrifying?) the Durham Coast line, the Low Fell curve, and so on. The balance of uses between the main line, the Leamside and Coast routes for high speed, local passenger, and freight, would remain to be determined – as south of Doncaster.

Finally from Newcastle north to Edinburgh there is a crying need for the regular service calling at all five or six principal stations, being introduced tentatively by TransPennine Express soon. This line, once proposed for closure (Beeching, Serpell) or de-electrifying (Chris Garnett), is two track almost all the way, and the Morpeth curve obviously slows all traffic severely. Bypassing this has to be a possibility. Meantime restoring the “Blythe and Tyne” would provide a fallback in emergencies, especially if electrified. Over the border, opening a station at Reston with another to come at East Linton, and Haddington also being discussed, prompts the thought that a Haddington loop (Longniddry to East Linton) might be more useful than a stub-end branch.

3. Midland main line

Electrification of the full core route to Nottingham and Sheffield via Derby is the absolute bare minimum for this corridor, whether it ultimately becomes

the prime high speed route to the north east or not. Indeed I cannot remember if ever being officially cancelled, only “paused” at least until HS2(E) came on the scene, when everybody feared the worst, leading many to oppose HS2 altogether, preferring to see the money spent (to wider benefit) on the existing network when ideally it would have been needed to feed into HS2 anyway. So it is good to see it officially “unpaused” at last. All we need now is to see it happen. Hopefully the lessons of the Gt Western have been learnt and cost escalation will be controlled or this will be the last.

Market Harborough was never the logical handover point anyway, any more than Royston, Bishops Stortford, Rock Ferry were in their time. Few services call there, whereas everything calls at Leicester, where changeover can happen at rest rather than on the move. So start by getting wires to Leicester. But that is only the start. Bi-modes have saved many through services while we prevaricate about electrification, but a bi-mode in diesel mode is still a diesel train, and usually a rather inefficient one. They can always be redeployed elsewhere or converted.

Apart from the core line, several related lines should be wired as soon as possible to fully exploit the benefits, including:

- Nottingham / Toton to Chesterfield and Sheffield via Barrow Hill and Beighton (the Erewash Valley and Barrow Hill lines) giving an alternative fast route into Sheffield ahead of HS2.
- Sheffield and Beighton to Doncaster, S. Kirkby (Moorthorpe), and Church Fenton (for York), (including Rotherham loop) giving electrified outlets from Sheffield to Doncaster, Leeds and York. These two groups together would enable fore freight to operate further on electric traction. Freight setor has also suggested that Corby – Syston (Via Oakham) be wired, but I suspect this will need to await the Birmingham – Leicester – Peterborough – Felixstowe corridor, when a Corby spur (and a Corby – Stamford link via the old Welland Valley line) could be included. After that, one more section would make sense: Derby – Birmingham, which would enable all Cross Country services north of Birmingham to operate on electric power throughout on both the north west and north east routes, only using diesel south of Birmingham (for now).

Apart from electrification, other infrastructure work is necessary, starting with the Market Harborough bottleneck. This is the only remaining two-track section south of Trent Junction. An opportunity to put the station platforms on

loops was missed when Market Harborough station was rebuilt on a better site recently, but passing loops anywhere on this section would help if full four tracking is not possible. Further north, the Erewash Valley line was four track and this should be reinstated. A roll over may be needed between Pye Bridge and Clay Cross. It is not clear what function a local station at Toton would serve, once the focus of HS2 shifts to EMP (as many people suggested). It seems unlikely many trains would serve both.

At the north end, I'm not sure I see any point in detached sections of high speed line to serve Leeds. This bit was always contentious. If the old Midland route via Cudworth was still available or could be recovered, perhaps some of that (or something close to it) could be used, but that would bypass Wakefield, which does not seem sensible. Why not quadruple the line between South Kirkby and Hare Park (as proposed in a recent study of Doncaster area), grade separate at South Kirkby by taking the southbound Leeds-Sheffield up onto the York lines north of the bridge, and reinstate the second fast line through Wakefield Westgate (removed to position an overhead gantry). As for Leeds itself, all services, high speed or not now need to be in the main station, not an annex at right angles. As for terminal capacity, I always take the view that when things get tight, it is local services that need to go onto new cross-city links and mainline services stay in the "big station". In Leeds the problem is too many local services coming from the west and terminating. More on this anon when I come to discuss Leeds Metro.

Finally on the Midland, I remain sceptical of the suggested Derby route. Indeed I think you hedge your bets by only suggesting HS2 might serve Birmingham-Derby/Sheffield as well as London / Birmingham – Nottingham / Sheffield. You also dismiss an alternative option, which you call the Burton option, involving using the current cross country route all the way from an interchange somewhere near Wilnecote. I have never heard that option proposed, and you are right to dismiss it (p 80). What I have seen suggested, and which seemed to me an excellent idea, was the short curve ease of Lichfield, enabling Derby to be served via Burton and part of the Lichfield – Burton line, currently little used. This would use more high speed line and less classic line, and pass through neither Lichfield nor Tamworth (has someone confused these two?) It does pass through (and serves) Burton (good), and yes there is quite a bit of local and freight traffic about, but Burton Station is on a four track section, which could maybe be extended through to Derby. Well worth considering for

Derby and possibly Sheffield, provided that Derby – Birmingham is first electrified. It would certainly give some useful flexibility.

4. Midlands Rail Hub

MY only concern with the proposal to drop the Bordesley north curve would be that the implied loss of an existing cross Birmingham regional through service, the Cardiff – Nottingham service. This currently operates through New Street. The plan had been to transfer both halves to the less congested Moor Street, Where the through service would be retained, albeit by reversal in the terminal platforms. If the Nottingham side is to transfer to the high speed link and thus to Curzon Street, through working becomes impossible and passengers would have to transfer between the adjacent termini. Presumably however a residual Derby service would be needed, which would remain in New Street unless the suggested Lichfield link is built, in which case this too could use Curzon Street, but some locals would still be needed on the Tamworth line. All very unclear. I suggest the north curve remains in the plans until these details are clarified.

5 TransPennine, a.k.a. Northern Powerhouse Rail

As with HS2(E), I find myself in broad agreement with the strategy of upgrading (with sections of new build) the existing North TransPennine corridor via Huddersfield. I can understand (and sympathise with the disappointment in Bradford, which always seems to lose out, but in all honesty this looked as inevitable as cutting HS2(E). Frankly, Bradford's setting and topography is against them, with the easiest access (the valley) running north, at right angles to the orientation needed by any TransPennine route. This would have to have been almost entirely in tunnel, including the station and therefore hugely expensive.

Just as Sheffield did not help their case by rejecting Meadowhall, so Bradford over many decades have done themselves no favours by failing to address the gap between Forster Square and Exchange/Interchange stations. Originally only one block apart, the gap could have been closed on a common site in between, even if on different levels, instead of which the gap has been allowed to triple in recent years to three blocks, as both termini were moved back to allow for commercial developments. As a result there is no one location that would now give a full interchange with a tunnelled NPR route. The only surface site, at St James' Market, seems even further from the centre than Curzon Street is in Birmingham.

Any station away from the present route may imply a loss of services at Huddersfield. My feeling is that we should stay with Huddersfield as the main calling point between Leeds and Manchester, and concentrate on additional tracks both sides of this stop, some on old formations where available, some on new routes. Thus all trains would call Huddersfield (as now), some also Dewsbury, others Stalybridge, some all three. (Two trains per hour each, eight in all seems sufficient, but could rise to three in peaks if we still have peaks.)

On the Huddersfield route, it should be possible to bypass the section from Medlock Vale, Manchester (depending on which Manchester station) to Diggle, then use the disused tunnel bores to Marsden, old trackbed through the Colne Valley to Huddersfield and on to Bradley from where a new route could bypass Dewsbury, close to the A62 and junction 27 of the M62, using old trackbed where available, and possibly the old viaduct approach to Leeds.

An alternative might be a Parkway station south of Bradford. The centre of the block formed by the four towns, Bradford, Dewsbury, Halifax and Huddersfield lies in the Spenn Valley near Cleckheaton and not far from junction 26 of the M62. It is conceivable that the line bypassing Dewsbury could veer that far north, then follow the A58 into Leeds. This might involve less tunnelling than a line through central Bradford, but it would remain a Parkway station, even if supported by a restored rail service on the Spenn Valley line. East of Leeds a fast line from Neville Hill to Micklefield, routed south of Temple Newsam Park, completes a four track route through most of the Manchester – Leeds – York corridor, with all four tracks wired.

Electrification Leeds to Bradford Interchange could be combined with Leeds – York / Selby to create a cross-Leeds local electric route (although if an hourly all stops Halifax – Hall is retained, bi-modes would be required until the wires are extended). This suggests that Leeds – York/Selby should be higher priority for electrification than Leeds – Huddersfield, as it also offers benefits for East Coast (an alternative approach to Leeds and forward to Bradford / Skipton without reversal) and for Cross Country (a fully electric north east cross country route.)

6. Leeds Metro

Countless transit schemes have already been proposed and rejected for Leeds. By all means try again, but first we should perhaps look again at the local rail network. The problem in Leeds is that almost all the local services approach

the centre from a single direction – west, and terminate, which takes up platform capacity, causes overcrowding and fails to distribute passengers to the rest of the central area. What is needed is to rearrange the network so that most local services cross the centre. This needs to some new links from the Neville Hill depot area east of the centre, first to the Woodlesford line (for Pontefract and Wakefield Kirkgate services), and second to the Wakefield main line near Lingwell Gate north of Outwood station (passing west of Rothwell, partly in tunnel). This line would free the present main line for high speed services from either the Midland or East Coast routes. Both new lines would use the same corridor through the Lower Aire Valley as the East Leeds bypass line suggest above.

Together with a restored service on at least the first part of the old Wetherby line from Crossgates to a park-and-ride on the A64 York Road near Scholes, this would roughly balance the number of services each side of the centre at 12 to 16 per hour. To better distribute passengers in the centre, a new station, Leeds East, would be built at Quarry Hill, better placed for the markets, central bus station and st James' hospital. The present terminal platforms 0-6 would then become available (after conversion) for terminating inter-city or high speed trains. Unfortunately Leeds (like Manchester) has a "throat", between the present station and Quarry Hill, which is only two track. Given that other services including TransPennine (NPR), Cross Country and some East Coast or high speed services also need to use this section (totalling perhaps a further 12 per hour) clearly the need to widen the throat may become unavoidable, although at least there are no intermediate stations to add to the problems as in Manchester.

When the HS2 proposals for Leeds were first released, the local Chamber of Commerce came up with a proposal to accommodate high speed services in the present station, thus avoiding the need for a separate high speed station, and permitting through running. It involved some clever use of the several approach lines west of City station to achieve grade separation, which struck me as a solution in search of a problem. Hence my proposal involving restructuring the local network, better to achieve a similar aim. Finally on Leeds, I must point out that Leeds is not the largest city without a transit system. Bristol is far bigger, provide you include the who urban area, a fair bit of which is outside the local authority boundary. The convers is the case in Leeds, where the local authority boundary (since 1974) is far wider than the

urban area. In any event, let's hope that this time we do not just start but complete the work on Leeds Metro.

7. High speed lines in the North West

Trying to integrate HS2 and NPR on a minimum of new construction, produces some frankly crazy routings. First, the main HS2 north/south route. Fine except the end point should be at Euxton, south of Preston (where the WCML becomes four track into Preston), not at Golborne (Bamfurlong), south of Wigan. A route east of Wigan is not hard to find. North of Preston, when required a parallel fast track east of the M6 as far as Carlisle is quite feasible. A real Golborne curve onto the Chat Moss line into Liverpool would have given a better alternative to the classic route via Runcorn than the roundabout route via Warrington, Widnes and High Legh junction. Another case of going the long way round to achieve nothing but burning more fuel! (Had the main line gone via Stoke than Crewe, it could have given more useful links, but I accept that there were arguments both ways on that.) Surely the simple answer for Liverpool and so on is to complete quadrupling of the Crewe – Weaver junction section, than split/join sets for Runcorn, LSP and Lime Street; and for Warrington BQ, Wigan NW and Preston (possibly Blackpool) in Crewe, using the classic routes north of Crewe. If Liverpool Lim Street is short of space, surely the idea of moving the City Line local services into an expanded Central station via old tunnels from edge Hill was the obvious answer. They might even run through to/from some of the Wirral lines. Why was it ruled out?

The HS2 line into Manchester like that into Iormingham, has some curves which would surely be unacceptable on the main line, but the terminus is in the right place, next to Piccadilly. The only alternative would have been an approach from the west and a new interchange station at Ordsall Lane in Salford, but of course that would not have served the Airport. So far so good. But then NPR comes on the scene and confusion really sets in! First let's tackle the reversal fiasco head on. This really is an own goal as many commentators have pointed out. I won't add to your discomfort except to say it hardly adds credibility to the document. Don't the authors ever read the rail periodicals, never mind visit the cities mentioned (p 65), most of which are going to great lengths to eliminate such reversals? Indeed Manchester itself has already sought to do so on the classic network. The saga of TransPennine routings through Manchester has had as many setbacks as Leeds transit schemes. Traditionally east-west services ran via Victoria, except those to/from Sheffield

which used the “throat”, also heavily used by local services. When many of the latter transferred to Metrolink, the opportunity was taken to reroute Leeds – Liverpool services via the throat, to improve interchange at Piccadilly (despite the business centre moving towards Victoria). This soon proved to be a mistake, as it created more problems at the Piccadilly approach, with some services crossing all approach lines and others reversing in the terminal platforms en route to/from the Airport, by then rail connected. To resolve this, Leeds-Liverpool services returned to Victoria, and Leeds-Airports services were rerouted right round the city centre over the new Ordsall curve and back through the throat, thereby adding to congestion in the latter due to the absence of planned extra tracks and new through platforms. Passengers now need to catch a west facing train to travel east to Leeds. No wonder they are confused! But conflicts outside Piccadilly are reduced (Sheffield – Liverpool and Sheffield – Airport services remained in Piccadilly throughout the latest suggestion is that the latter may be cut back from the airport, to remove more reversals.) So surely the last thing we need is to recreate a reversal problem in the new/extended station just to send Leeds – Liverpool NPR services on another roundabout route via the airport?

If Leeds – Manchester (rev) – Airport – Liverpool is not a serious option, what is? It is difficult to do better than the Chat Moss route. It was almost the first railway, dead straight and level, not electrified, part quadrupled at the Liverpool end and relatively few stations especially near the Manchester end. All it needs is the quadrupling completed, and my comments about Stilton Fen on the ECML apply equally here. Surely these obstacles should not defeat modern engineering. It follows that NPR east-west services to Liverpool would remain in Victoria, airport services would still need to do the tour round via the Ordsall curve and Piccadilly, (which means the extra tracks and platforms in the throat might still be needed), and the residue would terminate in Piccadilly, via Guide Bridge. Anything else requires either reversal in Piccadilly or cutting out the city centre from airport services. With eight or more trains per hour there are enough to go round. The other Liverpool – Manchester route via Warrington Central is mostly two track, not yet electrified, and has more local stations so more local services, plus much freight. Sheffield – Liverpool services run this way, calling at Piccadilly not Victoria.

But the Warrington low level route could also have a role. Extending it east to the High Legh junction and to the airport does make some sense, although the High Legh junction risks consuming huge swathes of Cheshire countryside if it

gets any more complicated. I suggest neither south-west, north-west nor north-east curves are required. A fast shuttle between the two cities calling at LSP, Widnes, Warrington BQ low level and Manchester Airport is an attractive option connecting both airports to both city centres. Furthermore it could also have a role in serving Sheffield. The report recognises (near the end) that Manchester – Sheffield is by far the worst served of the three sides of the triangle. (it also, rightly in my view, rejects the “delta” solution, which is essentially a revival of Woodhead with a third leg serving Leeds.)

The best that is proposed for the Hope Valley line is some freight loops and removal of a single track bottlenecks at Dore and Hazel Grove, when the whole South TransPennine route (Liverpool-Warrington-Manchester-Sheffield-Doncaster-Hull/South Humberside) should be on the list for electrification. The remaining gap in the network is between Sheffield and the airport (direct), cutting out another Piccadilly reversal. The missing link is between the airport and the Hope Valley line east of Hazel Grove on the Disley tunnel line. I believe there is a proposal for a new outer Manchester motorway in the same corridor, between Handforth and Heald Green, Bramhall and Poynton (possibly already built?) If a railway could follow the same corridor, then one of the Hope Valley fasts could run direct to the airport then on to Liverpool calling Warrington BQ low level, Widnes and LSP. The second fast would run via Piccadilly and Warrington Central as now, while any third would terminate in Piccadilly.

Finally, back to Manchester to tie up loose ends. Following my principle of putting local services underground and leaving the main lines to longer distance (inter city or high speed) services, it seemed to me that sooner or later some at least of the Metrolink network (te ex rail branches especially) would need to go in tunnels, which could also take some regional routes. I therefore settled on a two-line network, one line replicating the old Picc-Vic scheme but emerging further west near Salford, the other from near Deansgate to a point east of Victoria. The two intersect (conveniently) under Piccadilly Gardens bus station. Some heavy rail services would stay on the route round via Ordsall (eg Airport – Bury), some on-street Metrolink lines could remain on-street in the centre, using capacity freed by the tunnel lines. It seemed a sensible balance (Gothenburg in Sweden also put its rapid transit in central tunnels when patronage grew to an appropriate level.) I submitted this proposal to Manchester Mayor Andy Burnham, which he kindly acknowledged. (I also included a scheme for the Hope Valley that creates a new, better placed

interchange station at Chapel-en-le-Frith by crossing over the Buxton and Hope valley stopping services at this point, with fast services unaffected.)

8. Conclusions

It is gratifying to see several points that were made by many stakeholders have been taken on board, for example the time penalty imposed by connections with feeder tram or other rapid transit at Toton (or Birmingham Interchange) can lead to overall timings exceeding those of classic direct services (page 13). Or that high speed has high carbon and environmental impact (p 51). That smaller places on classic main lines may lose out (p 29). That there are too many avoidable interfaces between HS2(E) and the M1 motorway (p 23). (The same is true of the western leg and the M6.) Or that capacity, not speed per se, must be the primary driver (p 43). And of course the case for East Midlands Parkway rather than Toton to be the key interchange.

However the faith in the “agglomeration effect” (p 22) may prove to be misplaced. Experience suggests that more often new infrastructure leads to centralisation in the dominant or best located centre, which in the north means inevitably Manchester wins, while with HS2 it will London or to some degree Birmingham. Words often seem carefully chosen to avoid commitment, for example to start (not complete?) work on Leeds Metro (p 15), and many benefits might or could be achieved (pp 136-8). On page 20 the 10 (years) in square bracket suggests this figure was subject to confirmation before inclusion! On page 110 (para 3.92) I rather think the cross reference to para 2.28 should read 3.38. All of which suggests that parts of the document were written by different authors and nobody checked it for consistency.