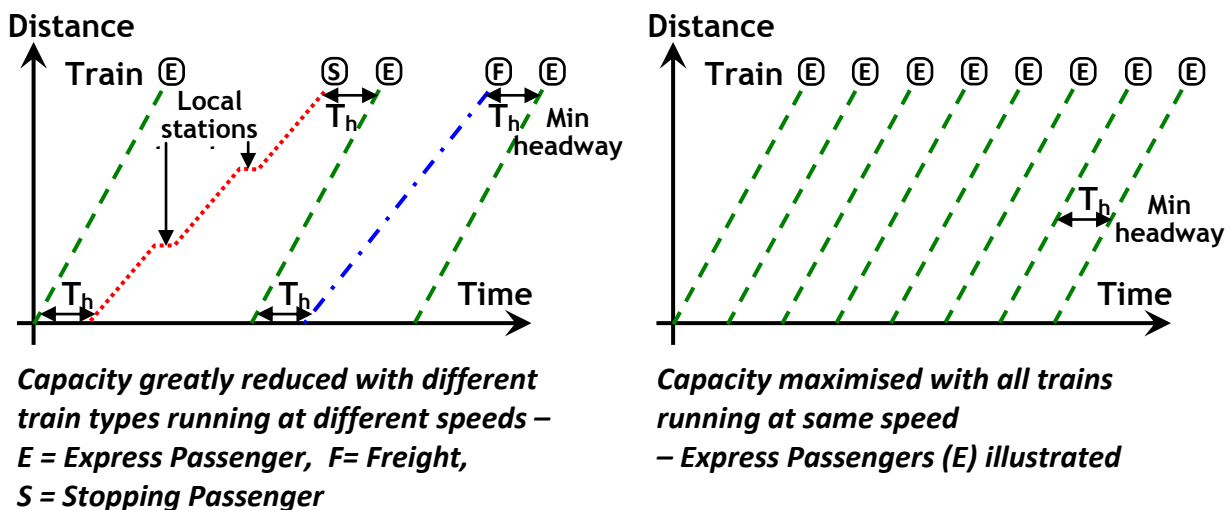


# HS2 : FRAGMENTING THE NATIONAL NETWORK

HS2 Ltd has consistently sought to justify its proposals with the claim that the introduction of HS2 will release capacity on the existing main lines; this released capacity can then be used to improve both freight services and passenger services for communities located along these main lines, and as a result all should benefit from HS2.

The claims for HS2 are not totally without truth. Capacity on the UK rail network is greatly limited by the 'mixed traffic' operation that prevails on most lines. As shown in Figure 1, the different types of traffic i.e. express passenger services, local 'stopping' services and freight tend to conflict with each other when running on a single pair of tracks. Much greater capacity could be achieved if all trains ran at the same speed and stopping pattern, and it is commonly accepted that the greatest capacity increase can be achieved if 2 new tracks are provided for express (or high speed) passenger traffic, while the existing 2 tracks are dedicated to local passenger services and freight.



**Figure 1 : Reduced Capacity on 'Mixed Traffic' Railways**

This at least is the theory on which HS2 Ltd's designers have based their proposals. Regrettably, however, they have failed utterly to recognise the reality of existing UK intercity railway operations. Intercity services do not simply link the primary cities (such as London, Birmingham, Manchester and Leeds), on which the HS2 proposals are based; they also serve the intermediate 'second-tier' cities such as Milton Keynes, Coventry, Stoke, Leicester, Derby, and Doncaster.

All these cities will be bypassed by HS2, and all will see their existing intercity services reduced as the premium traffic between the primary cities transfers to HS2. This is made absolutely clear in HS2 Ltd's own reports – see Figure 2. And whilst local stopping services might increase, this will only reinforce the communities' status as dormitory towns; with their intercity connectivity reduced, all seem likely to suffer major economic blight.

UK INTERCITY RAIL NETWORK : ASSESSMENT OF IMPACT FROM HS2, AS SET OUT IN TABLE 23 OF HS2 REGIONAL ECONOMIC IMPACTS (aka KPMG REPORT)

By Colin Elliff BSc CEng MICE, Civil Engineering Principal, High Speed UK

PROPOSED NEW HS2 SERVICES		ASSUMED SERVICES ON EXISTING NETWORK	
HS2 Captive Services	HS2 Classic-Compatible Services	Classic Network	
3tph Euston-Manchester, calling at Old Oak Common and 1tph at Birmingham Interchange.  <div>A</div>	2tph Euston-Liverpool calling at Old Oak Common and Runcorn, one of which splits/joins a Euston-Birmingham service at Birmingham Interchange, also calling at Stafford. Second also calls at Crewe.  <div>B</div>	LM WCML services south of Birmingham - net 59 more per day, inc. 26 more Wolverhampton-Euston stopping services (via Birmingham, Coventry, Milton Keynes and other stations), between Milton Keynes/Rugby and Euston and within West Midlands (New Street to Coventry and New Street to Birmingham International).  <div>C</div>	<div>Notes C &amp; F relate to changes to WCML intercity services as premium Liverpool/Manchester/Birmingham to London traffic transfers to HS2, and services to bypassed intermediate stations along the route regress to 'regional' status as frequency of fast services is reduced, and other services are slowed with more stops added. 'Capacity' is increased by reducing the speed differentials between fast intercity trains and slower stopping services/freight. Reductions in intercity services to London are as follows: Stockport: 3tph reduced to 1tph Stoke: 2tph reduced to 1tph Wolverhampton: 1 tph service slowed Coventry 3tph reduced to 1tph</div>
3tph Euston-Birmingham, calling at Old Oak Common and 2tph at Birmingham Interchange.  <div>D</div>	2tph Euston-Edinburgh/Glasgow, calling at Old Oak Common and splitting/joining at Carstairs. 1tph calls additionally at Birmingham Interchange and Preston.  <div>E</div>	ICWC services/LM north of Birmingham - net 87 fewer per day, including merging ICWC Liverpool and Wolverhampton services by diverting Liverpool trains via West Midlands and adding station calls, 19 new Crewe-Euston trains and reduction from 50 to 11 ICWC Manchester-Euston services, excl. three peak services and eight extended to/from Edinburgh. (NB overall Manchester-Euston frequency increased.)  <div>F</div>	
3tph Euston-Leeds, calling at Old Oak Common and two at Toton, two at Sheffield and one at Birmingham Interchange.  <div>G</div>	1tph provides second hourly service to/from Preston, also calling at Old Oak Common, Crewe, Warrington and Wigan.  <div>H</div>	MML/Thameslink via MML - net 4 more services per day, including new 16-train Bedford-St Pancras service and a reduction in longer distance MML services between Sheffield, Derby and Nottingham from 60 to 48.  <div>I</div>	
2tph Birmingham-Manchester.  <div>J</div>	2tph to/from Newcastle, also calling at Old Oak Common and either York or Darlington.  <div>K</div>	ICEC, Great Northern and TransPennine - net 11 fewer services per day, new 16-train Peterborough-King's Cross service, from 1 to 16 Lincoln-King's Cross trains, reduction from 45 to 16 ICEC Leeds-London services (NB overall Leeds-Euston frequency increased) and 10 fewer ICEC Edinburgh-London services (note ICWC services via Manchester described above).  <div>L</div>	<div>Note I details a 20% reduction (from 5tph to 4tph) in intercity services along MML. Biggest issue here is blight to Leicester and to central Derby &amp; Nottingham as regional development focuses on new hub at Toton.</div> <div>Note L details a reduction in ECML intercity services. Leeds to London (2tph) and Edinburgh/Newcastle to London (2tph) will both be cut to 1tph. Bypassed intermediate cities eg Doncaster &amp; Wakefield will see intercity service levels halved, and probably made slower.</div> <div>Note O details Birmingham-Derby-Sheffield XCountry services diverted via Toton to connect with HS2. This will add ~30 minutes to journey times from South-West to Yorkshire &amp; North-East. XCountry services will generally terminate at Newcastle rather than Edinburgh, greatly reducing Yorkshire/Scotland connectivity</div>
2tph Birmingham-Leeds, calling at Toton and Sheffield.  <div>M</div>	1tph providing a second hourly service to/from York, also calling at Old Oak Common and Toton.  <div>N</div>	CrossCountry services to North East and North West - no change in frequency, additional stops at Birmingham International, Coventry, Sheffield HS, Toton, Alfreton, Macclesfield and Congleton, and some services shortened from Edinburgh/Newcastle to Newcastle/York.  <div>O</div>	
1tph Heathrow-Manchester, calling at Birmingham Interchange.  <div>P</div>	1tph Birmingham-Edinburgh or Glasgow (in alternate hours), calling at Wigan, Preston, Carlisle and Lockerbie, plus either Lancaster and Penrith, or Oxenholme.  <div>Q</div>	East Midlands local services - no frequency changes, additional stops at Toton, some services to/from Nottingham extended to/from Leicester.  <div>R</div>	
1tph Heathrow-Leeds, calling at Birmingham Interchange, Toton and Sheffield  <div>S</div>	1tph Birmingham-Newcastle, calling at Toton, Sheffield, York, Darlington and Durham.  <div>T</div>	Northern England local services - 64 new semi-fast local services per day including 32 Leeds-Doncaster trains, 16 Manchester-Crewe services and 16 Manchester-Stoke trains.  <div>U</div>	<div>Note R details distortion of local East Mids services to accommodate new Toton hub</div> <div>Note U details improved local services to Doncaster &amp; Stoke but fails to mention reduction in intercity services to these communities</div> <div>Reduction in ECML &amp; XCountry intercity services detailed in Notes L &amp; O indicate Newcastle to Edinburgh services reduced to circa one third of current levels</div>

CONCLUSION

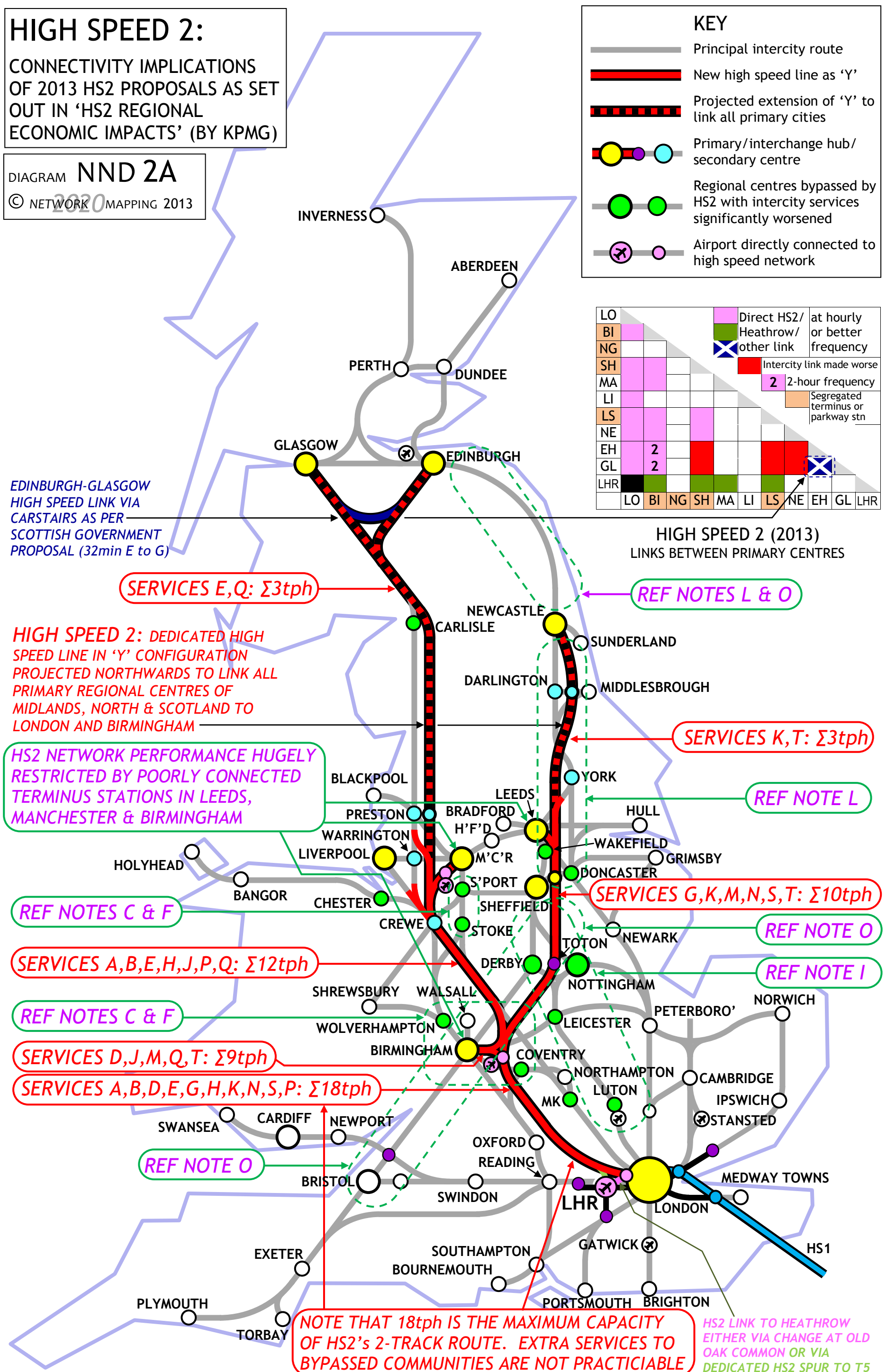
The table above details the proposed new HS2 services and reductions in intercity service levels on the existing classic network which have been considered by KPMG in their assessment of HS2’s regional economic impacts. Noting the general disconnection between HS2 and the existing ‘classic’ network, and the reductions in intercity services to the major intermediate communities that are bypassed by HS2 (as detailed above and on the diagram on the following page), it is clear that HS2 does not achieve significant improvements in national intercity connectivity. On the contrary, it would appear that the intervention of HS2 will have the opposite effect, of damaging national intercity connectivity. It is therefore difficult to understand how a reputable consultant such as KPMG could have inferred the massive benefits to regional economies set out in their 2013 report *HS2 Regional Economic Impacts*. (All these adverse impacts are avoided with the better balanced and fully integrated High Speed UK proposals [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk)).

Table 2 : 2013 Assessment of HS2’s Impact on Existing Intercity Services



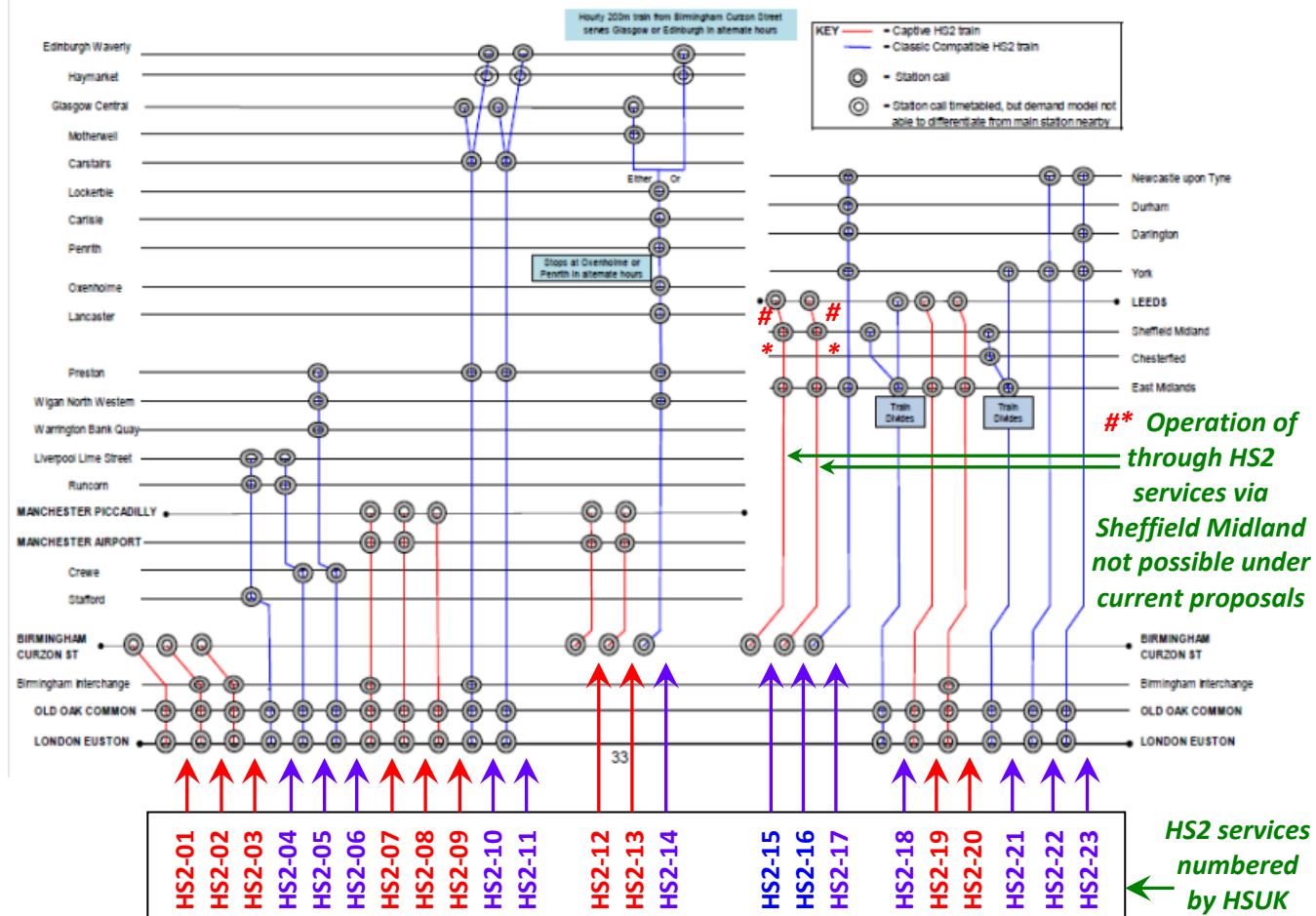
# CONNECTIVITY IMPLICATIONS OF 2013 HS2 PROPOSALS AS SET OUT IN 'HS2 REGIONAL ECONOMIC IMPACTS' (BY KPMG)

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**Figure 3: 2013 Assessment of HS2 Intercity Connectivity correlated to Table 23 of HS2 Regional Economic Impacts**

## Annex B: Modelled train service specification (M18 loop)



**Figure 4 :**

## Current (2016) Proposals for HS2 services with Assessment of Achieved Intercity Connectivity

*(Annex B : Modelled train service specification,  
High Speed Two Phase 2b Strategic Outline Business Case  
HMG, October 2016)*

***Sheffield now served at Midland station, rather than Meadowhall***

## Proposed direct HS2 services to Heathrow now abandoned

[illegible]

Since the publication of *HS2 Regional Economic Impacts* in 2013, HS2 Ltd has published (in 2016) new proposals for its high speed services – see Figure 4. These proposals are even more limited than its 2013 proposals; there are now no proposed direct services to Heathrow (due to the impracticality of the putative HS2 spur) and the switch of Sheffield’s HS2 station from Meadowhall to Sheffield Midland has left the city even more isolated than before from high quality high speed intercity services.

And whilst HS2 Ltd has sought to distance itself from its own predictions of reduced intercity services to communities bypassed by HS2 (and has sought instead to maintain the pretence

- HS2 only 'cherry-picks' the premium intercity flows between primary cities, and that leaves the bypassed second-tier communities only able to support a reduced level of intercity service along the existing main lines.
- Elimination of intercity services rendered uneconomic by the introduction of HS2 also becomes necessary to achieve the goal of enhanced capacity on existing main lines.

[illegible]

Figure 5 shows how the introduction of HS2 will effectively fragment the national rail network. 8 of 17 principal UK centres will be bypassed by HS2, and of the 135 possible intercity links, HS2 will degrade 43 – almost one third of the total. It will only provide 14 improved direct intercity links, and all of these will be focussed upon routes to London and Birmingham that already enjoy high-quality intercity services.

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- **Adherence to existing intercity transport corridors**, in particular that of the M1 – *this allows simple spur connections to existing main lines.*
- **Provision of 4 tracks** in north-south spine – *this gives the necessary extra capacity.*
- **Full integration between high speed line and existing network** – *this allows the benefits of the high speed line's additional capacity and connectivity to extend to all major communities.*

**Figure 6 : Connectivity offered by HSUK between 17 UK Principal Centres**

All this underlines the total failure of HS2 Ltd's technical leadership, who must surely be able to recognise HS2's massive inherent contradictions. Any proposal which leaves a huge swathe of Midlands and Northern cities bypassed and blighted, and which leaves the national rail network fragmented and degraded, cannot possibly be represented as delivering "hugely enhanced... connectivity". It is also clearly incapable of bringing about the massive multi-billion economic benefits that have been promised for HS2.