APPENDIX M1

CONNECTIVITY IMPROVEMENTS
ACHIEVED BY HS2 AND HIGH SPEED UK
FOR:

MANCHESTER

and Greater Manchester conurbation

(extract from HS2 - High Speed to Nowhere)

| Appendix M1: Manchester | | | | | | | |
|-------------------------------------|-------------------------------------------------------|--|--|--|--|--|--|
| Page 286 Introduction & key results | | | | | | | |
| Page 287 | Timeline of comparative journey times from Manchester | | | | | | |
| Page 288 | HS2 routes from Manchester | | | | | | |
| Page 289 | HSUK routes from Manchester | | | | | | |
| Page 290 | Tabulated journey times from Manchester | | | | | | |

Manchester and Greater Manchester conurbation

| Town/City | Manchester |
|-----------------------------------------------------------------------|--------------------|
| City Region | Greater Manchester |
| Population of built-up area** | 2,550,000 |
| Ranking amongst UK cities** | 2 |
| Number of cities directly linked by existing rail network (out of 31) | 24 |

| Referen | |
|------------------|------------------------|
| HSUK Nort | h-West Rail Strategy |
| | spennine Rail Strategy |
| | onal Maps 09 & 10 |
| | chester Network Map |
| All availabi | le on HSUK website |
| | speeduk.co.uk |
| | |
| | |

^{**} https://en.wikipedia.org/wiki/List of urban areas in the United Kingdom

Manchester: Intercity Connectivity with HSUK and HS2

| | Average journey time reduction | Cities directly linked (out of 30) | Journeys made faster (out of 31) | Journeys made worse (out of 31) | Best performer (out of 31 journeys) |
|---------------|--------------------------------------|------------------------------------------|----------------------------------------|---------------------------------------|-------------------------------------------|
| High Speed UK | 42% | 29 | 28 | 0 | 25 |
| HS2 | 13% | 3 | 6 | 3 | 3 |

Greater Manchester is the UK's second-largest conurbation and the largest in the North of England. In consequence Manchester Piccadilly station is a natural focus for the national intercity network, and it enjoys direct links to most other principal UK cities. However, the lack of any direct 'heavy rail' link between Manchester's two principal stations – Victoria to the north, Piccadilly to the south – and lack of capacity on east-west routes greatly compromises regional and national connectivity via Manchester. Of particular concern is the lack of capacity for transpennine freight traffic (for instance container trains from the proposed 'Atlantic Gateway' Liverpool superport) to cross Manchester. These east-west cross-Manchester issues are not addressed by the ongoing 'Northern Hub' scheme.

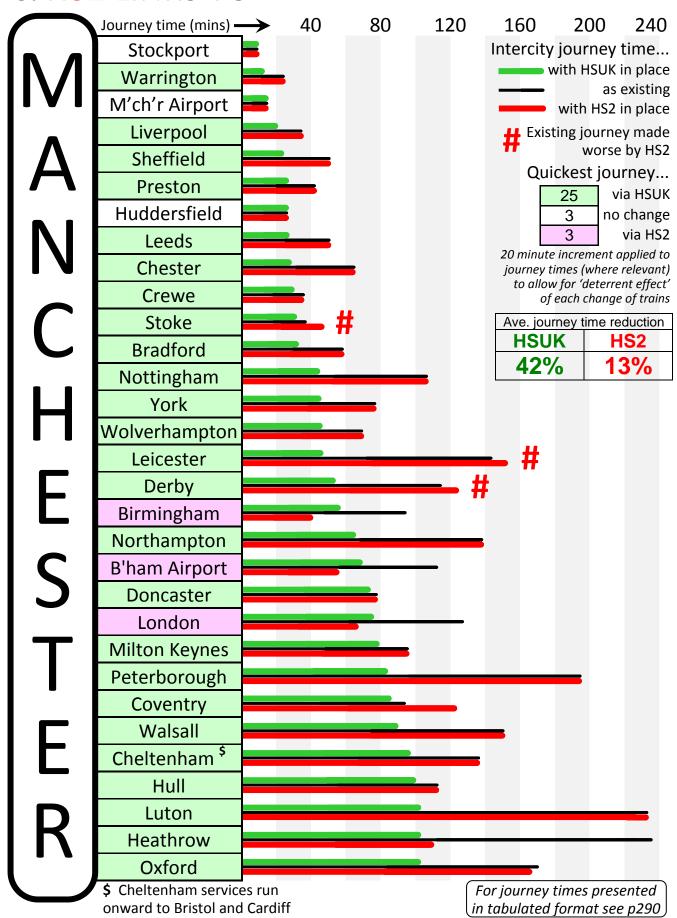
HS2 will serve Manchester at a new terminus station to be built alongside the existing Manchester Piccadilly. However, HS2 will do very little to improve Manchester's overall connectivity. Only Birmingham, Birmingham Airport and London Euston will be directly linked, and the general disconnection of these stations will prevent further spread of HS2's connectivity benefits; links to all other UK cities will remain largely dependent upon the existing intercity network. Whilst HS3/Northern Powerhouse Rail should bring further benefits for transpennine links to Leeds and other Yorkshire cities, this also establishes a requirement for onward links towards Liverpool and to Manchester Airport with which the proposed HS2 terminus at Manchester Piccadilly is completely incompatible.

HSUK greatly improves Manchester's intercity connectivity not by building the fastest route to London, but by building the new transpennine route necessary to link Manchester (and Liverpool) to its north-south spine and therefore to most principal UK cities. Its cross-Manchester route with new tunnelled platforms at Manchester Piccadilly enables all Northern Powerhouse requirements for connectivity between Northern cities to be met in full.

HIGH SPEED UK

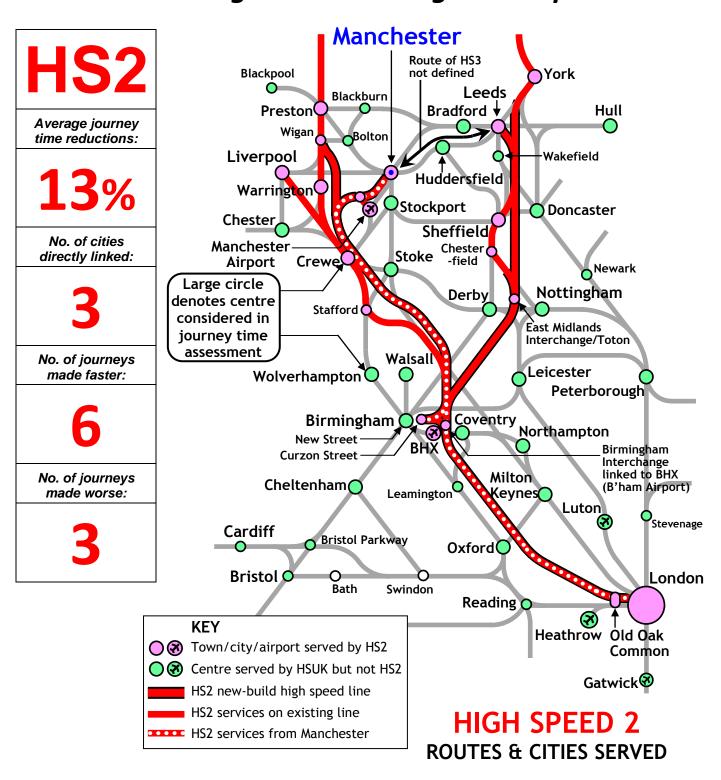
& HS2 LINKS TO

MANCHESTER



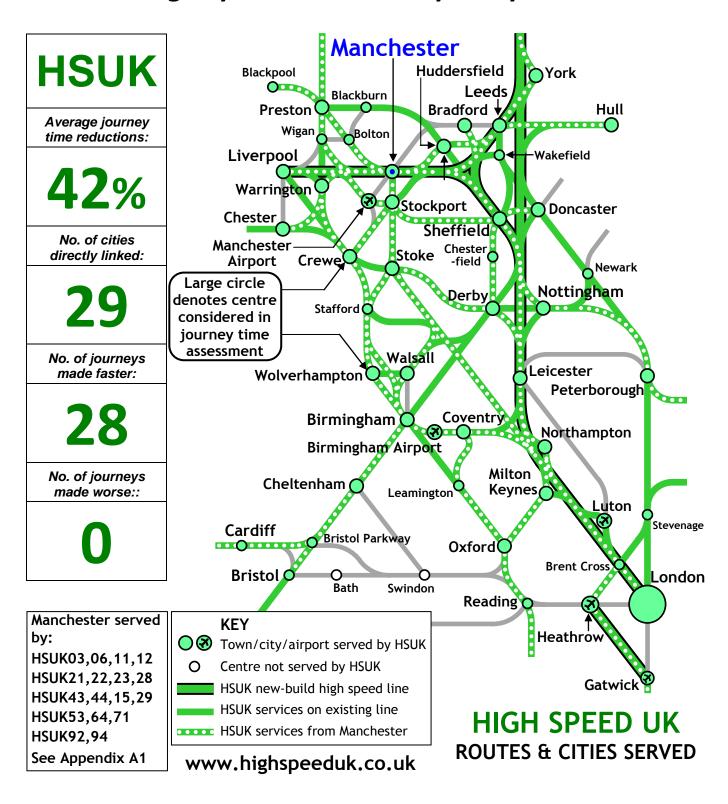
MANCHESTER

Located on spur, HS2 direct links only to London, Birmingham & Birmingham Airport



MANCHESTER

Fully connected to national high speed network, direct high speed links to all principal UK cities



| | Com | parat | ive Jo | urney | / | Time | es fro | m M | anch | ester | • | |
|------------------|--------------------|-------|-------------------------|------------|------|-----------------|---------------|-----------------|---------------|-----------------|-----------------------|-----------------|
| Quickest via: | HSUK No change HS2 | , | time adju ber of cha | | HSUK | | Existing | | HS2 | | Journey made | |
| Origin | Destination | HSUK | Existing | HS2 | | Journey time | No of changes | Journey time | No of changes | Journey time | No of changes | worse by HS2 |
| | Birmingham | 57 | 87 | 40 | | 57 | 0 | 87 | 0 | 40 | 0 | |
| | B'ham Airport | | 112 | 55 | | 69 | 0 | 112 | 0 | 45 | O ^B | |
| | Bradford | 30 | 59 | 59 | | 30 | 0 | 59 | 0 | 59 | 0 | |
| ΝΛ | Cheltenham | 97 | 137 | 137 | | 97 | 0 | 137 | 0 | 137 | 0 | |
| IVI | Chester | 27 | 64 | 64 | | 27 | 0 | 64 | 0 | 64 | 0 | |
| • | Coventry | 86 | 122 | 93 | | 86 | 0 | 122 | 0 | 63 | 1 ^B | |
| Α | Crewe | 28 | 35 | 35 | | 28 | 0 | 35 | 0 | 35 | 0 | |
| | Derby | 53 | 114 | 114 | | 53 | 0 | 94 | 1 | 94 | 1 | # |
| NI | Doncaster | 78 | 78 | 78 | | 78 | 0 | 78 | 0 | 78 | 0 | |
| I | Heathrow | 103 | 236 | 110 | | 103 | 0 | 196 | 2 | 90 | 1 | |
| | Huddersfield | 26 | 26 | 26 | | 26 | 0 | 26 | 0 | 26 | 0 | |
| | Hull | 98 | 113 | 113 | | 98 | 0 | 113 | 0 | 113 | 0 | |
| | Leeds | 26 | 51 | 51 | | 26 | 0 | 51 | 0 | 51 | 0 | |
| | Leicester | 47 | 142 | 142 | | 47 | 0 | 122 | 1 | 122 | 1 | # |
| Н | Liverpool | 19 | 33 | 33 | | 19 | 0 | 33 | 0 | 33 | 0 | |
| | London | 77 | 127 | 67 | | 77 | 0 | 127 | 0 | 67 | 0 | |
| E | Luton | 104 | 233 | 233 | | 84 | 1 | 193 | 2 | 193 | 2 | |
| L | M'ch'r Airport | 13 | 13 | 13 | | 13 | 0 | 13 | 0 | 13 | 0 | |
| | Milton Keynes | 81 | 95 | 95 | | 81 | 0 | 95 | 0 | 95 | 0 | |
| 5 | Northampton | 67 | 139 | 139 | | 67 | 0 | 119 | 1 | 109 | 1 ^B | |
| | Nottingham | 45 | 106 | 106 | | 45 | 0 | 106 | 0 | 106 | 0 | |
| Т | Oxford | 110 | 171 | 167 | | 110 | 0 | 171 | 0 | 137 | 1 ^B | |
| | Peterborough | 84 | 174 | 174 | | 84 | 0 | 154 | 1 | 154 | 1 | |
| | Preston | 25 | 41 | 41 | | 25 | 0 | 41 | 0 | 41 | 0 | |
| Ε | Sheffield | 23 | 50 | 50 | | 23 | 0 | 50 | 0 | 50 | 0 | |
| _ | Stockport | 8 | 10 | 10 | | 8 | 0 | 10 | 0 | 10 | 0 | |
| | Stoke | 30 | 36 | 36 | | 30 | 0 | 36 | 0 | 36 | 0 | # |
| R | Walsall | 88 | 150 | 150 | | 88 | 0 | 130 | 1 | 130 | 1 | |
| | Warrington | 11 | 23 | 23 | | 11 | 0 | 23 | 0 | 23 | 0 | |
| | Wolverhampton | 45 | 69 | 69 | | 45 | 0 | 69 | 0 | 69 | 0 | |
| | York | 43 | 77 | 77 | | 43 | 0 | 77 | 0 | 77 | 0 | |

A = Change introduced by HS2 B = Change via shuttle between Birmingham International and Interchange # = Journey made worse by intervention of HS2 (no adjustment made to existing journey time)

Generally, journey times adjusted by 20 minutes to allow for each change of trains. 30 minute adjustment applied for the special cases noted above ie A – extra change introduced by HS2 and B – shuttle connection between Birmingham International and Birmingham Interchange.