

# HS4 Mk2 Route Loadings

## *Introduction*

Deriving the route loadings for a given service plan can be a difficult and tedious matter, and very prone to error. Furthermore, understanding what a given loading consists of can be problematic at a later time, requiring effectively as much effort to interpret as it originally took to produce (the only way reliably to work it out is effectively to regenerate it).

Following the referendum on EU membership and the decision to disengage from the EU, several changes have been made to the plans for HS rail, most importantly, abandoning GC-gauge, and building all new infrastructure to standard UK loading gauge. This has very little impact on the routes proposed, but significant impact on the service plans. In certain cases it is now proposed to include sections of classic route in the HS route, rather than building exclusively new throughout. (Note that this is different from the previous proposals to run classic compatible services on classic lines, **beyond** the HS route; this actually incorporates classic sections, upgraded as appropriate, in the HS route itself.)

Because of the significant changes introduced at Mk1A, the latest versions of all the Mk1 plans (v9.3 in the case of HS4) have been preserved, available in an archive section on the website.

For my own convenience as much as anything else, the present article elucidates the route loadings corresponding to service plans 5 and 6. Service Plan 5 is the full service plan for HS4 Mk1A, and SP6 for Mk2. HS4 is unusual in the following respect. Because of the superb alignments of the existing GWML, the incorporation of sections of classic route in HS4 at Mk1A is very extensive. (Indeed, HS4 and the GWML are best considered together as an integrated set of routes.) Mk1A may thus be viewed as a cut-down version of the original proposals, much quicker and very much less expensive to implement, but nonetheless delivering a large proportion of the advantages of those proposals. (However, it must be admitted that the estimated journey times for the Plymouth service are disappointing at Mk1A. Accordingly, an extra, fast service from Paddington to Plymouth, and on to Cornwall, via the Berks & Hants line, is proposed at Mk1A, which does give satisfactory journey times, This will not need to be carried forward to Mk2.)

In one important respect, however, Mk1A represents a very significant extension on Mk1. A connection is made to the South Western classic route at Basingstoke, allowing new services (on the existing, classic lines,) to Southampton, Bournemouth, Weymouth, Salisbury and Exeter to be added. Linked with this, the route around Reading has been completely re-planned (including a new Reading Parkway station). A fundamental requirement of the design is to provide extra capacity at the London end of the GWML, ideally out as far as Swindon. Accordingly, completely new infrastructure is proposed out as far as (just past) Didcot, with enhancement of the classic line thereafter (140mph line speed thence to Bristol Parkway, with quadrupling to Wootton Bassett Junction).

Given the amount that was cut out of HS4 Mk1 to form Mk1A, a Mk2 is therefore proposed, which is effectively the reinstatement of those parts of the original plans removed for Mk1A, on a piecemeal basis, as and when the build-up of traffic on Mk1A makes extra capacity desirable. If this is implemented in full, we end up with the original design, except for the change of route around Reading, but having enjoyed years of service from the MK1A version in the interim.

The present article, though really of no interest to anyone but myself, is nonetheless published on the website, just in case anyone feels moved to challenge my figures, in which case they will be able to see how I derived them, without having to involve me personally, though I do otherwise welcome feedback.

The service plans are given in full, since otherwise the information would not be self-contained, and would require consulting the original Route and Service Plans article also.

## Service Plan 5

HS4 services (including interchange at Bristol Parkway where appropriate):

- 2tphH Norwich – Beccles – Ipswich HS – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Swindon – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea  
[Interchange with HS7 2tphH:  
Newcastle – Consett – Durham Relly Mill – Darlington Bank Top –:  
Middlesborough – Thornaby – Eaglescliffe – Yarm – Northallerton –:  
(joins / splits) York HS – Leeds HS – Huddersfield – Sheffield HS – Derby – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Bristol Temple Meads – Taunton – Exeter St. David’s – Plymouth]
- 2tphH Dover Priory – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway LL – Swindon – Bristol Parkway – Bristol Temple Meads BT [Interchange with HS7 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport]
- 2tphH Norwich – Diss – Ipswich – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Swindon – Bristol Parkway – Bristol Temple Meads – Taunton – Exeter St. David’s – Plymouth [Interchange with HS7 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea]
- 2tphH Dover Priory – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway LL – Swindon – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport [Interchange with HS7 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Ashchurch – Cheltenham Spa – Bristol Parkway – Bristol Temple Meads BT]
- 2tphH Paddington – Old Oak Common – LHR Interchange – Reading Parkway LL – Taunton – Exeter St. David’s – Plymouth – Liskeard – Bodmin Rd. – Lostwithiel – Par – St. Austell – Truro – Redruth – Camborne – Hayle – St. Erth – Penzance
- 2tphH Lowestoft – Oulton Broad South – )  
Yarmouth – Breney Arms – Reedham South – ) Beccles (joins/splits) – Brampton – Halesworth – Darsham – Saxmundham – Wickham Market – Woodbridge – Ipswich HS – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Poole – Wareham – Dorchester South – Weymouth
- 2tphH Harwich Town – Dovercourt – Harwich Parkeston Quay – Wrabness – Mistley – Manningtree – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Bournemouth West
- 2tphH Clacton – )  
Walton – Frinton – ) Thorp le Soken (joins/splits) – Wivenhoe – Colchester - Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Salisbury – Tisbury – Gillingham – Templecombe –

Sherborne – Yeovil Junction – Crewkerne – Chard Parkway – Axminster – Honiton – Exeter Central – Exeter St. David’s – Okehampton – Tavistock – Bere Alston – Plymouth

- 2tphH Braintree – Braintree Freeport – Cressing – White Notley – Witham – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Overton – Whitchurch – Andover – Grateley – Salisbury
- 2tphH Oxford – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Bournemouth West
- 2tphH Paddington – Old Oak Common – LHR Interchange – Reading Parkway LL – Didcot Parkway – Swindon – Chippenham – Bath Spa – Bristol Temple Meads
- 2tphH Paddington – Old Oak Common – LHR Interchange – Reading Parkway LL – Didcot Parkway – Swindon – Kemble – Stroud – Stonehouse – Gloucester (splis / joins) –:  
– Lydney – Chepstow – Caldicot – Severn Tunnel Junction – Newport – Cardiff –  
Cardiff (Rhoose) Airport  
– (reverse) Cheltenham Spa – Ashchursh – Worcester Shrub Hill

#### GWML Regional Metro:

- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Reading – Didcot – Wantage Road – Swindon (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Maidenhead – Twyford – Reading – Tilehurst – Pangbourne – Goring and Streatley – Cholsey – Didcot – Oxford (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Reading – Thatcham – Newbury – Hungerford – Bedwyn – Pewsey – Devizes – Holt Junction – Bradford on Avon – Bath – Bristol Temple Meads (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Reading – Thatcham – Newbury – Kintbury – Hungerford – Bedwyn – Savernake – Marlborough (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Maidenhead – Bourne End (connections to and from Marlow) High Wycombe – Princes Risborough – Little Kimble – Aylesbury – Aylesbury Vale Parkway – Calvert (for HS2) – Winslow – Bletchley – Milton Keynes (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Maidenhead – Twyford – Wargrave – Shiplake – Henley (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – Slough – Reading – Thatcham – Newbury – Pewsey – Westbury – Taunton – Tiverton Parkway – Cullompton – Exeter St. David’s – Dawlish – Teignmouth – Newton Abbot – Totnes – Ivybridge – Plymouth
- 2tphR Paddington – Old Oak Common – Slough – Reading – Didcot – Wantage Road – Swindon – Royal Wootton Bassett – Chippenham – Melksham – Holt Junction – Trowbridge – Westbury – Frome – Castle Cary – Yeovil Pen Mill – Dorchester West – Weymouth
- 2tphR Paddington – Old Oak Common – Slough – Reading – Didcot – Oxford – Hanborough – Charlbury – Kingham – Moreton in March – Honeybourne – Evesham – Pershore – Worcester Shrub Hill – Worcester Foregate Street – Malvern Link – Great Malvern – Colwell – Ledbury – Hereford

Note that the GWML services have also changed, in response to HS4 changes. In particular, the fast service from Paddington to Penzance has been replaced by the Norwich via Diss – Penzance service on HS12/HS4, and that now the Heathrow Shuttle service has six arms. (Refer to the article ‘GWML Service Plans’ for full details of how classic services change, in sync. with HS services.)

#### HS7 South of Birmingham:

- 2tphH Newcastle – Consett – Durham Relly Mill – Darlington Bank Top –: Middlesborough – Thornaby – Eaglescliffe – Yarm – Northallerton –: (joins / splits) York HS – Leeds HS – Huddersfield – Sheffield HS – Derby – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Bristol Temple Meads – Taunton – Exeter St. David’s – Plymouth
- 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport
- 2tphH Norwich – Peterborough – Nottingham – Derby – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea
- 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Ashchurch – Cheltenham Spa – Bristol Parkway – Bristol Temple Meads BT

#### NE-SW Regional Metro:

- 2tphR York – Micklefield – Leeds City – Wakefield Westgate – South Yorkshire LL – Rotherham – Sheffield Midland – Chesterfield – Derby – Burton on Trent – Tamworth – Birmingham New St. – University – Bromsgrove – Droitwich Spa – Worcester Shrub Hill – Ashchurch – Cheltenham Spa – Gloucester (reverse) – Bristol Parkway – Bristol Temple Meads – Weston Super Mare – Highbridge – Bridgwater – Taunton – Tiverton Junction – Cullompton – Exeter St. David’s – Dawlish – Teignmouth – Newton Abbot – Totnes – Ivybridge – Plymouth

#### Cross Country (XC) Services:

- 2tphR York – Micklefield – Leeds City – Wakefield Westgate – South Yorkshire LL – Sheffield Midland – Chesterfield – Derby – Burton upon Trent – Tamworth HL – Birmingham New St. (reverse) – Birmingham International – Coventry – Leamington Spa – Banbury – Oxford – Reading General (reverse) – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Bournemouth West
- 2tphR Manchester Piccadilly – Stockport – Macclesfield – Stoke upon Trent – Stafford – Wolverhampton – Birmingham New St. – Birmingham International – Coventry – Leamington Spa – Banbury – Oxford – Reading General (reverse) – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Bournemouth West

Representative Hourly Cross-Platform Interchange at Bristol Parkway:

- 00H Norwich via Beccles – Euston Cross – Swansea
- H Newcastle / Middlesborough – (joins / splits York HS) – Plymouth
- 07H Dover Priory – Euston Cross – Bristol Temple Meads BT
- H Birmingham HS – Cardiff Airport
- 15H Norwich via Diss – Euston Cross – Plymouth
- H Norwich via Birmingham – Swansea
- 23H Dover Priory – Euston Cross – Cardiff Airport
- H Birmingham HS – Bristol Temple Meads BT

– repeating at 30, 37, 45 and 53 minutes past.

Representative Hourly Cross-Platform Interchange at Worcester Shrub Hill:

- 00H Newcastle / Middlesborough – (joins / splits York HS) – Plymouth
- H Worcester – Gloucester – Paddington
- 07H Birmingham HS – Cardiff Airport
- R York – Plymouth
- 15H Norwich – Swansea
- R Hereford – Paddington
- 23H Birmingham HS – Bristol Temple Meads BT
- RS Birmingham New St. – Hereford

– repeating at 30, 37, 45 and 53 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Swindon (refer to Appendix B for the revised layout at Swindon):

- 00H Norwich via Beccles – Euston Cross – Swansea (platform 1)
- H Paddington – Gloucester – Cardiff / Worcester (platform 5; not cross-platform)
- 07H Dover Priory – Euston Cross – Bristol Temple Meads BT (platform 1)
- R Heathrow Shuttle (platform 2; reverse then return from platform 3)
- 15H Norwich via Diss – Euston Cross – Plymouth (platform 1)
- H Paddington – Bristol Temple Meads via Bath (platform 2)
- 23H Dover Priory – Euston Cross – Cardiff Airport (platform 1)
- R Paddington – Weymouth (platform 2)

– repeating at 30, 37, 45, and 53 minutes past.

Representative Hourly Interchange at Reading Parkway (cross-platform at both HL and LL):

00H	LL	<i>Norwich via Beccles – Euston Cross – Swansea</i>	<i>NON-STOP</i>
H	LL	Dover Priory – Euston Cross – Bristol Temple Meads BT	
H	LL	Paddington – Bristol Temple Meads via Bath	
H	HL	Lowestoft / Yarmouth – (joins / splits Beccles) – Euston Cross – Weymouth	
RS	HL	Henley – Basingstoke all station	
07H	HL	Clacton / Walton – (joins / splits Thorpe le Soken) – Euston Cross – Plymouth	
R	HL	XC Manchester – Bournemouth West	
15H	LL	<i>Norwich via Diss – Euston Cross – Plymouth</i>	<i>NON-STOP</i>
H	LL	Dover Priory – Euston Cross – Cardiff Airport	
H	LL	Paddington – Gloucester – Cardiff Airport / Worcester Shrub Hill	
H	HL	Harwich – Euston Cross – Bournemouth West	
RS	HH	Reading – Basingstoke all stations	
23H		Paddington – Penzance	
	HL	Braintree – Euston Cross – Salisbury	
R	HL	XC York – Bournemouth West	

– repeating at 30, 37, 45, and 53 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Westbury:

00R	Paddington – Plymouth
R	Paddington – Weymouth

– repeating at 30 minutes past.

The overall loading imposed on HS4 (unchanged from SP2) is as follows:

• Euston Cross	– Old Oak Common East Junction	(*)	16tph
• Old Oak Common East Jn.	– Old Oak Common West Junction		16tph
• Paddington	– Old Oak Common station (ground level *)		6tph
• Old Oak Common station	– Old Oak Common West Junction		6tph
• Old Oak Common West Jn.	– Three Mile Cross Junction		22tph
• Three Mile Cross Junction	– Burghfield Junction		14tph
• Three Mile Cross Junction	– Grazeley Junction		8tph
• Grazeley Junction	– Basingstoke HS	(*)	10tph
• Grazeley Junction	– Burghfield Junction		2tph
• Burghfield Junction	– Theale East Junction		16tph
• Theale East Junction	– Aston North Junction		14tph
• Aston North Junction	– Foxhall HS Junction (via Didcot station)		4tph
• Aston North Junction	– Foxhall HS Junction (avoiding station)		8tph
• Foxhall HS Junction	– Swindon station	(*)	12tph
• Swindon station	– Wootton Bassett Junction	(*)	10tph
• Wootton Bassett Junction	– Westerleigh Junction		8tph

- Westerleigh Junction – Bristol Parkway 16tph
- Bristol Parkway – Severn Tunnel Junction (\*) 8tph
- Severn Tunnel Junction – Cardiff (\*) 10tph
- Cardiff – Cardiff (Rhoose) Airport 10tph
- Cardiff (Rhoose) Airport – Swansea (\*) 4tph

(\*) There will of course additionally be non-HS4 services on these sections. Except for Bristol Parkway – Severn Tunnel Junction and Cardiff Airport – Swansea (and, of course, Euston Cross – Old Oak Common,) these are all 4-track.

### *Service Patterns at Reading*

The interchange pattern at Reading Parkway has been given in the relevant service plans. The service pattern at Reading General is of direct interest also. The following summarises the westbound service sequence there, at SP5, and is taken from the article ‘GWML Service Plans’. These are just the semi-fast RM services. There are also stopping services to Newbury, Basingstoke and Henley, and Crossrail. See the ‘GWML Service Plans’ article for full details. In particular, the service between Reading and Basingstoke, alternate ones originating from Henley, have been mentioned earlier, as they provide connections to most of the services at Reading Parkway (the XC services provide connections with the rest).

- 00 LHR Shuttle – Swindon
- 00 Gatwick Airport – Milton Keynes
- 10 Bournemouth – Manchester (rev)
- 10 LHR Shuttle – Devizes – Bristol
- 12 Manchester – Bournemouth (rev)
- 15 Paddington – Weymouth
- 15 LHR Shuttle – Oxford
- 24 Paddington – Hereford
- 25 Bournemouth – York (rev)
- 25 LHR Shuttle – Marlborough
- 27 York – Bournemouth (rev)
- 28 Paddington – Plymouth

– repeating at 30 minutes past.

Elucidation of the loadings:

1. Euston Cross – Old Oak Common West Junction
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth
  - 2tphH Braintree – Salisbury
  - = 16tph
  
2. Paddington – Old Oak Common West Junction
  - 2tphH Paddington – Penzance via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill via Gloucester
  - = 6tph
  
3. Old Oak Common West Junction – Three Mile Cross Junction
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth
  - 2tphH Braintree – Salisbury
  - 2tphH Paddington – Penzance via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill via Gloucester
  - = 22tph
  
4. Three Mile Cross Junction – Burghfield Junction
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Penzance via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill via Gloucester
  - = 14tph

5. Three Mile Cross Junction – Grazeley Junction
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth
  - 2tphH Braintree – Salisbury
  - = 8tph
  
6. Grazeley Junction – Basingstoke HS station
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth
  - 2tphH Braintree – Salisbury
  - 2tphH Oxford – Bournemouth West
  - = 10tph
  
7. Grazeley Junction – Burghfield Junction
  - 2tphH Oxford – Bournemouth West
  - = 2tph
  
8. Burghfield Junction – Theale East Junction
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Penzance via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill via Gloucester
  - 2tphH Oxford – Bournemouth West
  - = 16tph
  
9. Theale East Junction – Fulscot Bridge Junction
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill via Gloucester
  - 2tphH Oxford – Bournemouth West
  - = 14tph
  
10. Fulscot Bridge Junction – Foxhall HS Junction (via Didcot station)
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill via Gloucester
  - = 4tph

11. Fulscot Bridge Junction – Foxhall HS Junction (avoiding station)
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - = 8tph
  
12. Foxhsl HS Junction – Swindon station
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill via Gloucester
  - = 12tph
  
13. Swindon station – Wootton Bassett Junction
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - = 10tph
  
14. Wootton Bassett Junction – Westerleigh Junction
  - 2tphH Norwich – Swansea
  - 2tphH Norwich – Penzance
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - = 8tph
  
15. Westerleigh Junction – Bristol Parkway station
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Swansea via Birmingham
  - 2tphH Norwich – Penzance
  - 2tphH Newcastle / Middlesborough – Plymouth
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Birmingham HS – Bristol Temple Meads BT
  - 2tphH Birmingham HS – Cardiff Airport
  - = 16tph

16. Bristol Parkway station – Severn Tunnel Junction
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Swansea via Birmingham
  - 2tphH Dover – Cardiff Airport
  - 2tphH Birmingham HS – Cardiff Airport= 8tph
  
17. Severn Tunnel Junction – Cardiff
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Swansea via Birmingham
  - 2tphH Dover – Cardiff Airport
  - 2tphH Birmingham HS – Cardiff Airport
  - 2tphH Paddington – Cardiff Airport via Gloucester= 10tph
  
18. Cardiff – Cardiff Airport
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Swansea via Birmingham
  - 2tphH Dover – Cardiff Airport
  - 2tphH Birmingham HS – Cardiff Airport
  - 2tphH Paddington – Cardiff Airport via Gloucester= 10tph
  
19. Cardiff Airport – Swansea
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Swansea via Birmingham= 4tph
  
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## Service Plan 6

HS4:

- 2tphH Norwich – Beccles – Ipswich HS – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Swindon – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea  
[Interchange with HS7 2tphH:  
Newcastle – Consett – Durham Relly Mill – Darlington Bank Top –:  
Middlesborough – Thornaby – Eaglescliffe – Yarm – Northallerton –:  
(joins / splits) York HS – Leeds HS – Huddersfield – Sheffield HS – Derby – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Bristol Temple Meads – Taunton – Exeter St. David’s – Plymouth]
- 2tphH Dover Priory – Canterbury East – Faversham – Sheerness – Grain – Southend HS – Southend Airport – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway LL – Swindon – Bristol Parkway – Bristol Temple Meads BT [Interchange with HS7 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport]
- 2tphH Norwich – Diss – Ipswich – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Swindon – Bristol Parkway – Bristol Temple Meads – Taunton – Exeter St. David’s – Plymouth (splits / joins) – :  
– Liskeard – Bodmin Rd. – Lostwithiel – Par – St. Austell – Truro – Redruth – Camborne – Hayle – St. Erth – Penzance  
– Bere Alston – Tavistock – Launceston – Delebole – Port Isaac Rd. – Wadebridge - Padstow  
[Interchange with HS7 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea]
- 2tphH Dover Priory – Canterbury East – Faversham – Sheerness – Grain – Southend HS – Southend Airport – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway LL – Swindon – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport [Interchange with HS7 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Ashchurch – Cheltenham Spa – Bristol Parkway – Bristol Temple Meads BT]
- 2tphH Dover Priory – Canterbury East – Faversham – Sheerness – Grain – Southend HS – Southend Airport – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway LL – Swindon – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport [Interchange with HS7 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Ashchurch – Cheltenham Spa – Bristol Parkway – Bristol Temple Meads BT]
- 2tphH Lowestoft – Oulton Broad South – )  
Yarmouth – Breney Arms – Reedham South – ) Beccles (joins/splits) – Brampton – Halesworth – Darsham – Saxmundham – Wickham Market – Woodbridge – Ipswich HS – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Poole – Wareham – Dorchester South – Weymouth

- 2tphH Harwich Town – Dovercourt – Harwich Parkeston Quay – Wrabness – Mistley – Manningtree – Colchester – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Bournemouth West
- 2tphH Clacton – )  
Walton – Frinton – ) Thorp le Soken (joins/splits) – Wivenhoe – Colchester - Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Salisbury – Tisbury – Gillingham – Templecombe – Sherborne – Yeovil Junction – Crewkerne – Chard Parkway – Axminster – Honiton – Exeter Central – Exeter St. David’s – Okehampton – Tavistock – Bere Alston – Plymouth
- 2tphH Braintree – Braintree Freeport – Cressing – White Notley – Witham – Chelmsford – Shenfield HS – Stratford HS South – Euston Cross – Old Oak Common – LHR Interchange – Reading Parkway HL – Basingstoke HS – Overton – Whitchurch – Andover – Grateley – Salisbury  
2tphH Paddington – Old Oak Common = LHR Interchange – Reading Parkway LL – Swindon – Bristol Parkway – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea (reverse) – Llanelli – Pembrey and Burry Port – Carmarthen
- 2tphH Paddington – Old Oak Common – LHR Interchange – Reading parkway LL – Thatcham – Newbury – Pewsey – Westbury – Frome – Castle Cary – Taunton – Tiverton Parkway – Cullompton – Exeter St. David’s – Dawlish – Teignmouth – Newton Abbot – Totnes – Ivybridge – Plymouth
- 2tphH Paddington – Old Oak Common = LHR Interchange – Reading Parkway LL – Didcot Parkway – Swindon – Chippenham – Bath Spa – Bristol Temple Meads
- 2tphH Paddington – Old Oak Common = LHR Interchange – Reading Parkway LL – Didcot Parkway – Swindon – Kemble – Stroud – Stonehouse – Gloucester (splis / joins) –: – Lydney – Chepstow – Caldicot – Severn Tunnel Junction – Newport – Carfiff – Cardiff (Rhoose) Airport  
– (reverse) Cheltenham Spa – Ashchursh – Worcester Shrub Hill

## GWML Regional Metro:

- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Reading – Didcot – Wantage Road – Swindon (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Maidenhead – Twyford – Reading – Tilehurst – Pangbourne – Goring and Streatley – Cholsey – Didcot – Oxford (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Reading – Thatcham – Newbury – Hungerford – Bedwyn – Pewsey – Devizes – Holt Junction – Bradford on Avon – Bath – Bristol Temple Meads (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Reading – Thatcham – Newbury – Kintbury – Hungerford – Bedwyn – Savernake – Marlborough (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Maidenhead – Bourne End (connections to and from Marlow) High Wycombe – Princes Risborough – Little Kimble – Aylesbury – Aylesbury Vale Parkway – Calvert (for HS2) – Winslow – Bletchley – Milton Keynes (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – Slough – Maidenhead – Twyford – Wargrave – Shiplake – Henley (LHR Shuttle)
- 2tphR Paddington – Old Oak Common – Slough – Reading – Didcot – Wantage Road – Swindon – Royal Wootton Bassett – Chippenham – Melksham – Holt Junction – Trowbridge – Westbury – Bruton – Castle Cary – Yeovil Pen Mill – Dorchester West – Weymouth
- 2tphR Paddington – Old Oak Common – Slough – Reading – Didcot – Oxford – Hanborough – Charlbury – Kingham – Moreton in March – Honeybourne – Evesham – Pershore – Worcester Shrub Hill – Worcester Foregate Street – Malvern Link – Great Malvern – Colwell – Ledbury – Hereford

Note that the GWML services have also changed, in response to HS4 changes. In particular, the fast service from Paddington to Penzance has been replaced by the Norwich via Diss – Penzance service on HS12/HS4, and that now the Heathrow Shuttle service has six arms. (Refer to the article ‘GWML Service Plans’ for full details of how classic services change, in sync. with HS services.)

## HS7 South of Birmingham:

- 2tphH Newcastle – Consett – Durham Relly Mill – Darlington Bank Top –:  
Middlesborough – Thornaby – Eaglescliffe – Yarm – Northallerton –:  
(joins / splits) York HS – Leeds HS – Huddersfield – Sheffield HS – Derby – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway HS – Bristol Temple Meads HS – Taunton – Exeter St. David’s – Plymouth
- 2tphH Norwich – Ely (reverse) – Peterborough – Nottingham – Derby – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway HS – Cardiff HS – Cardiff (Rhoose) Airport – Port Talbot – Swansea HS
- 2tphH Liverpool Lime St. – Liverpool South Parkway – Runcorn – Crewe – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway HS – Bristol Temple Meads – Taunton – Exeter St. David’s – Plymouth  
Included for completeness, although it travels over no part of HS4.]

- 2tphH Holyhead – Bangor – Llandudno Junction – Rhyl – Flint – Chester – Crewe – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway HS – Cardiff HS – Cardiff (Rhoose) Airport – Port Talbot – Swansea
- 2tphH Plymouth – Exeter St. David’s – Taunton – Bristol Temple Meads – Cardiff HS – Cardiff (Rhoose) Airport – Port Talbot – Swansea
- 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway HS – Cardiff HS – Cardiff (Rhoose) Airport
- 2tphH Birmingham HS – Birmingham Interchange – Worcester Shrub Hill – Cheltenham Spa – Bristol Parkway HS – Bristol Temple Meads BT

#### Regional Metro Services:

- 2tphR York – Micklefield – Leeds City – Wakefield Westgate – South Yorkshire LL – Rotherham – Sheffield Midland – Chesterfield – Derby – Burton on Trent – Tamworth – Birmingham New St. – University – Bromsgrove – Droitwich Spa – Worcester Shrub Hill – Ashchurch – Cheltenham Spa – Gloucester (reverse) – Bristol Parkway – Bristol Temple Meads – Weston Super Mare – Highbridge – Bridgwater – Taunton – Tiverton Junction – Cullompton – Exeter St. David’s – Dawlish – Teignmouth – Newton Abbot – Totnes – Ivybridge – Plymouth
- 2tphR Stalybridge – Ashton-under-Lyne – Manchester Victoria – Salford Central – Eccles – Warrington Bank Quay – Helsby – Chester – Wrexham General – Ruabon – Chirk – Gobowen – Shrewsbury – Church Stretton – Craven Arms – Ludlow – Leominster – Hereford – Abergavenny – Pontypool & New Inn – Cwmbran – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea  
[This service alternates between Stalybridge and Newport with the service from Stalybridge to Plymouth, which reverses in Newport.]
- 2tphR Plymouth – Ivybridge – Brent – Totnes – Newton Abbot – Teignmouth – Dawlish – Exeter St. David’s – Cullompton – Tiverton Parkway – Taunton – Bridgwater – Highbridge – Weston Super Mare – Bristol Temple Meads – Filton Abbey Wood – Newport – Cardiff – Cardiff (Rhoose) Airport – Bridgend – Port Talbot – Neath – Swansea  
[This service alternates between Plymouth and Newport with the service from Plymouth to Stalybridge, which reverses at Newport.]
- 2tphR Stalybridge – Ashton-under-Lyne – Manchester Victoria – Salford Central – Eccles – Warrington Bank Quay – Helsby – Chester – Wrexham General – Ruabon – Chirk – Gobowen – Shrewsbury – Church Stretton – Craven Arms – Ludlow – Leominster – Hereford – Abergavenny – Pontypool & New Inn – Cwmbran – Newport (reverse) – Filton Abbey Wood – Bristol Temple Meads – Weston Super Mare – Highbridge – Bridgwater – Taunton – Tiverton Parkway – Cullompton – Exeter St. David’s – Dawlish – Teignmouth – Newton Abbot – Totnes – Ivybridge – Plymouth
- 2tphR Cleethorpes – Grimsby Town – Barnetby – Market Rasen – Lincoln – Newark Castle – Nottingham – Derby (reverse) – Burton upon Trent – Tamworth – Birmingham New St. – University – Bromsgrove – Droitwich Spa – Worcester Shrub Hill – Ashchurch – Cheltenham Spa – Gloucester – Lydney – Chepstow – Newport – Cardiff Central – Cardiff (Rhoose) Airport
- 2tphR Portsmouth Harbour – Portsmouth & Southsea – Fratton – Cosham – Fareham – Southampton – Romsey – Salisbury – Warminster – Westbury – Trowbridge – Bradford-on-Avon – Bath Spa – Bristol Temple Meads (reverse) – Filton Abbey Wood – Newport – Cardiff Central – Cardiff (Rhoose) Airport

## Cross Country (XC) Services:

- 2tphR York – Micklefield – Leeds City – Wakefield Westgate – South Yorkshire LL – Sheffield Midland – Chesterfield – Derby – Burton upon Trent – Tamworth HL – Birmingham New St. (reverse) – Birmingham International – Coventry – Leamington Spa – Banbury – Oxford – Reading General (reverse) – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Bournemouth West
- 2tphR Manchester Piccadilly – Stockport – Macclesfield – Stoke upon Trent – Stafford – Wolverhampton – Birmingham New St. – Birmingham International – Coventry – Leamington Spa – Banbury – Oxford – Reading General (reverse) – Reading Parkway HL – Basingstoke HS – Winchester – Southampton Airport Parkway – Southampton Central – Brockenhurst – Bournemouth Central – Bournemouth West

## Representative Hourly Cross-Platform Interchange at Bristol Parkway HS:

- 00H Norwich via Beccles – Euston Cross – Swansea  
H Newcastle / Middlesborough – (joins / splits York HS) – Plymouth
- 05H Dover Priory – Euston Cross – Bristol Temple Meads BT  
H Birmingham HS – Cardiff Airport
- 10H Liverpool – Plymouth  
(no connection, but the service Plymouth – Swansea occupies the slot into South Wales)  
H Paddington – Swansea – Carmarthen ) These services use the Bristol Parkway classic platforms,  
R York – Plymouth ) and have cross-platform interchange with each other.
- 15H Norwich via Diss – Euston Cross – Plymouth – Penzance / Padstow  
H Norwich – Birmingham – Swansea
- 20H Dover Priory – Euston Cross – Cardiff Airport  
H Birmingham HS – Bristol Temple Meads BT
- 25H Holyhead – Swansea  
(no connection, but the Swansea – Plymouth service occupies the slot into the West Country)

– repeating at 30, 35, 40, 45, 50 and 55 minutes past.

## Representative Hourly Cross-Platform Interchange at Worcester Shrub Hill:

- 00H Newcastle / Middlesborough – (joins / splits York HS) – Plymouth  
H Worcester – Gloucester – Paddington (travels on classic tracks)
- 05H Birmingham HS – Cardiff Airport  
R York – Plymouth
- 10H Liverpool – Plymouth  
RS Birmingham New St. – Worcester
- 15H Norwich – Swansea  
R Hereford – Paddington

20H Birmingham HS – Bristol Temple Meads BT  
RS Worcester – Oxford

25H Holyhead – Swansea  
RS Birmingham New St. – Hereford

– repeating at 30, 35, 40, 45, 50 and 55 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Swindon (refer to Appendix B for the revised layout at Swindon):

00H Paddington – Gloucester – Cardiff / Worcester (platform 5)  
(no connection)

05H [Dover Priory – ] Euston Cross – Bristol Temple Meads BT (platform 1)  
R Heathrow Shuttle (platform 2; reverse then return from platform 3)

10H Paddington – Swansea – Carmarthen (platform 2)  
(no connection)

15H Paddington – Bristol Temple Meads via Bath (platform 2)  
(no connection)

20H [Dover Priory – ] Euston Cross – Cardiff Airport (platform 1)  
R Paddington – Weymouth (platform 2)

– repeating at 30, 35, 40, 45, and 50 minutes past.

Representative Hourly Interchange at Reading Parkway (cross-platform at both HL and LL):

00H LL *Norwich via Beccles – Euston Cross – Swansea* *NON-STOP*  
H LL Dover Priory – Euston Cross – Bristol Temple Meads BT  
H LL Paddington – Bristol Temple Meads via Bath  
H HL Lowestoft / Yarmouth – (joins / splits Beccles) – Euston Cross – Weymouth  
RS HL Henley – Basingstoke all station

05H LL Paddington – Swansea – Carmarthen  
H HL Clacton / Walton – (joins / splits Thorpe le Soken) – Euston Cross – Plymouth  
R HL XC Manchester – Bournemouth West

15H LL *Norwich via Diss – Euston Cross – Penzance / Padstow* *NON-STOP*  
H LL Dover Priory – Euston Cross – Cardiff Airport  
H LL Paddington – Gloucester – Cardiff Airport / Worcester Shrub Hill  
H HL Harwich – Euston Cross – Bournemouth West  
RS HH Reading – Basingstoke all stations

20H HL Braintree – Euston Cross – Salisbury  
R HL XC York – Bournemouth West

– repeating at 30, 37, 45, and 53 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Westbury and Castle Cary:

00H Paddington – Plymouth  
R Paddington – Weymouth

– repeating at 30 minutes past. A little elucidation is needed. The Plymouth service departs first and calls at Frome and Castle Cary. The Weymouth service departs second and calls at Bruton and Castle Cary, overtaking the Plymouth service by the Frome avoiding line. It then waits at Castle Cary for the Plymouth service. In the up direction, the Plymouth service departs Castle Cary first, and also reaches Westbury first, where it must wait for the Weymouth service. This provides connections at both Frome and Bruton to and from both Plymouth and Weymouth, and Paddington by both routes, without both services having to serve both stations. Clever stuff, eh? (There already is cross-platform interchange at Castle Cary in the down direction, but a new platform is needed in the up direction. There already is cross-platform interchange at Westbury in the up direction, but a new platform is required in the down direction.)

Representative Hourly Cross-Platform Interchange Pattern at Cardiff Airport:

00H Norwich – Swansea via London  
R Cleethorpes – Cardiff Airport

05H Birmingham – Cardiff Airport  
R Portsmouth Harbour – Cardiff Airport

10H Plymouth – Swansea  
R Stalybridge – Manchester – Swansea

15H Norwich – Birmingham – Swansea  
H Paddington – Cardiff Airport via Gloucester

20H Dover – Cardiff Airport  
H Paddington – Swansea – Carmarthen

25H Holyhead – Swansea  
R Plymouth – Swansea

– repeating at 30, 35, 40, 45, 50 and 55 minutes past.

Representative Hourly Cross-Platform Interchange Pattern at Cardiff Central (as opposed to Cardiff HS):

00H Paddington – Swansea – Carmarthen  
H Paddington – Cardiff Airport via Gloucester

10R Stalybridge – Manchester – Swansea  
R Portsmouth Harbour – Cardiff Airport

25R Plymouth – Swansea  
R Cleethorpes – Cardiff Airport

– repeating at 30, 40 and 55 minutes past.

Representative **Complete** Hourly Cross-Platform Interchange Pattern at Newport:

- 00H Paddington – Swansea – Carmarthen
- 08R Portsmouth Harbour – Cardiff Airport  
R Cardiff Airport – Cleethorpes
- 10R Stalybridge – Manchester – Swansea  
R Swansea – Plymouth  
R Plymouth – Manchester – Stalybridge (reverse; not cross-platform. Arrives 05. departs 15.)
- 12H Cardiff Airport – Paddington via Gloucester
- 15H Carmarthen – Swansea – Paddington
- 23R Cleethorpes – Cardiff Airport  
R Cardiff Airport – Portsmouth Harbour
- 25R Plymouth – Swansea  
R Swansea – Manchester – Stalybridge  
R Stalybridge – Manchester – Plymouth (reverse; not cross-platform. Arrives 20, departs 30.)
- 27R Cardiff Airport – Portsmouth Harbour  
H Paddington – Cardiff Airport via Gloucester

– repeating at 30, 37, 45 and 53 minutes past.

The Stalybridge – Plymouth service reverses in platform 1, where it spends c.10 minutes. The other pair of trains at 10 and 25 are each travelling in opposite directions, and have a cross-platform interchange, using platforms 2 and 3. There is thus plenty of time for non-cross-platform interchange with the Stalybridge – Plymouth service. The point of all this is that these timings at Newport enable a service of 4tph between each pair Stalybridge – Plymouth, Plymouth – Swansea and Swansea – Stalybridge, in both directions, 2tph being through services and the other 2tph involving one change, at Newport, giving the same arrival times as the through services. Hence the necessity to give the complete service, in both directions, at Newport.

The overall loading imposed on HS4 is as follows, (remembering that HS4 and HS7 each have their own tracks between Coalpit Heath Junction and Bristol Parkway HS):

• Euston Cross	– Old Oak Common East Junction	(*)	16tph
• Old Oak Common East Jn.	– Old Oak Common West Junction		16tph
• Paddington	– Old Oak Common station (ground level *)		8tph
• Old Oak Common station	– Old Oak Common West Junction		8tph
• Old Oak Common West Jn.	– Three Mile Cross Junction		24tph
• Three Mile Cross Junction	– Burghfield Junction		16tph
• Three Mile Cross Junction	– Grazeley Junction		8tph
• Grazeley Junction	– Basingstoke HS	(*)	10tph
• Grazeley Junction	– Burghfield Junction		2tph
• Burghfield Junction	– Theale East Junction		18tph
• Theale East Junction	– Aston North Junction		16tph
• Aston North Junction	– Didcot station avoiding line (to Oxford)		2tph
• Aston North Junction	– Foxhall HS Junction (via Didcot station)		4tph
• Aston North Junction	– Foxhall HS Junction (avoiding station)		10tph
• Foxhall HS Junction	– Magic Roundabout Junction		14tph
• Magic Roundabout Junction	– Mannington Junction		4tph
• Magic Roundabout Junction	– Swindon station	(*)	10tph
• Swindon station	– Mannington Junction	(*)	8tph
• Mannington Junction	– Wapley Common Junction		10tph
• Wapley Common Junction	– Bristol Parkway (classic)		2tph
• Bristol Parkway (classic)	– Patchway Junction	(*)	2tph
• Patchway Junction	– Severn Tunnel Junction	(*)	8tph
• Severn Tunnel Junction	– Newport	(*)	12tph
• Newport	– Cardiff Central	(*)	12tph
• Pye Corner Junction	– Bristol Parkway HS		8tph
• Bristol Parkway HS	– Brentree Junction		10tph
• Brentree Junction	– Cardiff HS		12tph
• Cardiff (Central and HS)	– Cardiff (Rhoose) Airport		24tph
• Cardiff (Rhoose) Airport	– Ewenny South Junction		14tph
• Ewenny South Junction	– Swansea (via Bridgend)	(*)	6tph
• Ewenny South Junction	– Swansea (HS4 direct)		8tph

(\*) There will of course additionally be non-HS4 services on these sections. Except for Bristol Parkway (classic) – Cardiff Central and Ewenny North Junction – Swansea (and, of course, Euston Cross – Old Oak Common,) these are all 4-track.

## Elucidation of Main Line Loadings:

1. Euston Cross – Old Oak Common West Junction
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Plymouth – Penzance / Padstow
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth via Salisbury
  - 2tphH Braintree – Salisbury
  - = 16tph
  
2. Paddington – Old Oak Common West Junction
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphH Paddington – Plymouth via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester
  - = 8tph
  
3. Old Oak Common West Junction – Three Mile Cross Junction
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Plymouth – Penzance / Padstow
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth via Salisbury
  - 2tphH Braintree – Salisbury
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphH Paddington – Plymouth via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester
  - = 24tph
  
4. Three Mile Cross Junction – Burghfield Junction
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Plymouth – Penzance / Padstow
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphH Paddington – Plymouth via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester
  - = 16tph

5. Three Mile Cross Junction – Grazeley Junction
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth via Salisbury
  - 2tphH Braintree – Salisbury
  - = 8tph
  
6. Grazeley Junction – Basingstoke HS
  - 2tphH Lowestoft / Yarmouth – Weymouth
  - 2tphH Harwich – Bournemouth West
  - 2tphH Clacton / Walton – Plymouth via Salisbury
  - 2tphH Braintree – Salisbury
  - 2tphH {Newcastle / Middlesborough –} Oxford – Bournemouth West
  - = 10tph
  
7. Grazeley Junction – Burghfield Junction
  - 2tphH {Newcastle / Middlesborough –} Oxford – Bournemouth West
  - = 2tph
  
8. Burghfield Junction – Theale East Junction
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Plymouth – Penzance / Padstow
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphH Paddington – Plymouth via Berks and Hants
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester
  - 2tphH {Newcastle / Middlesborough –} Oxford – Bournemouth West
  - = 18tph
  
9. Theale East Junction – Aston North Junction
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Plymouth – Penzance / Padstow
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa
  - 2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester
  - 2tphH {Newcastle / Middlesborough –} Oxford – Bournemouth West
  - = 16tph
  
10. Aston North Junction – Didcot station avoiding line (to Oxford)
  - 2tphH {Newcastle / Middlesborough –} Oxford – Bournemouth West
  - = 2tph
  
11. Aston North Junction – Foxhall HS Junction (via Didcot station)
  - 2tphH Paddington – Bristol Temple Meads via Bath Spa

2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester  
= 4tph

12. Aston North Junction – Foxhall HS Junction (avoiding station)

2tphH Norwich – Swansea via London  
2tphH Norwich – Plymouth – Penzance / Padstow  
2tphH Dover – Bristol Temple Meads BT  
2tphH Dover – Cardiff Airport  
2tphH Paddington – Carmarthen via Newport  
= 10tph

13. Foxhsl HS Junction – Magic Roundabout Junction

2tphH Norwich – Swansea via London  
2tphH Norwich – Plymouth – Penzance / Padstow  
2tphH Dover – Bristol Temple Meads BT  
2tphH Dover – Cardiff Airport  
2tphH Paddington – Carmarthen via Newport  
2tphH Paddington – Bristol Temple Meads via Bath Spa  
2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester  
= 14tph

14. Magic Roundabout Junction – Mannington Junction

2tphH Norwich – Swansea via London  
2tphH Norwich – Plymouth – Penzance / Padstow  
= 4tph

15. Magic Roundabout Junction – Swindon station

2tphH Dover – Bristol Temple Meads BT  
2tphH Dover – Cardiff Airport  
2tphH Paddington – Carmarthen via Newport  
2tphH Paddington – Bristol Temple Meads via Bath Spa  
2tphH Paddington – Cardiff Airport / Worcester Shrub Hill vis Gloucester  
= 10tph

16. Swindon station – Mannington Junction

2tphH Dover – Bristol Temple Meads BT  
2tphH Dover – Cardiff Airport  
2tphH Paddington – Carmarthen via Newport  
2tphH Paddington – Bristol Temple Meads via Bath Spa  
= 8tph

17. Mannington Junction – Wapley Common Junction

2tphH Norwich – Swansea via London  
2tphH Norwich – Plymouth – Penzance / Padstow  
2tphH Dover – Bristol Temple Meads BT  
2tphH Dover – Cardiff Airport  
2tphH Paddington – Carmarthen via Newport  
= 10tph

18. Wapley Common Junction – Pye Corner Junction
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Plymouth – Penzance / Padstow
  - 2tphH Dover – Bristol Temple Meads BT
  - 2tphH Dover – Cardiff Airport
  - = 8tph
  
19. Wapley Common Junction – Bristol Parkway station (classic)
  - 2tphH Paddington – Carmarthen via Newport
  - = 2tph
  
20. Bristol Parkway station (classic) – Patchway Junction
  - 2tphH Paddington – Carmarthen via Newport
  - = 2tph
  
21. Patchway Junction – Severn Tunnel Junction
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphR Plymouth – Swansea
  - 2tphR Portsmouth Harbour – Cardiff Airport
  - 2tphR Plymouth – Stalybridge
  - = 8tph
  
22. Severn Tunnel Junction – Newport
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphH Paddington – Cardiff Airport via Gloucester
  - 2tphR Plymouth – Swansea
  - 2tphR Portsmouth Harbour – Cardiff Airport
  - 2tphR Cleethorpes – Cardiff Airport
  - 2tphR Plymouth – Stalybridge
  - = 12tph
  
23. Newport – Cardiff Central
  - 2tphH Paddington – Carmarthen via Newport
  - 2tphH Paddington – Cardiff Airport vis Gloucester
  - 2tphR Plymouth – Swansea
  - 2tphR Stalybridge - Swansea
  - 2tphR Portsmouth Harbour – Cardiff Airport
  - 2tphR Cleethorpes – Cardiff Airport
  - = 12tph
  
24. Pye Corner Junction – Bristol Parkway HS
  - 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Swansea via Birmingham
  - 2tphH Dover – Cardiff Airport
  - 2tphH Birmingham HS – Cardiff Airport
  - = 8tph

25. Bristol Parkway HS – Brentree Junction  
 2tphH Norwich – Swansea via London  
 2tphH Norwich – Swansea via Birmingham  
 2tphH Dover – Cardiff Airport  
 2tphH Birmingham HS – Cardiff Airport  
 2tphH Holyhead – Swansea via Birmingham Interchange  
 = 10tph
26. Brentree Junction – Cardiff HS  
 2tphH Norwich – Swansea via London  
 2tphH Norwich – Swansea via Birmingham  
 2tphH Dover – Cardiff Airport  
 2tphH Birmingham HS – Cardiff Airport  
 2tphH Holyhead – Swansea via Birmingham Interchange  
 2tphH Plymouth – Swansea  
 = 12tph
27. Cardiff (Central and HS) – Cardiff (Rhoose) Airport  
 2tphH Norwich – Swansea via London  
 2tphH Norwich – Swansea via Birmingham  
 2tphH Dover – Cardiff Airport  
 2tphH Holyhead – Swansea via Birmingham Interchange  
 2tphH Plymouth – Swansea  
 2tphH Birmingham HS – Cardiff Airport  
 2tphH Paddington – Carmarthen via Newport  
 2tphH Paddington – Cardiff Airport vis Gloucester  
 2tphR Plymouth – Swansea  
 2tphR Stalybridge – Swansea  
 2tphR Portsmouth Harbour – Cardiff Airport  
 2tphR Cleethorpes – Cardiff Airport  
 = 24tph
28. Cardiff (Rhoose) Airport – Ewenny South Junction  
 2tphH Norwich – Swansea via London  
 2tphH Norwich – Swansea via Birmingham  
 2tphH Holyhead – Swanses via Birmingham Interchange  
 2tphH Plymouth – Swansea  
 2tphH Paddington – Carmarthen via Newport  
 2tphR Plymouth – Swansea  
 2tphR Stalybridge – Swansea  
 = 14tph
29. Ewenny South Junction – Swansea (via Bridgend)  
 2tphH Paddington – Carmarthen via Newport  
 2tphR Plymouth – Swansea  
 2tphR Stalybridge – Swansea  
 = 6tph

30. Ewenny South Junction – Swansea (HS4 direct)
- 2tphH Norwich – Swansea via London
  - 2tphH Norwich – Swansea via Birmingham
  - 2tphH Holyhead – Swanses via Birmingham Interchange
  - 2tphH Plymouth – Swansea
- = 8tph