

Appendix

Detail on Rail aspects of the proposition

Meeting with DfT - 3rd June 2008

Context - train services at major European airports

0700 – 0759 on a weekday, Summer 2008.

Frankfurt airport has two stations

- The main line station typically has 7 long distance trains per hour. Most are High Speed ICEs. Destinations include Koln, Amsterdam, Hamburg, Nurnberg, Munich, Vienna, Stuttgart and Basel.
- Frankfurt's regional station has 7 local trains each hour

Paris CDG has a range of long distance services

- Destinations vary from hour to hour. The 4 trains in the hour from 0700 run to Lyon, Bordeaux, Brussels and Strasbourg. It also has a regional service with frequent trains into Paris

Schipol's railway station has direct train services to many towns in Holland

- It is served by 3 InterCity and 17 regional trains each hour. The InterCity destinations include Brussels

Heathrow, whilst it has good links to central London, is poorly served now in comparison.

With the Hub (also Crossrail and Airtrack), the airport would gain a range of long distance and regional services to at least match the (current) best in Europe

Heathrow Hub phases of development: Rail aspects

In our proposition, the initial phases create the Hub

1. New station on GWML
2. New High Speed Line from St Pancras/Euston into Heathrow Hub

Phase 3 would be the extension of the HSL from the Hub to the

- Midlands and
- North

Phase 1 - new station on GWML: Services

Long distance services:

- Principle is that, apart from the commuter peaks (when many trains are already full), all existing GWML trains will call
- 8 or more existing fast trains each hour, serving Reading, Oxford, Swindon, Bath, Bristol, Cardiff, Swansea, Taunton, Exeter, and the south west
- Potential for minor service changes to bring in hourly Birmingham trains
- Unlikely to have much capacity on GWML peak long distance services for air passengers and their baggage between the Hub and Paddington

Regional and local services:

- All trains will call
- Crossrail's Maidenhead (Reading?) branch provides the principal local service
- Apart from the high peaks, potentially lots of capacity on these trains

Phase 1 - new station on GWML: Necessary infrastructure

- Site for the station on GWML between West Drayton and Iwer stations
- Site is virtually straight, no severe gradients, has good length and width
- Multi platform station, providing paired platform faces for each of the “Main” and “Relief” lines, so 8 platforms initially - very high capacity
- Junctions approaching and leaving the platforms on the braking and acceleration curve of the trains
- Through “fast” lines, for non-stopping trains
- Station interchange concourse above the wide island platforms, with good vertical circulation for pedestrians and baggage

Fit of Hub Phase 1 with other rail developments

Our scheme will provide the Hub rail station and associated infrastructure.

Feature	Compatibility	Heathrow Hub addition?
Long distance train services to existing GWML destinations	Yes	
New long distance service to Birmingham	Yes	Extend the existing Manchester – Birmingham – Reading Cross Country service through to Paddington, calling at the Hub
Crossrail from central London to the Hub then through Slough to Maidenhead	Yes	
Crossrail extended to Reading	Yes	Business case for Crossrail extension improved
New Great Western long distance rolling stock	Yes	
Renewal of 1960s signalling through the Hub area	Yes	
ERTMS next generation signalling	Yes	
Capacity (in its broadest sense) at Paddington	Yes	
Capacity at Reading for close-flighted trains	Yes	

Phase 2 - new HSL from St Pancras/Euston: International services

Two international trains each hour could run from the Hub

These could allow hourly high speed trains to provide a direct link from Heathrow calling at Stratford then to Paris, Lille, Brussels, Rotterdam, Schipol airport and Amsterdam

The international trains also provide “one change” journey opportunities, including at:

- Lille, for Paris CDG and other destinations in and via France, and
- Brussels, for links to north west Germany and Luxembourg

Phase 2 - new HSL from St Pancras/Euston: Domestic services

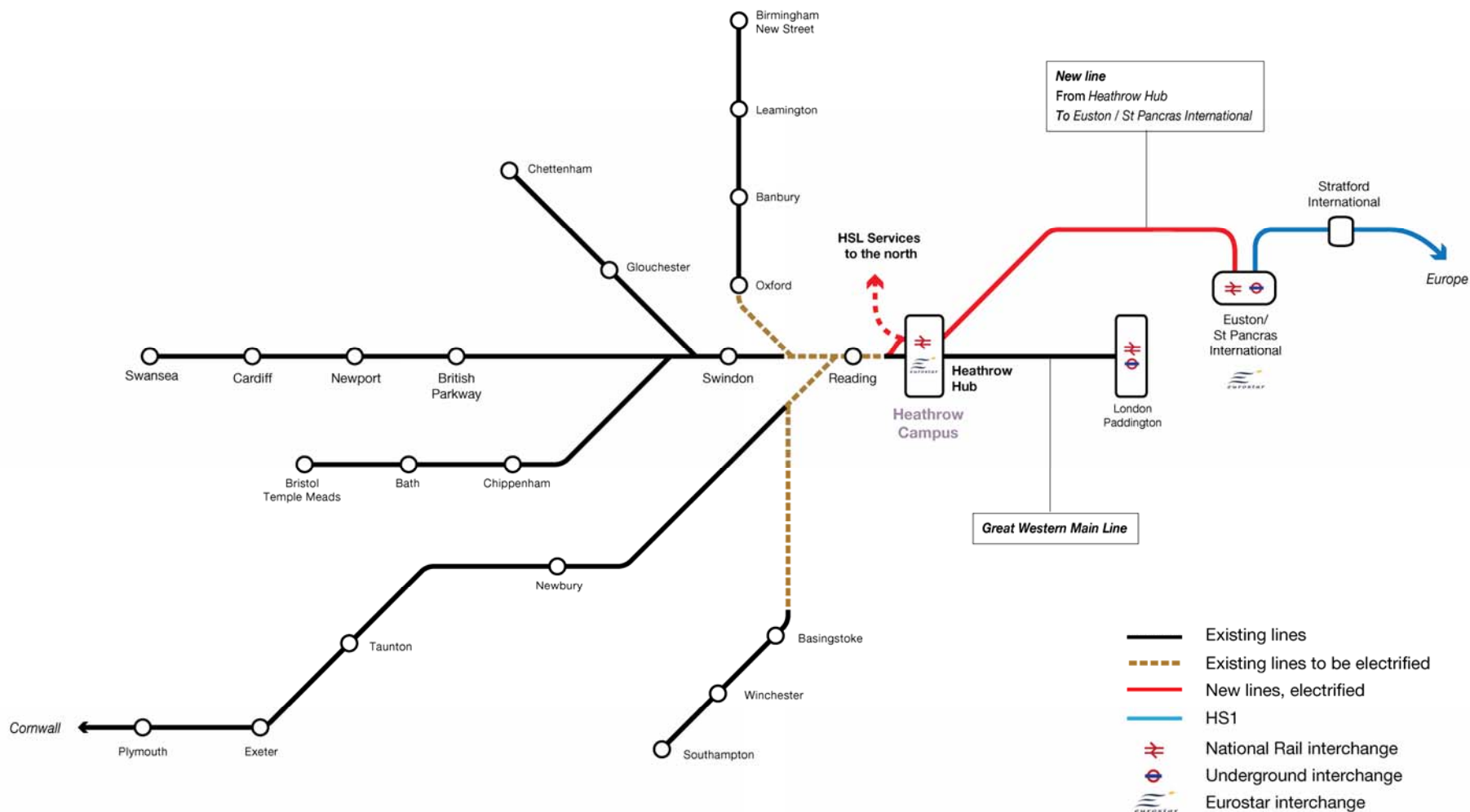
New airport and regional express service to central London:

- 4 trains per hour express service (for airport and regional travel) to a central London terminal - we propose Euston - with a journey time of 17 minutes
- Provides both very fast links and additional capacity - for Heathrow and other domestic rail passengers
- Services would be formed of modern high capacity electric trains and will be open to all passengers
- Could be further benefits if passenger circulation links between Euston, St Pancras and King's Cross are improved

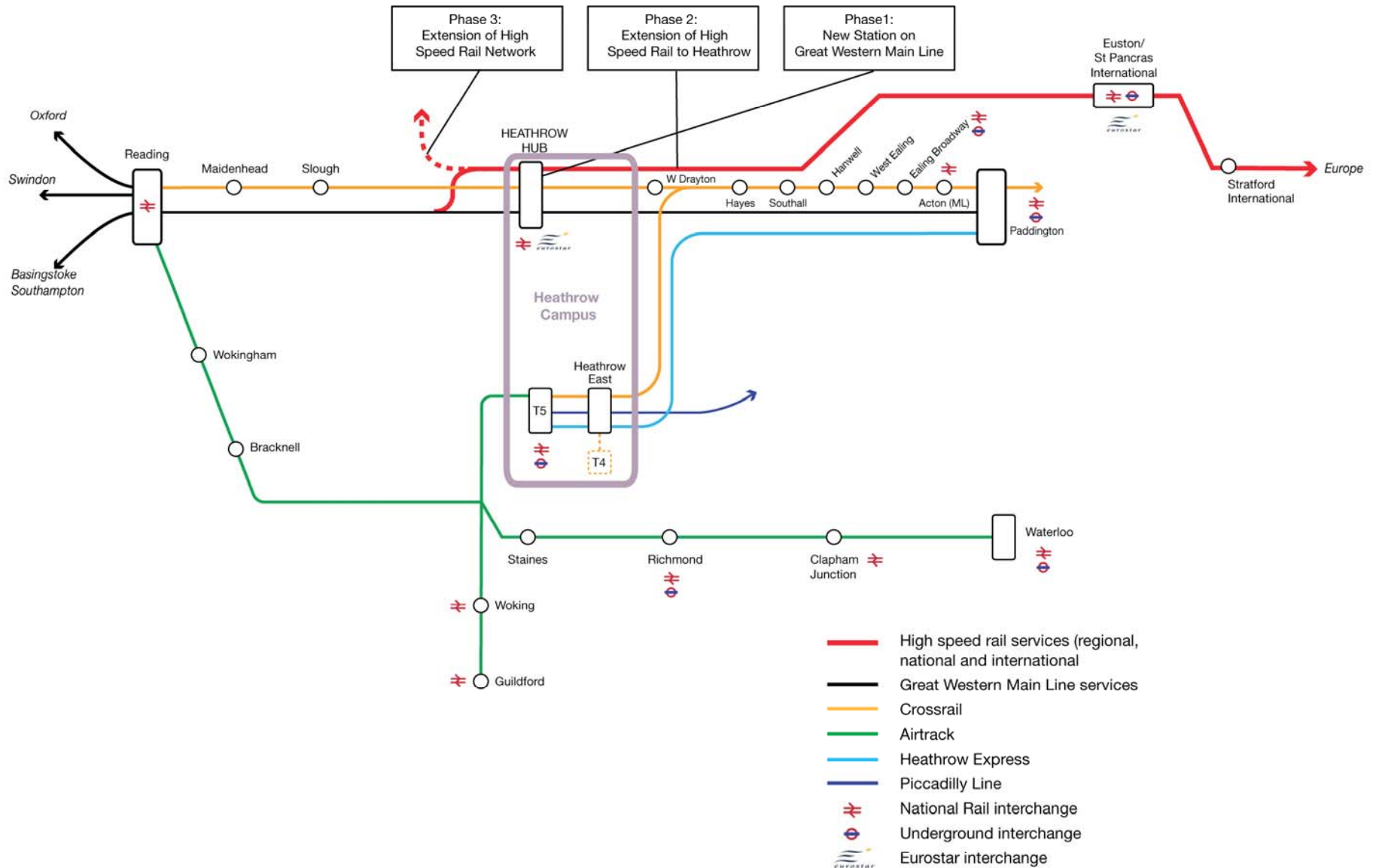
Extension of the airport and regional express service:

- 2 trains each hour to Reading and Oxford, providing higher frequency and new direct linkages, and
- 2 trains each hour via Reading to the M3 corridor - Basingstoke, Winchester, Southampton

We expect the Hub will become a major interchange



Phases 1 & 2 – Potential Inter Regional Services



Phases 1 & 2 - Potential South-East rail services



Phase 2 - new HSL from St Pancras/Euston: Necessary infrastructure

This is the scheme we have investigated:

- Upgraded link from the present London end portal of the CTRL London tunnel north of St Pancras to the West Coast Main Line, where there will be a new tunnel portal (“Eastern Tunnel Portal Junction”)
- Capacity enhancement from Euston station to the Eastern Tunnel Portal Junction
- Tunnelled route under sections of the West Coast and GW Lines to a new Western Tunnel Portal, on the Hub side of West Drayton station and just north of the existing GWML
- Construction of a northwards extension of the Hub station, to take both Domestic express and International trains
- Grade separated junctions near Iwer station, to allow Domestic express trains to leave/ join the GW Main Lines

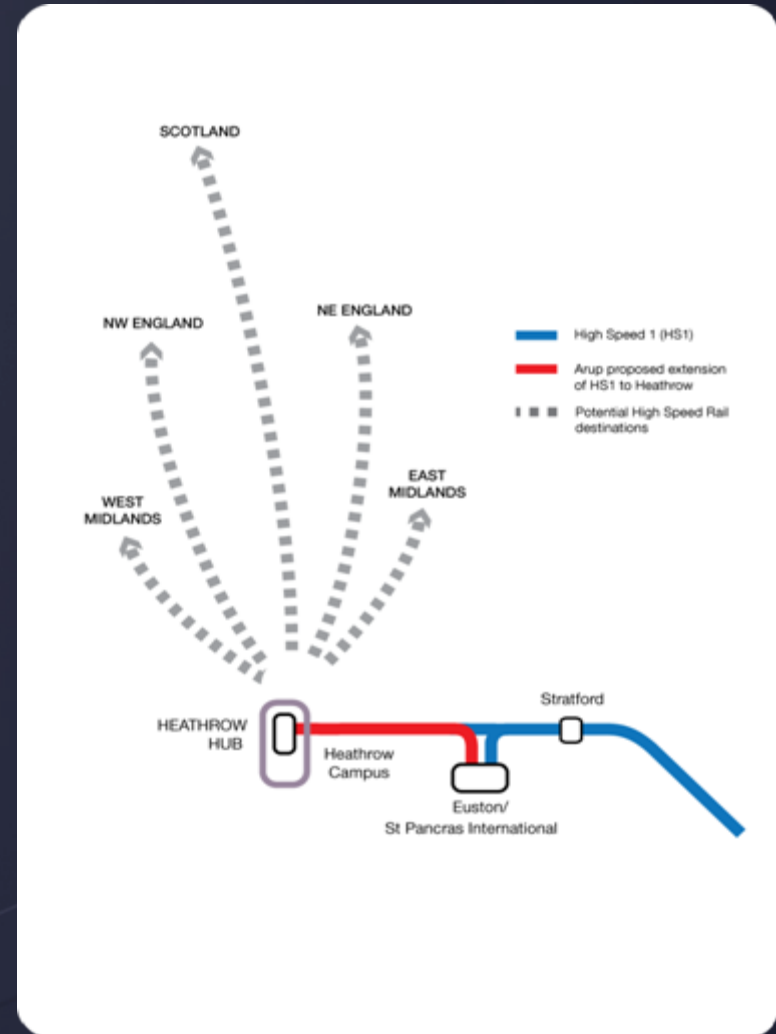
Fit of Hub Phase 2 with other rail developments

Feature	Compatibility	Heathrow Hub addition?
Designation of 2 train paths each hour on the CTRL and through the Channel Tunnel for “inter-regional” international trains	Uses the paths which should be available	Needs to provide a stepping stone towards meeting the aspirations of the English regions and Scotland?
Capacity at Euston or St Pancras for Heathrow trains	Opportunity probably missed at St Pancras. Euston station redevelopment link	Improves Network Rail’s business case for investment and property contributions at Euston
Use of GWML Main Lines for the new airport and regional express trains from Euston via the HSL extended to Reading	Yes	See this as a DfT-sponsored franchised train service
Capacity at Reading for the new airport and regional express service	Yes	Business case strengthened by the Hub proposal
Electrification from Reading to Oxford and to Basingstoke	Yes	Business case strengthened by the Hub proposal

The Hub will have some impact on the business case for the Airtrack project, which will have a marginal loss of traffic via Reading itself. The case for the rest of the Airtrack project should be unaffected

Phase 3 – Potential High Speed Services

- Heathrow Hub is capable of being linked into a future Domestic HSL network
- The HSL platforms of the Hub station would be on the north side of the Great Western Main Line
- A future extension of the Phase 2 route from the Hub station, as a new HSL heading north, would leave the Hub site from its western edge and curve north



Phase 3 - HSL extended northwards from the Hub: Services

International:

- In our Phase 2 plan, the international trains would start from the Hub. In Phase 3 they would gain excellent convenient interchange at the Hub with the domestic long distance high speed (“LDHS”) trains from the Midlands and North
- It may be possible for direct trains to operate to the English regions and Scotland, but there are many technical difficulties

Domestic:

- The London terminal for domestic LDHS services is for discussion – Euston?
- We envisage that, apart from the high peaks, all domestic LDHS trains will call at the Hub, but not to handle Hub to London traffic (which would be directed to the 4 trains per hour airport and regional express service)
- Therefore, frequent High Speed trains would run from the Hub to Birmingham, Manchester and other destinations as the network developed

We expect the Hub will be used by many domestic rail passengers from west London, the M3 and M4 corridors and the Thames Valley to access the LDHS services

Phase 3 - HSL extended northwards from the Hub: Infrastructure

- Because of the location and size of the Hub site, it is capable of accommodating an HSL on a route from London to the Midlands and North
- The Hub station can be extended to the north, providing additional platforms – we have assumed 4 - to serve the HSL

Our point is that the value of UK High Speed rail will be enhanced if, at the outset, the principal north - south route is via Heathrow.

Implications for the rail network within and around Heathrow

There are potentially significant implications for the railway within Heathrow:

- Internal land side passenger and staff movements
- HEX – including the opportunity to re-equip with 125 mph rolling stock, reroute from Paddington via the Hub and a new link down into T5 and then HET to create the ‘Heathrow spine railway’
- Crossrail
- Airtrack
- Serving central area/ Heathrow East, T4, T5, T6,

There are, potentially, benefits for GWML capacity in reconsidering the role of HEX

The Hub provides an opportunity to improve the utilisation of Main and Relief line capacity between Paddington, Airport Junction (Hayes), the Hub and Reading

HeathrowHub

