

HIGH SPEED UK

..connecting in London

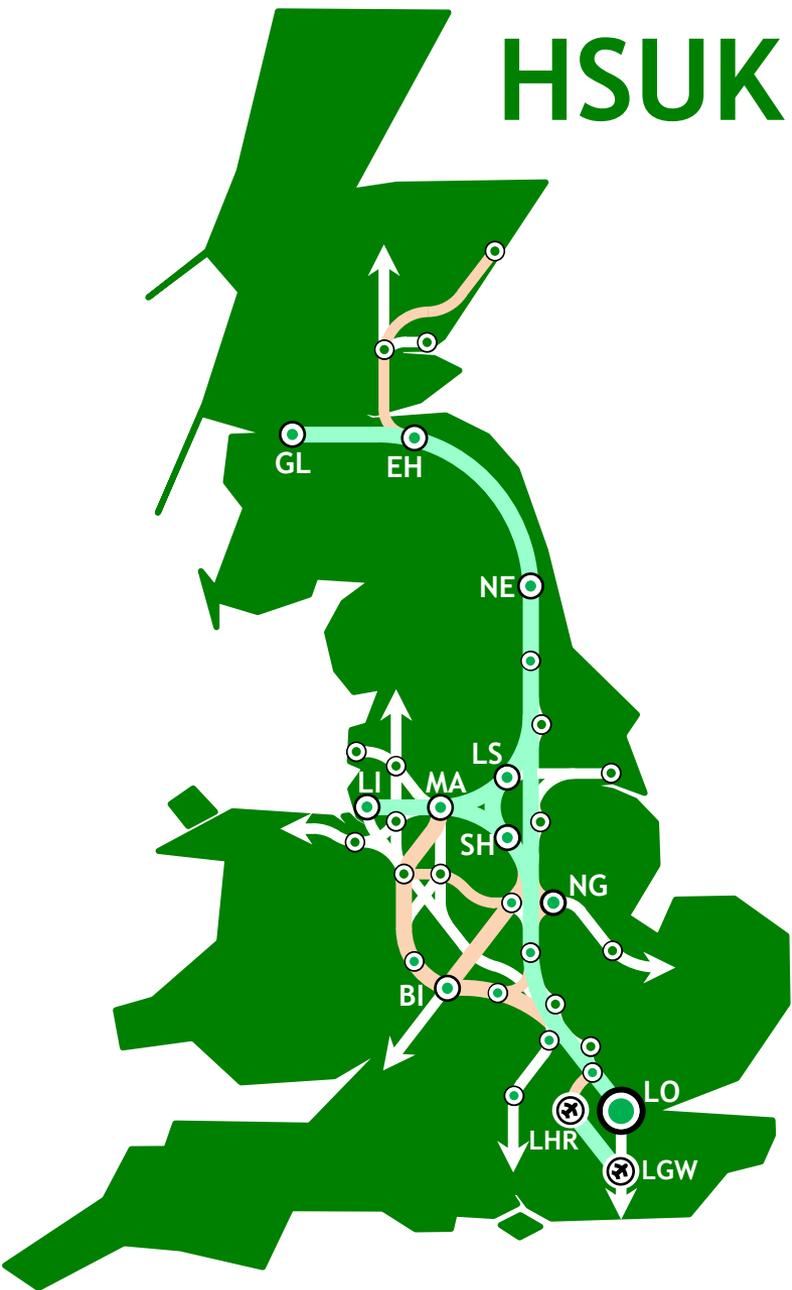
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HSUK



HS2+3



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High Speed Rail in London

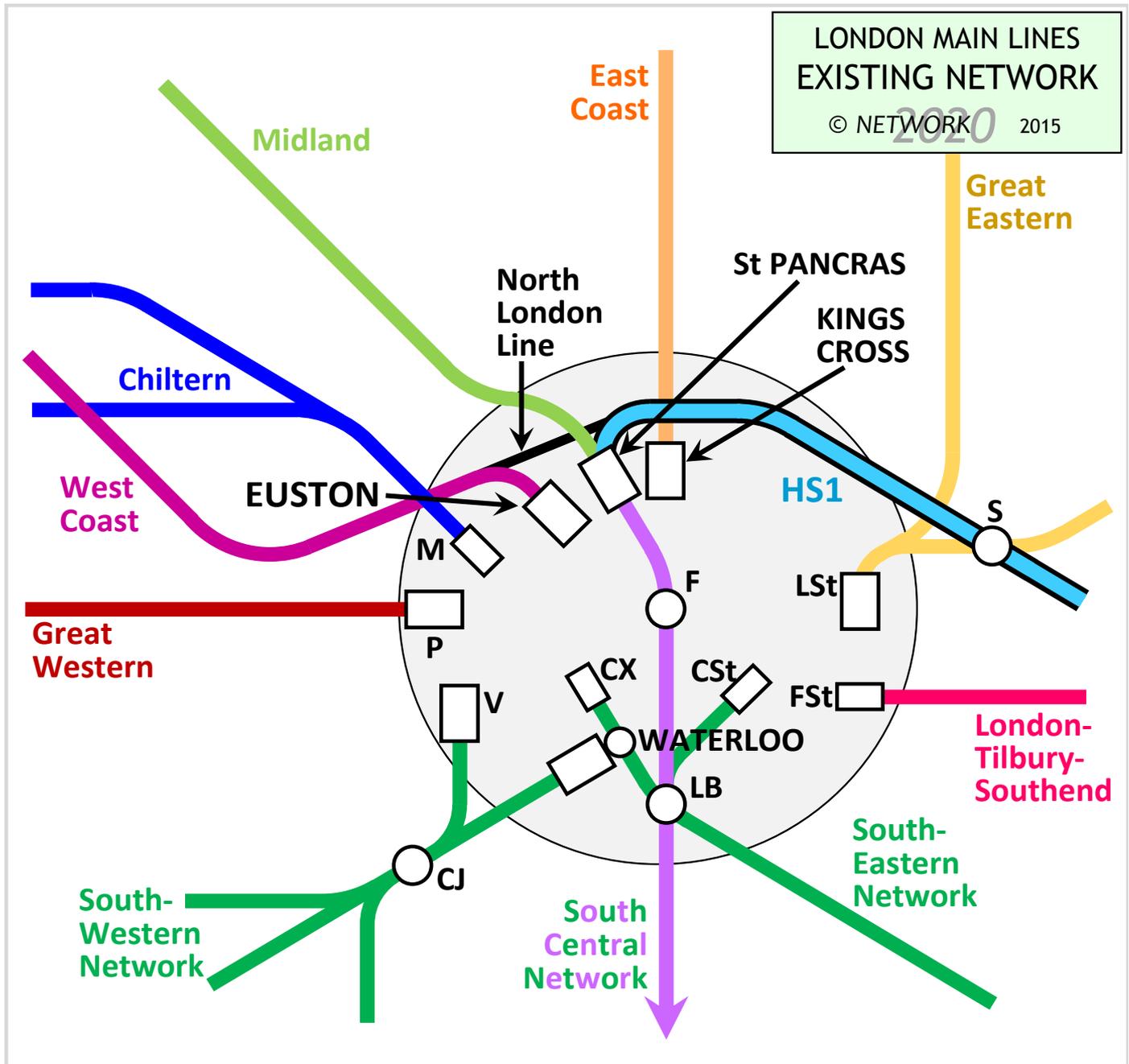


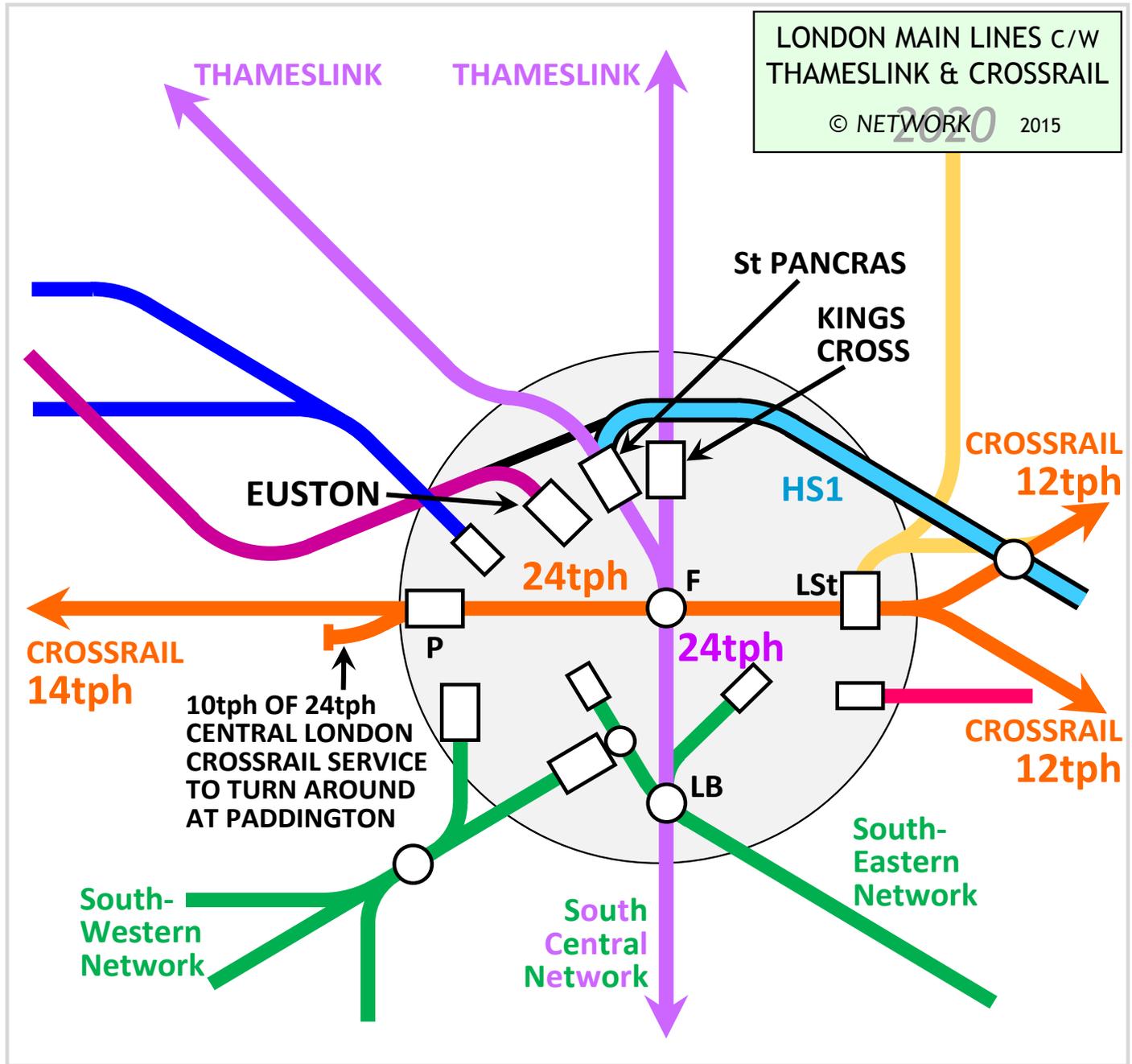
4 Key Objectives

- Regions linked to central London
- Regions linked to the wider Metropolitan area
- Regions linked to Heathrow
- Regions linked to HS1

2 Key Questions

- Where do we put the principal station?
- What extra lines are needed to facilitate this?





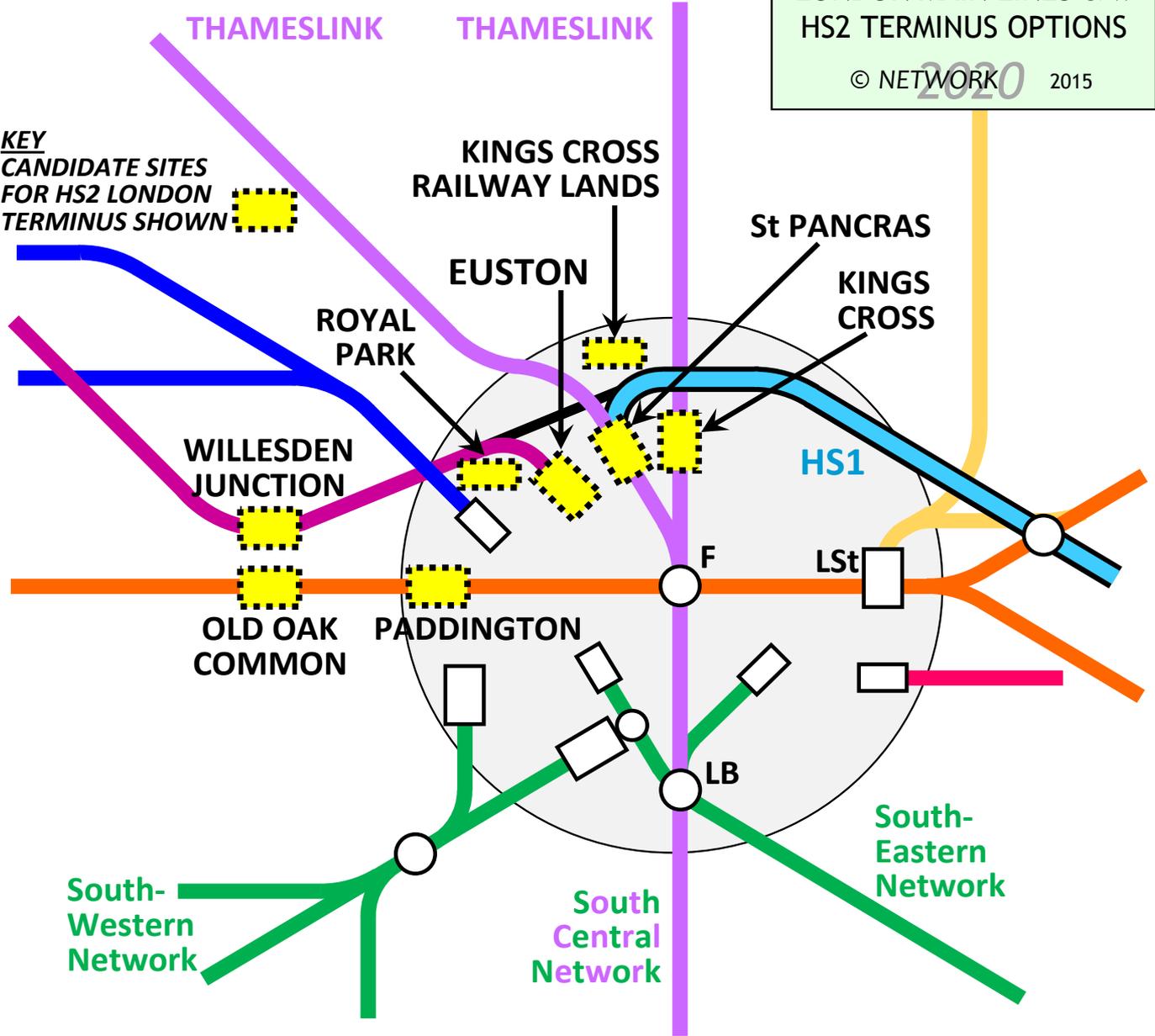
High Speed Rail in London

Primary Requirements for Principal Station

- Central London location for Tube & HS1 links
- Probably a terminus station
- Preferably on the surface
- Minimum impact on the neighbourhood both:
 - During construction works and
 - In daily operation

Only practical location is at an existing mainline station. Problem - they are already full of trains!

KEY
CANDIDATE SITES
FOR HS2 LONDON
TERMINUS SHOWN



High Speed Rail in London



HS2 looked for a
Principal Station at:

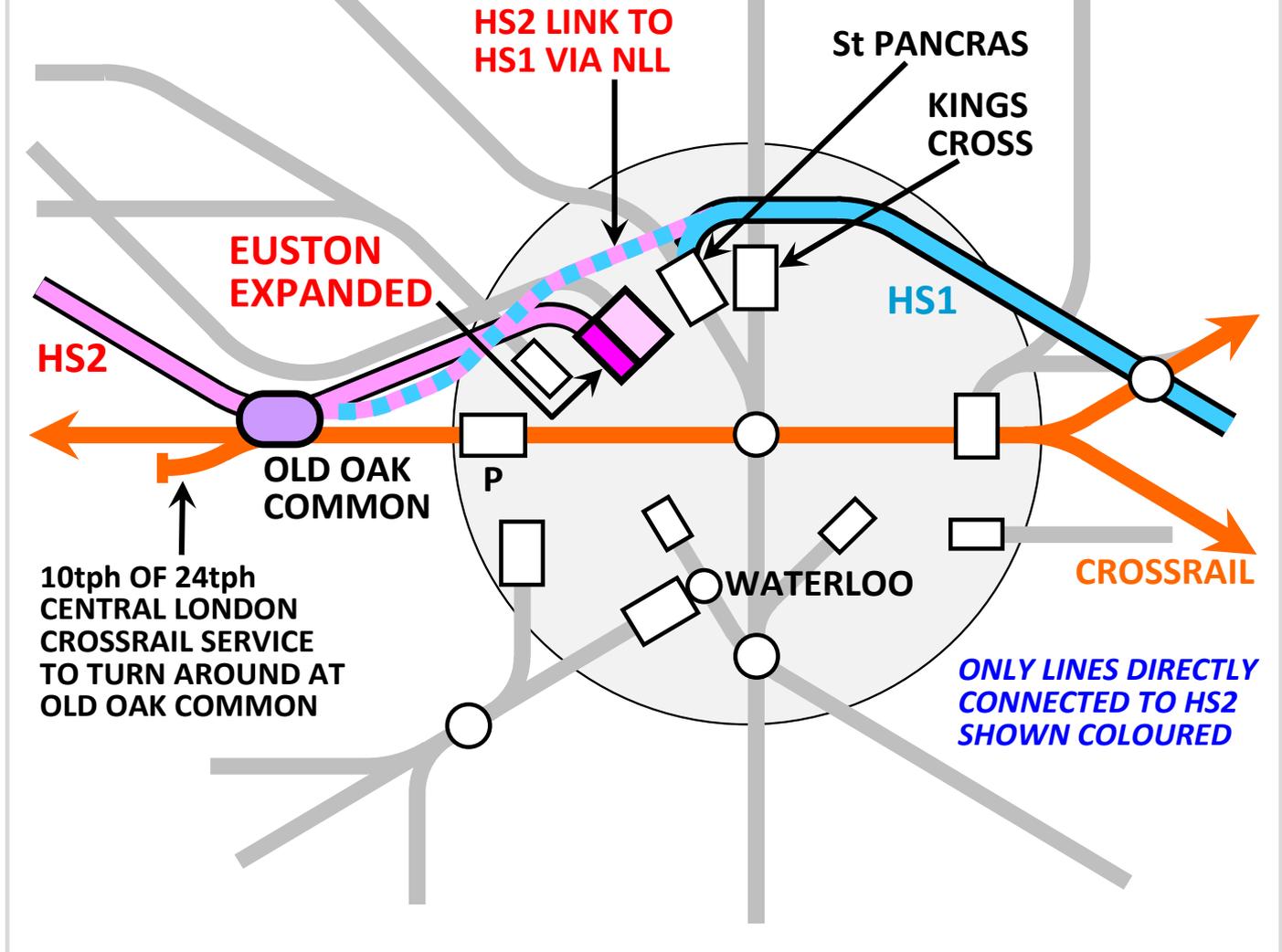
- Willesden Junction
- Old Oak Common
- Paddington
- St Pancras
- Kings Cross
- KX Railway Lands
- Beneath a Royal Park

High Speed Rail in London

HS2 looked for a
Principal Station at:

- Willesden Junction
- Old Oak Common
- Paddington
- St Pancras
- Kings Cross
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- Beneath a Royal Park

- And at **Euston** which
 - Meets most criteria but:
 - Its Tube links are mediocre, and
 - It is not connected to Crossrail or Thameslink

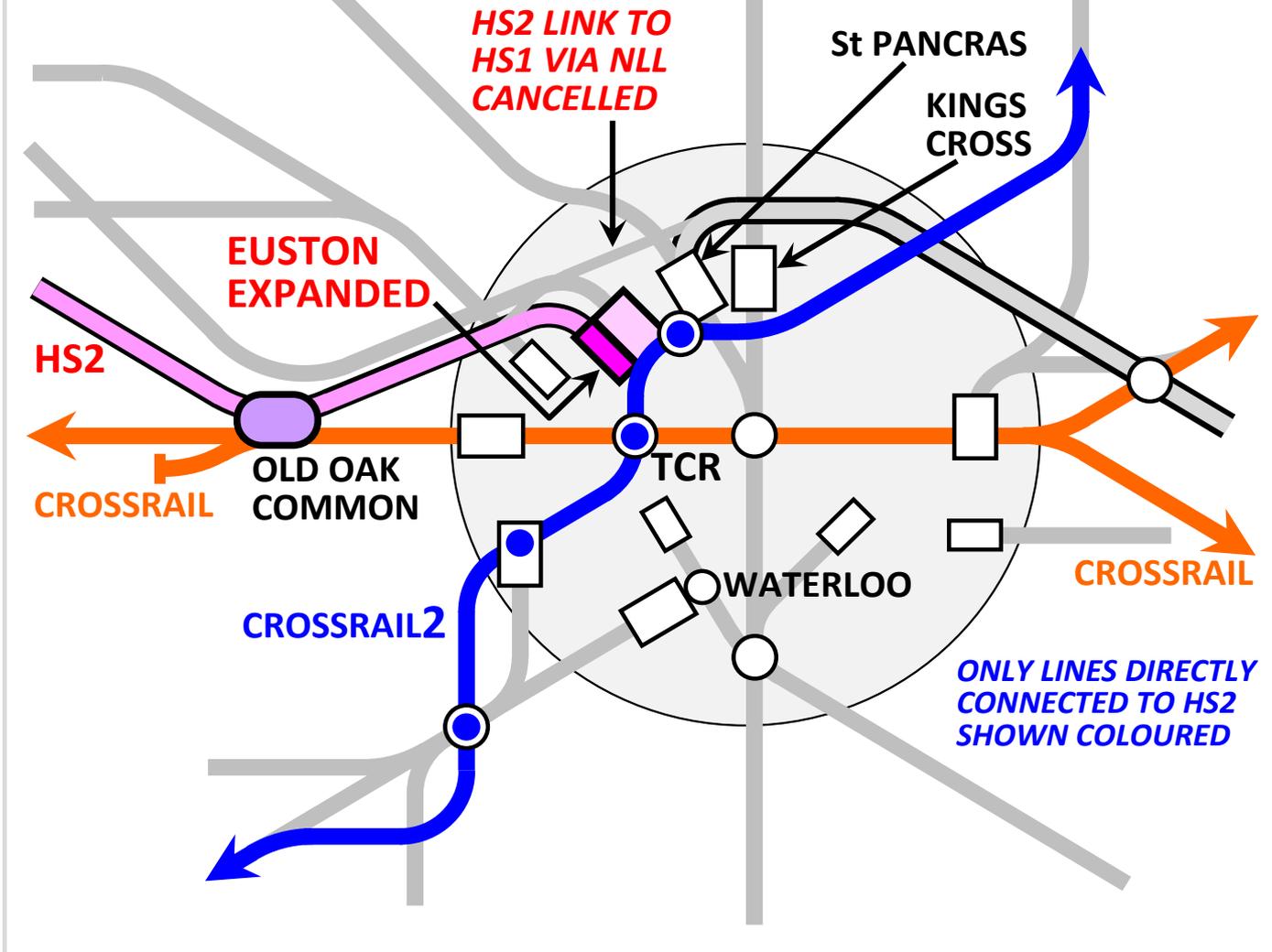


High Speed Rail in London



Original HS2 Proposals

- Terminus at Euston
- No significant improvement to Tube links other than to Euston Square for Circle and Metropolitan
- Supplementary interchange at Old Oak Common for connections to Heathrow and Crossrail
- Large area of London still disconnected
- HS2 to HS1 link very controversial because of significant environmental damage and high cost

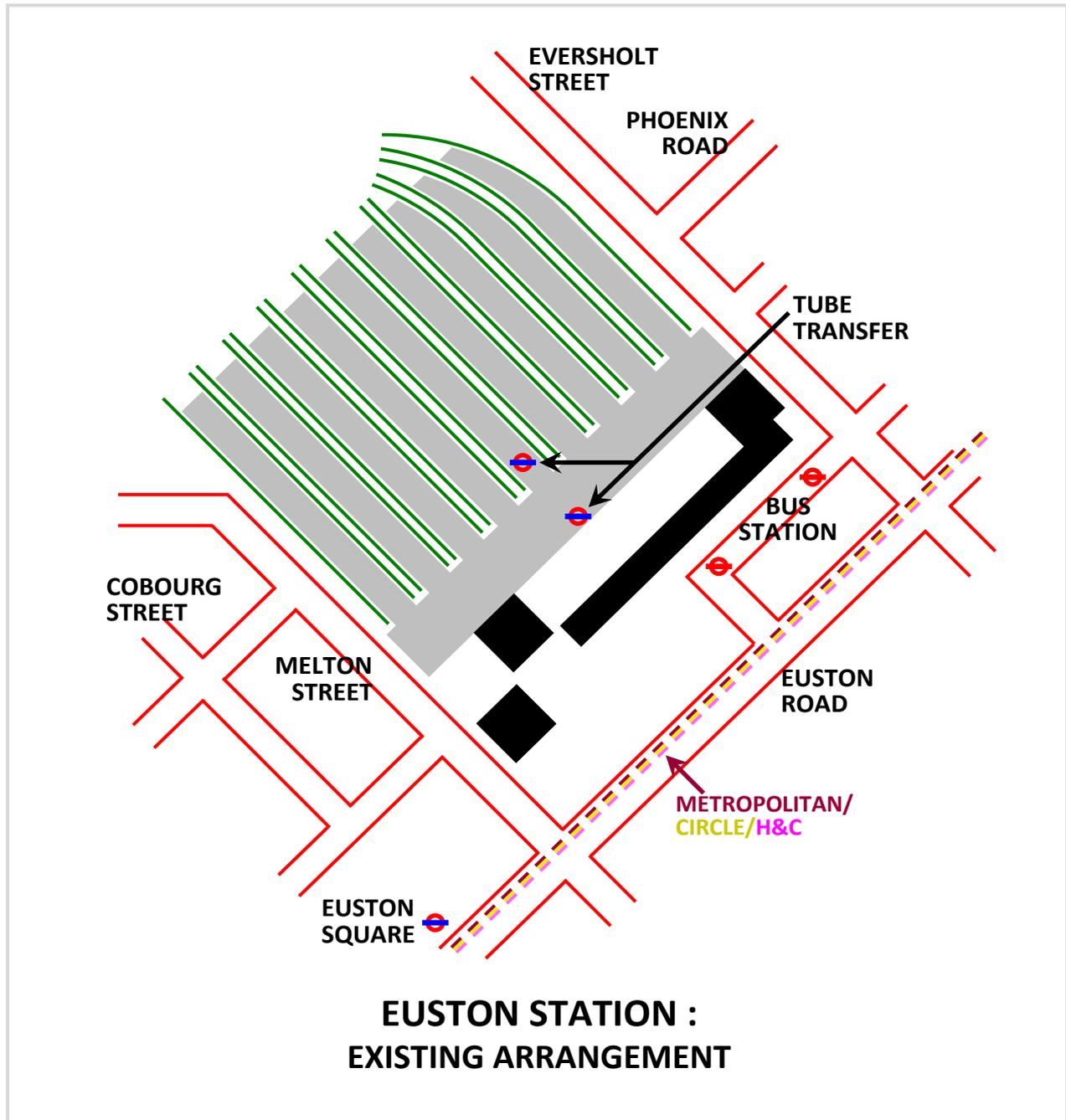


High Speed Rail in London



Current HS2 Proposals

- HS2 to HS1 link cancelled
- Transfer to/from St Pancras by taxi, tube, bus or foot
- Crossrail 2 which adds another £16 billion to the bill
- Large area of London still disconnected
- Still requires a 60 metre widening of Euston station to the west

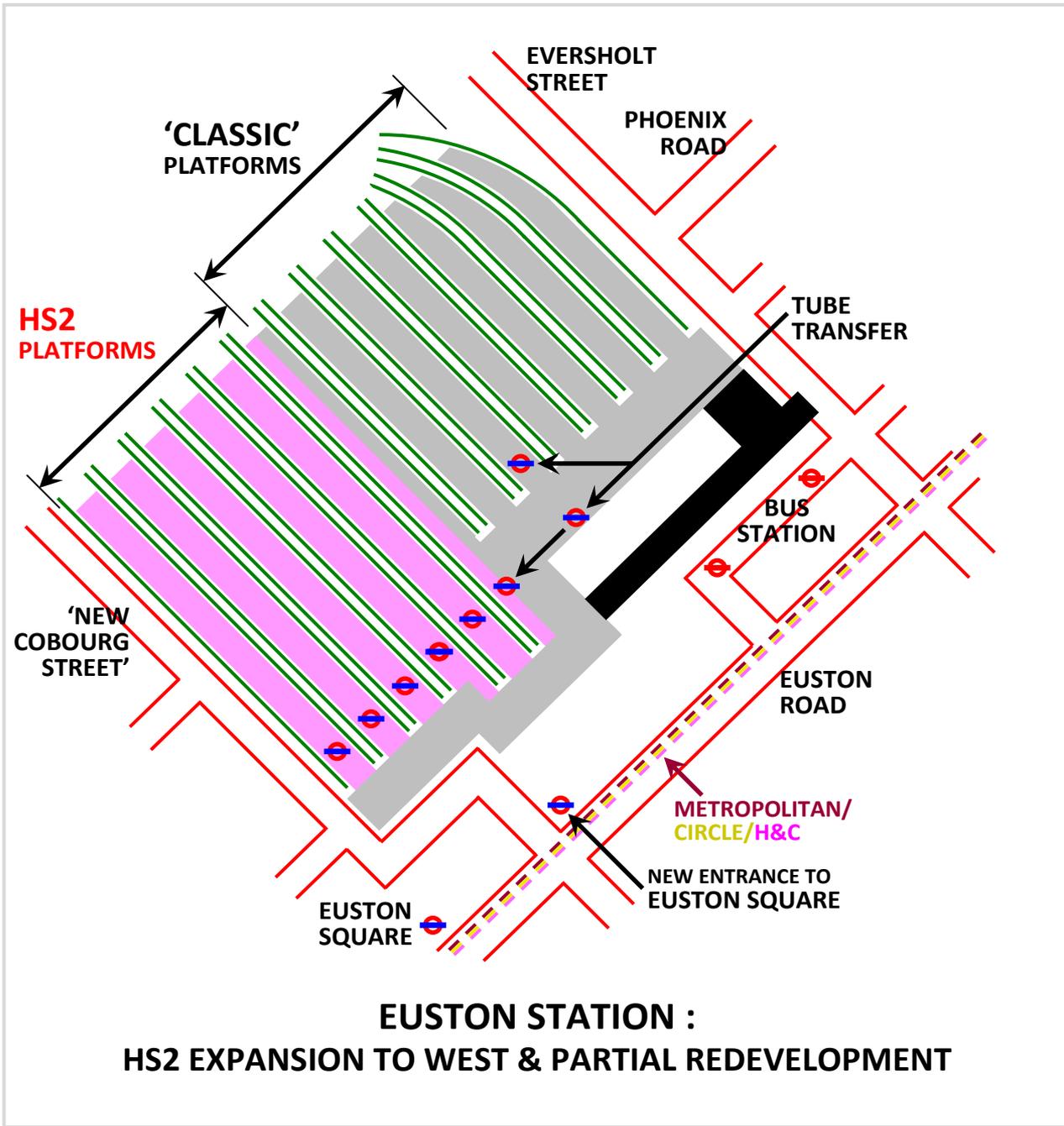


High Speed Rail in London



Current services at Euston

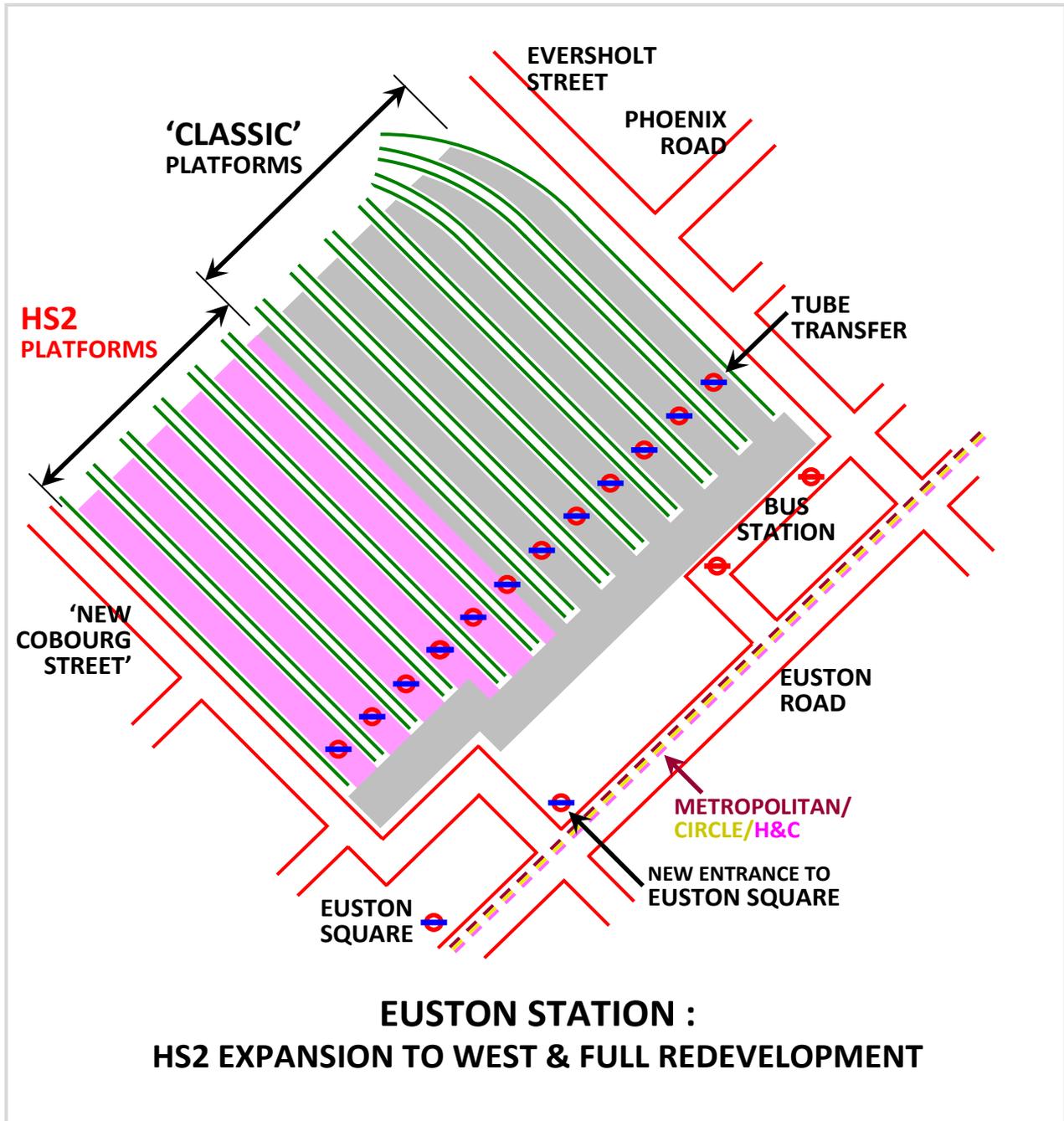
- 18 Existing platforms – 2 used by Watford DC electrics
- Hourly off peak services – 19 trains per hour
 - 9 Virgin, 7 London Midland, 3 Watford DCs
 - That is just over 1 train per platform per hour!
- Hourly peak services – 25 trains per hour
 - 10 Virgin, 12 London Midland, 3 Watford DCs
 - That is 1.4 trains per platform per hour
- As a rule of thumb a single platform can turnaround:
 - 2 trains per hour with full catering facilities
 - 3 trains per hour with catering trollies
 - 4 trains per hour with no catering trollies
- **Euston is hardly ticking over**



High Speed Rail in London

HS2 Proposals for Euston Station Alterations

- Either partial or full reconstruction
- Run existing services (HS2 says 24 tph in peak) from 13 platforms
 - That is 1.85 trains per platform per hour
- Build a new High Speed station with 11 platforms to serve 18 trains per hour
 - That is 1.64 trains per platform per hour
- Remember the rule of thumb for a single platform:
 - 2 trains per hour with full catering facilities
 - 3 trains per hour with catering trollies
 - 4 trains per hour with no catering trollies
- **Euston is still hardly ticking over**



High Speed Rail in London

Alternatives to westward expansion?

- Double deck by building a second deck on top?
- Double deck by building a second deck underneath?
- Euston Cross underground station?

All of these solutions are far from ideal because they are:

- Very expensive, very disruptive and still leave Euston badly connected and isolated

High Speed Rail in London

Alternatives to westward expansion?

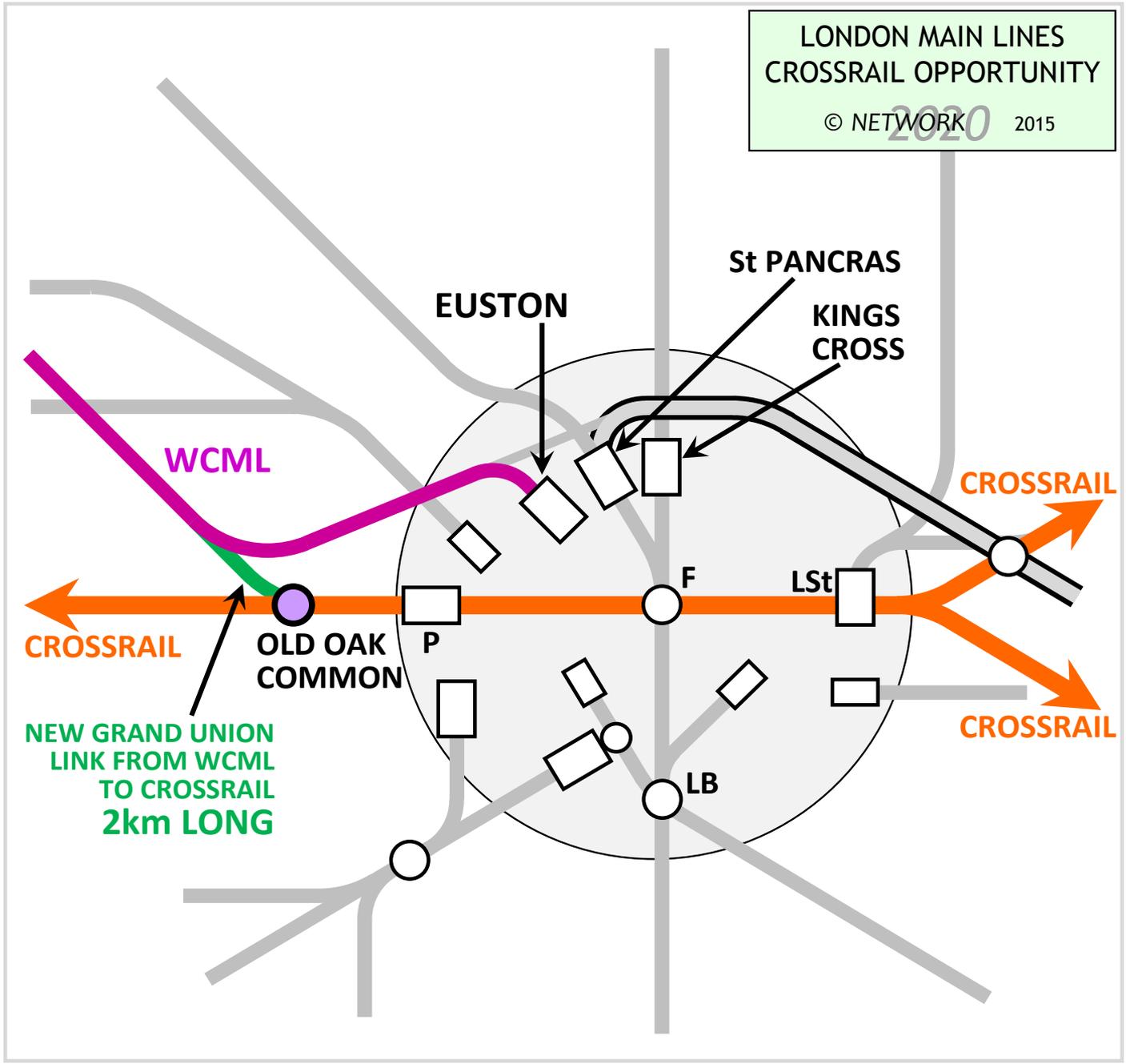
- Double deck by building a second deck on top?
- Double deck by building a second deck underneath?
- Euston Cross underground station?

All of these solutions are far from ideal because they are:

- Very expensive, very disruptive and still leave Euston badly connected and isolated

The alternative is obvious but dismissed by HS2

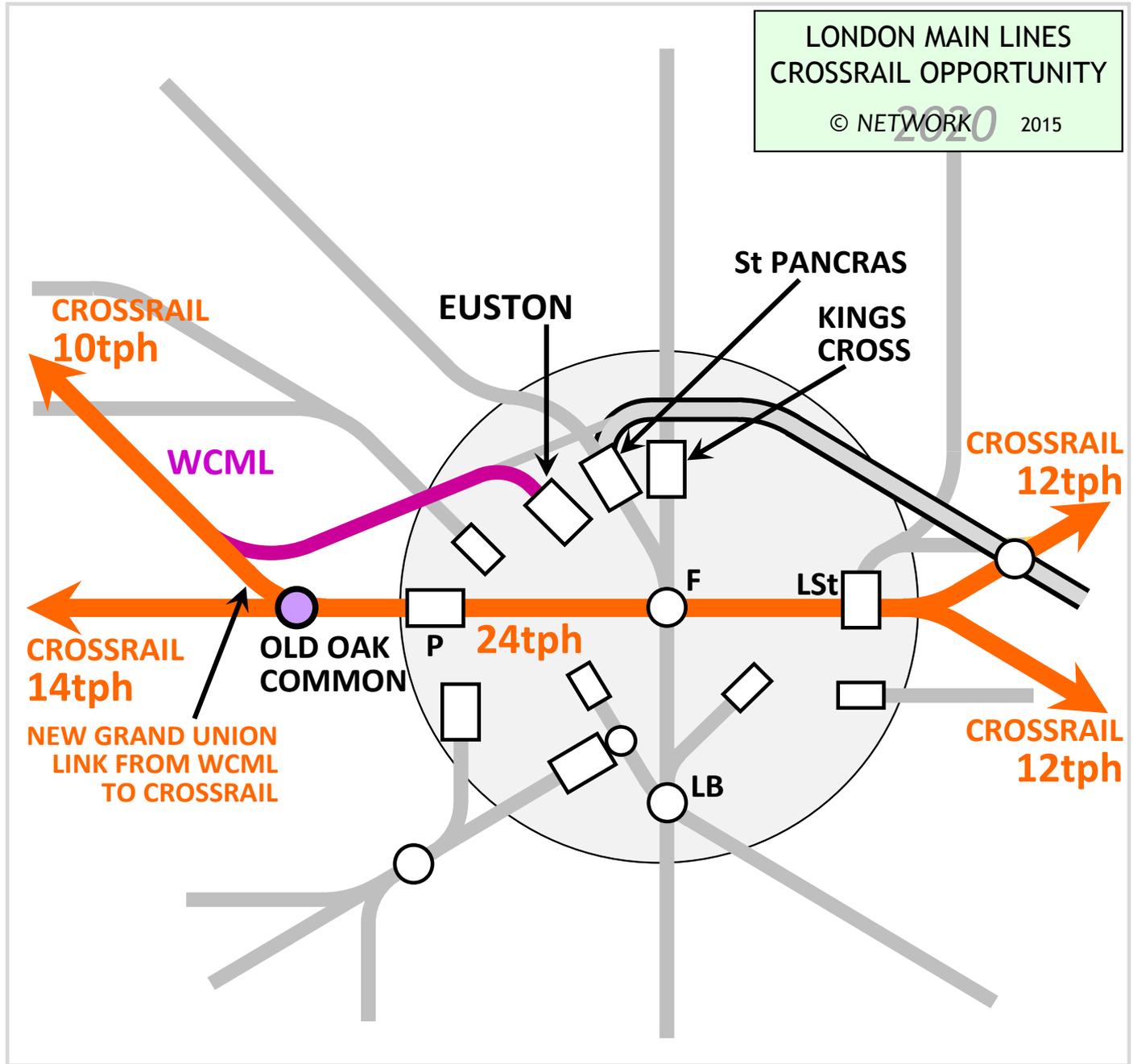
- Divert the LM services and Watford electrics to **Crossrail**
- Euston just handles WCML residual services and HSUK



High Speed Rail in London

Crossrail Opportunity – The Grand Union Link

- Short surface link from Old Oak Common to Harlesden on the WCML connecting to both the Slow lines and the Watford DC Electric lines
- 2 km in length, no serious obstacles
- London Overground and London Midland services diverted to Crossrail
- 10 trains per hour on Crossrail planned to reverse at Old Oak Common, instead can access the WCML
- Great improvement to commuter journeys
- Euston becomes mostly an intercity terminus

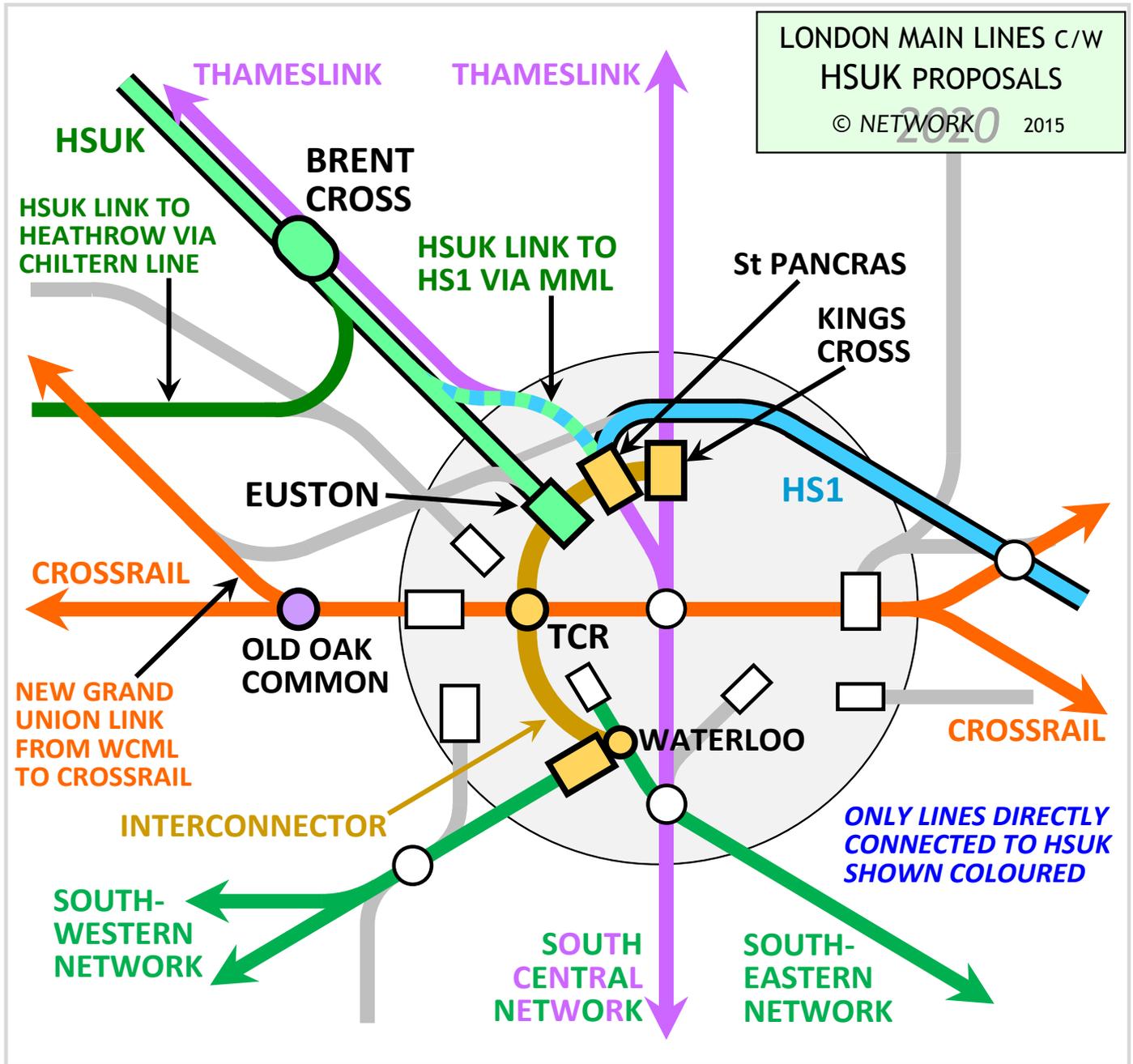


High Speed Rail in London

HS2's reasons for not diverting to Crossrail

- 4km tunnel required from Old Oak Common to Wembley – *simply not necessary*
- Impacts on residential property – *not on our route*
- 4 years to construct – *hardly*
- Programming difficulties – *only with HS2 Old Oak Common box*
- £600M cost – *HSUK notional cost £100M*
- It would not avoid the need to expand Euston – ??

They just did not want to do it!!



High Speed Rail in London

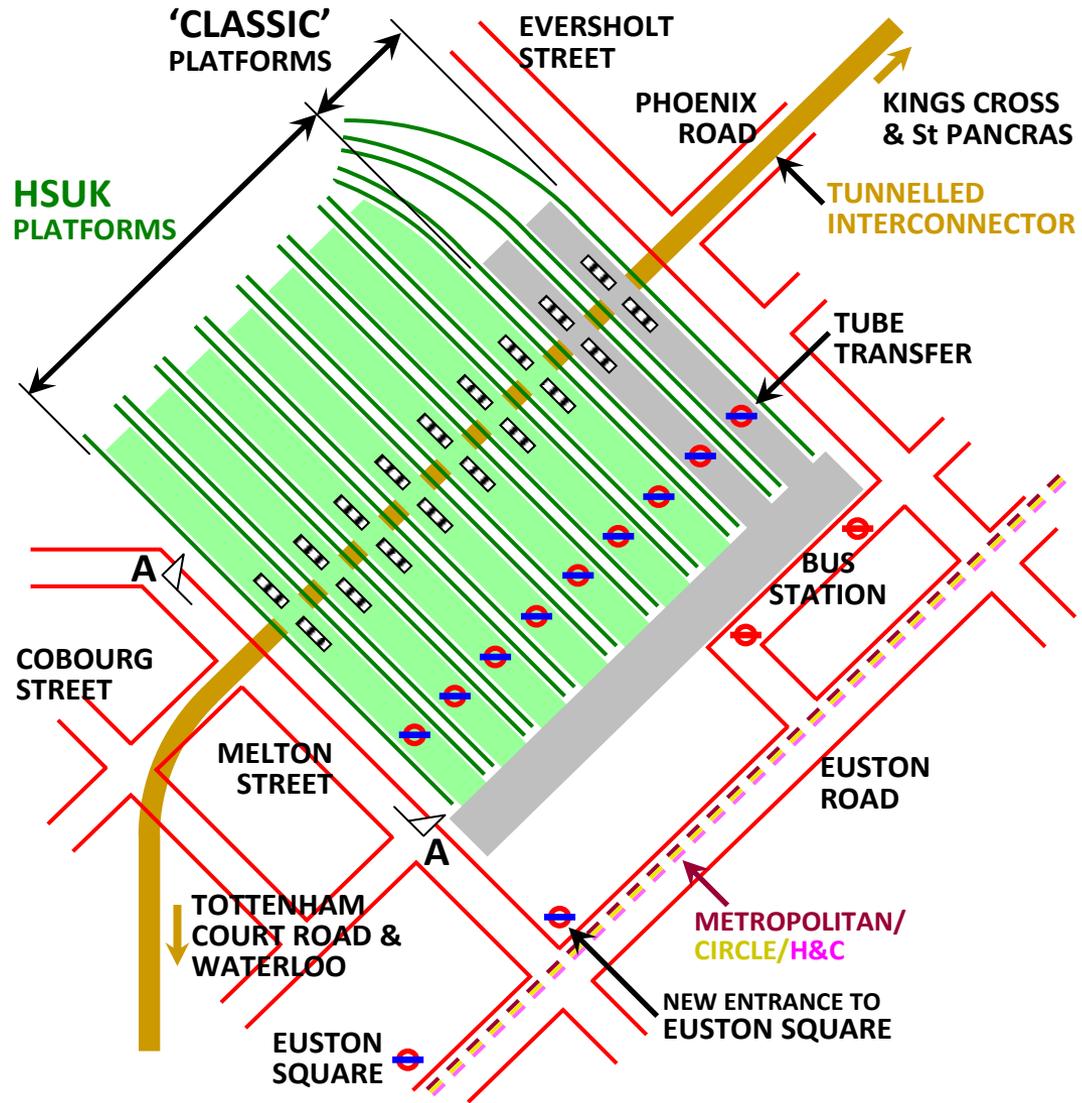
HSUK Proposals for London

- Euston to be the primary London terminus
- HSUK also linked to St Pancras via Midland Main Line
- Suburban station at Brent Cross providing interchange with Thameslink and Heathrow services
- Direct route from HSUK at Brent Cross to Heathrow Express platforms at LHR – through trains from North
- WCML suburban services diverted to Crossrail via the new 2km Grand Union Link (Old Oak Common to Harlesden)
- No need to expand Euston outside the existing footprint
- Interconnector for seamless dispersal of passengers to Crossrail, Thameslink, HS1 & Southern network services

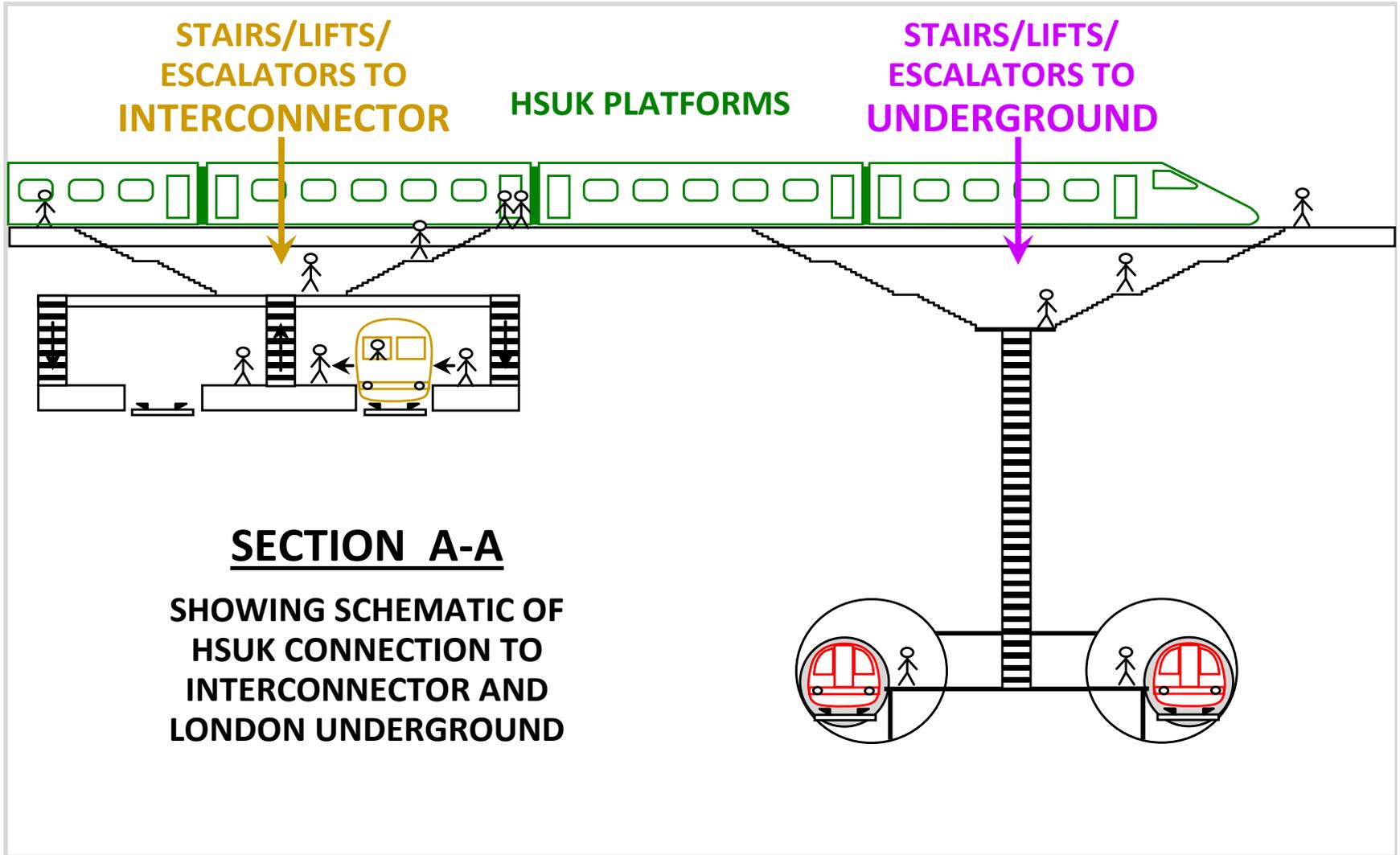
High Speed Rail in London

The HSUK vision for Euston Station

- All construction is within the existing station footprint
- Still 18 platforms
- 14 platforms 400 metres long
- 4 platforms 280 metres long
- New passenger departure deck above the platforms
- Interconnector access at mid platform with Interconnector directly below the trains
- New entrance to Euston Square station with underground travelator connection
- Euston Gardens and Melton Street unaffected



EUSTON STATION :
HSUK REDEVELOPMENT WITHIN EXISTING FOOTPRINT

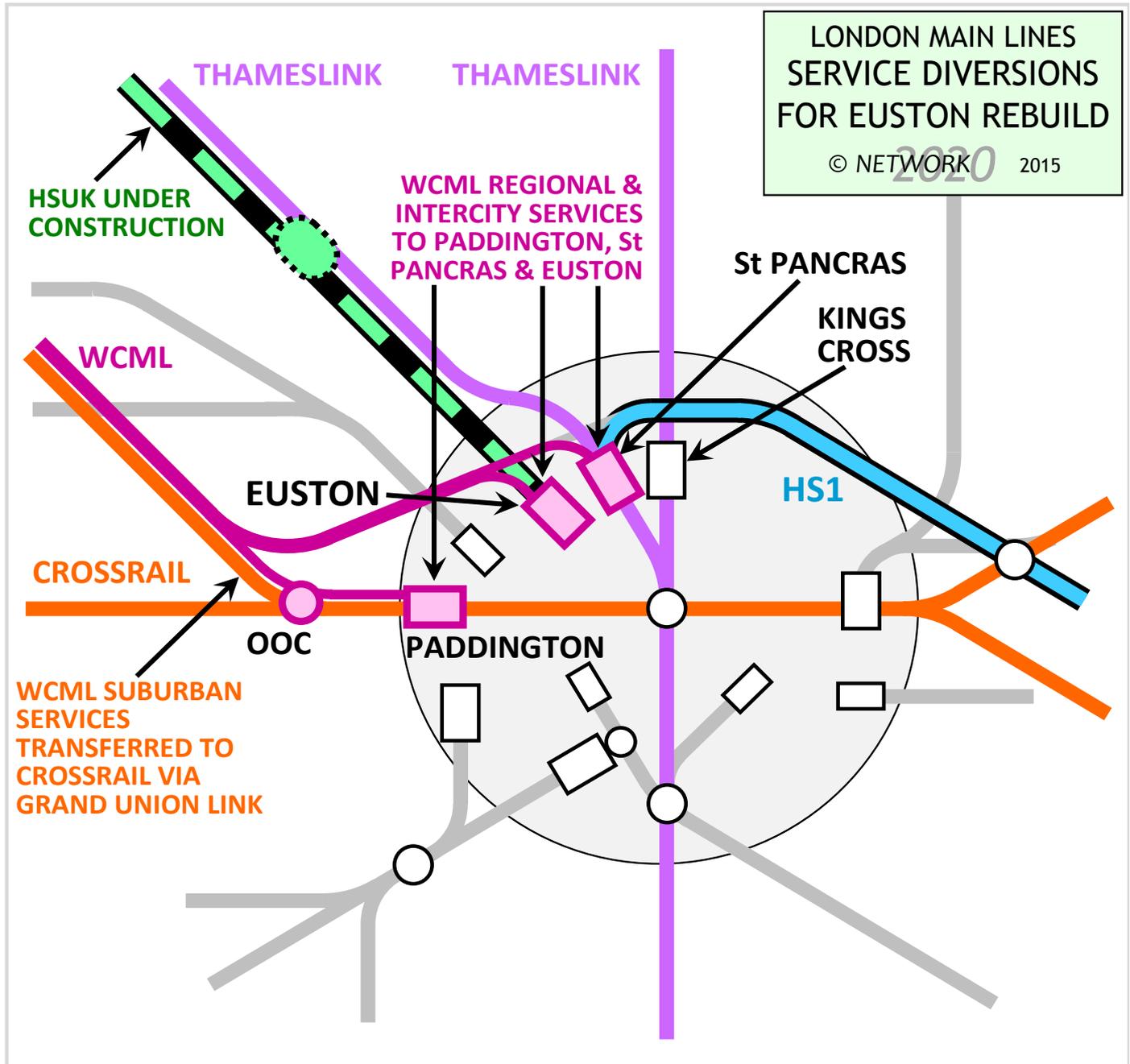


High Speed Rail in London



The Rail Interconnector

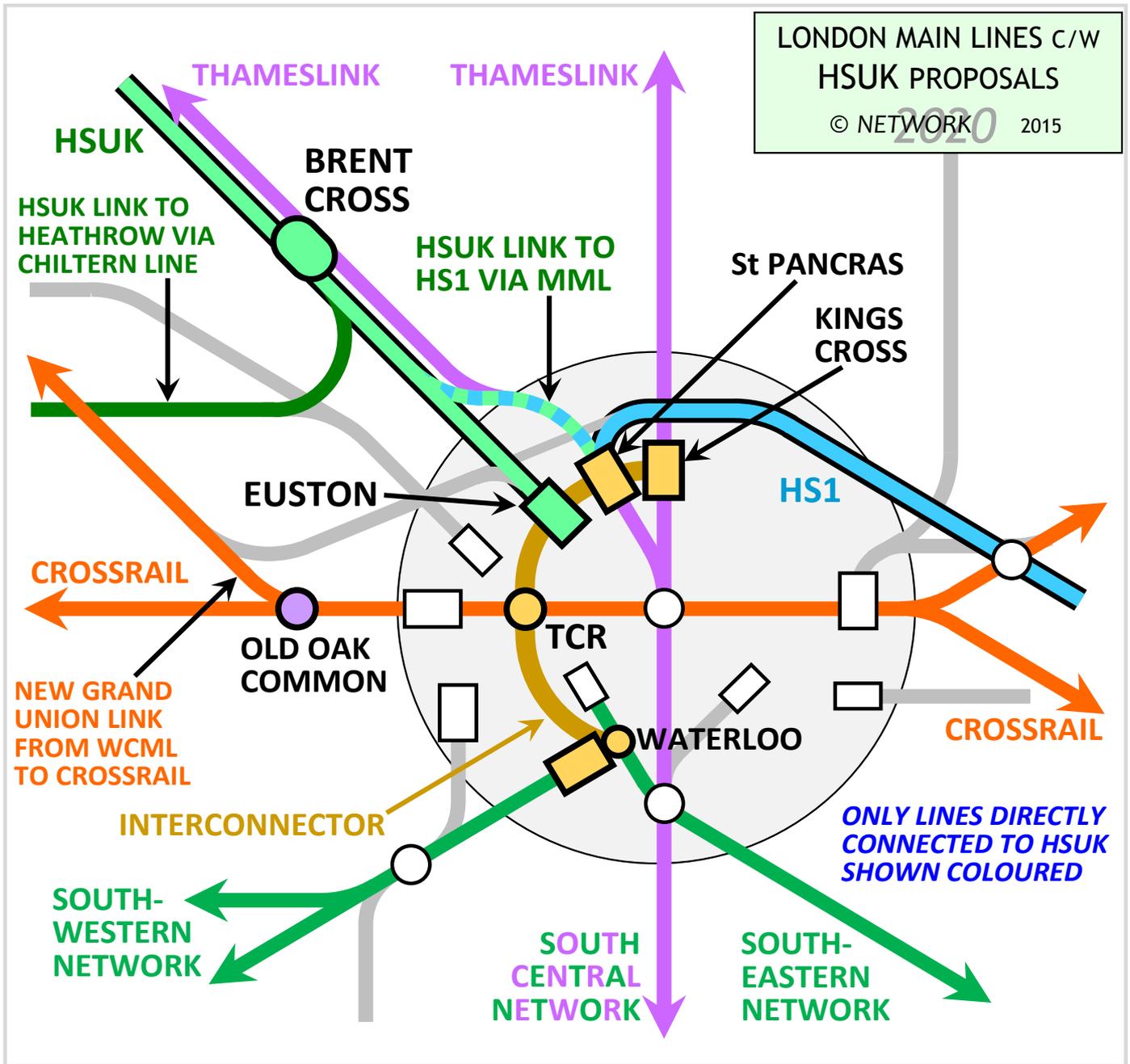
- Initially proposed to link King's Cross/St Pancras with **Euston**, Tottenham Court Road and Waterloo
- 1 minute to KX/St P and 4.5 minutes to Waterloo
- Has the potential for a second phase to complete the circle linking Waterloo to London Bridge, Fenchurch Street, Liverpool Street, Farringdon and back to King's Cross/St Pancras
- Designed to handle $\frac{2}{3}$ incoming HSUK arrivals
- Remaining $\frac{1}{3}$ of arrivals will use tube, bus taxi and foot



High Speed Rail in London

The Impact of HSUK reconstruction of Euston

- All suburban services diverted to Crossrail
- Potential to divert some Virgin Services to Paddington (via Grand Union Link) and St Pancras (via MML link)
- Services to Euston are then reduced to less than 50%
- Then possible to reconstruct the station one half at a time
- All construction work is on the existing railway land
- Most material brought in by rail
- All spoil removed by rail
- HSUK to HS1 link via MML – no impact on the community – all within the existing railway boundaries



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