

Volterra

HS1 - HS2 Link and Camden

An Unconvincing Compromise



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1. Introduction

The original HS2 scheme terminates at Euston some 700 metres from the HS1 terminal at St Pancras. That leaves no option for running services from HS2 onto HS1 (and continental Europe) or vice versa. Following objections, HS2 then proposed a single track link through the middle of Camden Town along a track currently used by rail freight services next to the North London Line (NLL). The current proposal meets the demand for a direct link from HS2 to HS1, but does so with a single track which will impose permanent capacity and speed constraints. The capital cost is less than a tunnel, but this option imposes significant disruption costs on Camden Town.

The disruption caused by the construction risks the sustainability of the Camden Markets and of Camden as a global tourist attraction. Camden is a diverse, thriving community that breeds artistic and creative talent as well as growing media and digital industries. Local business leaders describe the plans as ‘absolutely diabolical’, a ‘disaster’ and the potential road closures as ‘a nightmare’. The plans will ‘kill the small businesses’ and have ‘knock-on effects that will last for years’. Owners are reluctant to invest in their Camden businesses due to uncertainty and concerned that recruitment will suffer as staff are deterred by the travel disruption.

Despite their reservations concerning the link, many local business leaders are positive in their attitudes towards HS2 as a whole, appreciating the long term accessibility gains.

There are three broad scenarios for the HS1-HS2 link:

1. Convert the existing elevated freight track, allowing a reduced service at lower speed
2. Build a tunnel enabling high speed and high frequency services in both directions
3. Do not build a link at all and rely on a short walk/taxi/Underground journey from Euston to St Pancras or a Crossrail service from Old Oak Common to Ebbsfleet (in the future)

The current proposal is compromised:

- If HS2 is successful then the speed and capacity limits will constrain future growth. If HS2 is not successful then the no-infrastructure option is probably adequate
- The current proposed solution works only for a relatively narrow future scenario with some demand to use the link but not too much.

2. Alternatives

HS2 Ltd considered 12 alternatives in its most recently published Environmental Statement¹. The single track proposal was favoured because, according to HS2, it required fewer residential demolitions, no permanent loss of public open space, no permanent road closures and minimised the volume of excavated material that would need to be removed from the site¹.

¹ London–West Midlands Environmental statement CFA2 Camden Town and HS1 Link: Overview of the area and description of the Proposed Scheme

2.1 Tunnel

This option would extend the tunnel to the A5202 St Pancras Way from where it would rise up and join the triangular connection to HS1 immediately west of the bridge over the Midland Main Line. That is clearly the best technical solution, providing capacity and speed. It also provides resilience such that if Euston was closed for any reason trains could be diverted to Stratford, Ebbsfleet and possibly St Pancras. Direct services could operate from HS2 to HS1 and vice versa.

The only reason given for the rejection of this option in the Environmental Statement² was the additional demolition of 23 residential properties. While this is a significant negative impact, it has not been compared to the impact on Camden of the Proposed Scheme (described below). HS2 puts more emphasis on demolition of residential properties than on the costs to Camden such as the permanent loss of markets. This may be due to the compensation costs associated with the former that are not associated with the latter.

In the 'West Midlands Design Refinement Consultation' published by HS2 in May 2013, three shorter tunnelled options, which are comparable to our tunnelled proposal, were ruled out as 'high construction risks associated with the shallow tunnel depths needed for the tunnels to avoid conflict with the four London Underground tunnels and major sewers in the area'. Permanent stopping of certain roads is also mentioned, although very limited detail is given. The costs of the tunnel options are not given. We are not railway engineers, but we are sceptical that the logistics and costs behind the tunnel options have been sufficiently analysed and compared to the costs of the proposed single track through Camden.

In Parliamentary questions on the 19th of December 2013, Frank Dobson MP claimed that the additional cost of a tunnel under Camden is £170m³, this is compared to £2.8bn being spent on tunnelling throughout the scheme with £812m being spent on tunnelling in the Chilterns alone. Therefore, additional cost represents only 0.4% of the total HS2 cost.

If the proposed surface link is completed and it provides insufficient capacity, the cost to the taxpayer of building the tunnel would be at least an additional £770m (the cost of building the tunnel originally). In the Government Consultation response, it claims that HS2 analysis shows that deferring the Link until phase two would add significantly to the cost of the project as the a different approach to construction would be required. Therefore, it is important that the right option is chosen initially. Later construction would also be likely to cause disruption to HS2 services.

² London–West Midlands Environmental statement CFA2 Camden Town and HS1 Link

³ Frank Dobson Parliamentary Questions 19th December 2013

2.2 'No Link'

The Do Nothing 'no link' option was not considered in the Environmental Statement. It is not clear whether it has been considered at all. This would cause no disruption to Camden and no additional cost to HS2.

Interchange options include:

- One stop on the Northern or Victoria lines from Euston to St Pancras:
 - Train frequencies would be higher on High Speed services to Euston than on through services, so wait times might be reduced, but,
 - The journey would require passengers to go from HS2 platforms down to the underground, catch the train one stop and then go up to the HS1 platforms. For passengers with luggage and or children that could be difficult
- Use a taxi for the interchange from Euston to St Pancras. That would be a journey of about 1km or three minutes and cost £4-5, but would avoid changes of level
- There is a third option of changing to Crossrail at Old Oak Common and interchange with HS1 at Ebbsfleet. That is beyond the current end of Crossrail, but it seems likely that Crossrail will revert to the original route to Ebbsfleet, where a good interchange with HS1 could be provided, at some point.
- Walking the distance between the stations would take approximately 10 minutes. Alternatively, there is a bus which takes three minutes to travel between the two stations plus stopping time.

3. Benefits of a HS1 - HS2 link

3.1 User Benefits of link

- There are clear benefits of the HS1-HS2 Link for both international and domestic passengers⁴. All stations served by HS2 will have direct access to international services via Ebbsfleet and domestic passengers from East London and Docklands would have access to HS2 via Stratford station.
- The proposed scheme reduces user benefits compared to the tunnelled option:
 - a) **Additional journey time:** The single elevated track through Camden will not be able to travel at High Speed. The Arup Report argued that it would take approximately six minutes from Old Oak Common to St Pancras Portal covering a distance of 9.3 km. A tunnel might take only 4.4 minutes (Assumes train travels at 160km/h once at full speed and in both cases they start from stationary). Therefore the tunnel could save 1.6 minutes per passenger.
 - b) **Capacity Constraints:** the single track enables a maximum of three trains per hour in each direction⁵. A report commissioned by Greengauge21 'Travel market demand and the HS1 – HS2 link' suggests that demand for the HS1–HS2 link has been underestimated by overlooking demand for domestic services which might exceed four trains per hour. Eurotunnel expects a probable increase of high speed cross

⁴ Greengauge21 'Travel market demand and the HS1 – HS2 link'

⁵ HS2 West Midlands Design Refinement Consultation (May 2013)

channel demand of 35% by 2020, carrying 13.5m high speed passengers per year. This is due to natural growth as well as the opening of new direct lines to London from Amsterdam, Cologne, Frankfurt and Geneva⁶. To build HS2 such that it imposes a capacity constraint almost immediately seems a very short term view, especially in light of these growth figures for HS1 demand

- c) **Safety:** a two way track with differential speed operation on a tight schedule is likely to increase the likelihood of accidents. The Santiago crash of July 2013 shows how tragic the consequences can be if high speed trains are driven too fast on conventional tracks. In October 2013, a freight train derailed on a section of the freight track that the HS1-HS2 Link would run alongside.

3.2 Benefits elsewhere on the transport network⁷

- A HS1-HS2 Link will relieve congestion on the rest of the transport network: cross London passengers will not have to change trains which will reduce congestion at London stations. The link will also provide a viable alternative to the M25 for passengers travelling from Kent or Essex.
- However, the current proposal imposes constraints that a tunnel would not impose:
 - a) **Freight Capacity:** The current proposal would leave a single track for freight. This is judged adequate for existing freight, but could affect the future capacity of freight to and from the West Coast Mainline⁸. Other than a reference to the option of re-routing some freight services via Gospel Oak, it doesn't appear that the effect of losing a freight line has been considered or quantified.

Given that one of the strongest supporting factors of HS2 is the positive environmental impacts of reducing the number of cars on the roads, it seems restricting the freight capacity and potentially forcing freight onto lorries is counterproductive. The London Gateway port is expected to generate an additional 20 trains on the freight line, but the construction of the link will mean that there will be no spare capacity. The marginal cost⁹ of a 20 container freight train being transported 50 miles from the junction where the M1 meets the M25 to where the M25 meets the A13 at the London Gateway would be £1,680. Therefore, the cost of accommodating the additional 20 trains a day will be £8.4m a year. The following table shows the breakdown of costs per lorry mile of a level 4 congested London motorway.

	Cost per lorry mile (pence)
Congestion	171
Infrastructure costs	5
Accidents	1
Air pollution	3
Climate change	4
Noise	18

⁶ Eurotunnel 2020 potential traffic estimate (PWC December 2013)

⁷ Greengauge21 'Travel market demand and the HS1 – HS2 link'

⁸ HS2 West Midlands Design Refinement Consultation (May 2013)

⁹ This uses the costs per lorry mile from the Mode Shift Benefit Values: Technical Report 2009

Other	6
Rail costs	-34
Tax	-6
Total	168

b) **Capacity on the North London Line:** HS2 Ltd states that: “The revised design [for the link] would provide the NLL with the same capacity as now, but could limit future options for development of the conventional rail structure¹⁰. This restriction of future capacity growth on the NLL will become a problem as Network Rail’s route plans for 2010 forecasts significant growth on the North London Line.

The North London Line passenger services are operated by London Overground. It is already a congested service and is expected to become busier before HS2 is operational. Transport for London predicts a 70% increase in demand on London Overground services by 2031¹¹. Therefore, restricting capacity on the NLL is a very significant factor of the Proposed Scheme which HS2 seem to have overlooked.

3.3 Strengthening the business case

The Link will strengthen the business case for both HS1 and HS2:

- The demand for HS1 will be strengthened, improving its value for money. The Greengauge21 report¹² argued that the demand for the HS1-HS2 Link had been underestimated since domestic demand has been overlooked.
- The role and value of Old Oak Common is strengthened, since it will be possible to travel from the South East and the Continent to Old Oak Common.
- All benefits of the link will help to strengthen the business case for HS2 since they improve the benefit cost ratio.



¹⁰ HS2 West Midlands Design Refinement Consultation (May 2013)

¹¹ Camden Town Unlimited Environmental Statement Response Draft Jan 2013

¹² Greengauge21 ‘Travel market demand and the HS1 – HS2 link’

4. Disruption during Construction

The works associated with the elevated option will cause significant disruption to residents and businesses of Camden, road closures around Camden and rail disruptions to the North London and freight lines.

4.1 Travel Disruptions

The travel disruptions will have significant effects on local businesses and the sustainability of Camden as a tourist destination. In the short term, local businesses expect the traffic disruptions to be ‘a nightmare during working hours’ and a drain on productivity as workers deal with longer commutes and adapt to the frequent changes of works, revisions to bus routes and changes to stations. Local businesses expect to delay investment decisions as they struggle to recruit talented staff or attract sufficient demand in Camden: the ‘knock on effect will last for years’.

Road Closures and Bus Diversions

Significant work, which is not currently in Network Rail’s delivery plan, will be required on the current bridges which carry the NLL, which will lead to road closures and disruption. The road closures alone are expected to impose £2.7m costs per annum on local road users. Over the construction period, these costs are expected to total £22m. According to HS2¹³ this includes:

- Replacement of Chalk Farm Road Bridge, St Pancras Way and Baynes Street bridges. Camden Road/Royal College Street Bridge and Randolph Street bridges.
- Widening of Kentish Town Road Bridge and Camden Street Bridge

HS2 is ambiguous in the Environmental Statement when they refer to road closures: they claim that it is not expected that more than one main road will be closed at any one time. It is not clear what they mean by a main road or how sure they are that they will be able to keep all but one main road open at a time.

Details of road closures and bus diversions expected due to the bridge works are provided in the Appendix.

Rail closures

HS2 claim that there will be no significant effect on rail services¹³. However, this assumes that all the work is carried out on the planned schedule and none of the overnight work continues into the morning, resulting in delays at the morning peak rail use time. We are sceptical that it will be possible to keep the effect on rail services as small as HS2 claim it can.

- There will be a six month closure of Camden Road Junction to Camden Junction link but this is a freight route, for which there are alternatives, and so will not impact on passenger travel.
- HS2 claims that the work on the NLL can be done within its normal maintenance timetable and would have to be done given the increase in capacity of NLL anyway. We are sceptical

¹³ London–West Midlands Environmental statement CFA2 Camden Town and HS1 Link: Traffic and Transport

that this can be achieved without passenger disruption. It is also interesting to note that HS2 claim that upgrades to the NLL would be needed anyway due to increasing demand on the NLL but also use the lack of growth in future demand as a justification for restricting future capacity on the NLL.

- There will be approximately 160 mid-week night blockades and a small number of weekend possessions. The exact nature of these disruptions has not been specified but we expect there will be no service or an extremely limited service on the NLL during these times. This has the potential to have significant effects on rail services if the work overruns, and will impact the number of people who visit Camden at the weekends. There are 1.9 million exits¹⁴ to Camden Road station a year. Given the number of people who visit Camden at the weekend we assume the same number of people use the station each day at a weekend as during the week. Therefore, 10,450 people could be prevented from reaching Camden by rail as a result of each weekend possession.
- There will be a 10 to 14 day closure affecting the NLL when Chalk Farm Road bridge is demolished and rebuilt. This will have significant effects on rail services over this period, affecting up to 20 thousand passengers a day. The Cross London RUS Passenger count¹⁵ in 2006 calculated that there are 3,500 passengers travelling at peak time and 2,900 at non peak time. Taking into account the natural growth in demand and the growth in demand due to the upgrades to the line, we expect 15 to 20 thousand passengers would now be affected by the closure of the NLL.
- Camden Road Station will need to be rearranged:
 - The NLL tracks will be moved north to platforms 3 and 4.
 - Platform 1 taken out of service and the canopy will be widened for HSR trains
 - Platform 2 will remain in use.

4.2 *Cost to Camden's creative industry*

Camden has a thriving creative industry which is vulnerable to disruptions. Local business leaders expect the proposed scheme to be 'disastrous for small business' and to 'kill the markets'. The cost of losing the creative industries of Camden is more than simply the sum of the compensation costs of individual businesses; the creative industry in Camden is an interwoven system that cannot simply be relocated elsewhere. The markets serve a broad catchment area and one that is highly sensitive to travel disruptions. With works going on for years there are genuine concerns about perceptions that Camden is closed.

The knock on effects on businesses around Camden will also be significant. A local pub owner referred back to the Camden fire of 2008 when revenue fell to 60%. He speculated that the losses due to the construction of the link could be worse and continue for a longer duration, leading to reduced employment and potential closure.

The BOP report 'The HS2 impact on Camden's creative economy'¹⁶ outlined potential costs of HS2 to Camden, not just of the link.

¹⁴ Station usage estimates 2012 -2013, Office of Rail Regulation

¹⁵ Cross London Route Utilisation Strategy, Network Rail 2006

¹⁶ The HS2 impact on Camden's creative economy' BOP 2013

- Camden’s creative economy currently generates £1.3bn per year and 13,791 jobs in the area impacted by HS2.
- The impact of HS2 on Camden’s creative economy is expected to be in the region of £317m and £631m over the 18 year period between 2014 and 2031.
- This amounts to 5,350 to 9,100 potential job losses over the same period, equivalent to 315 to 535 jobs per year.
- The local markets are equivalent to 696 retail units. The impact of the single track link on the markets is expected to be a loss of £92m over a five year period.

5. Conclusions

- There are strong arguments in favour of a HS1-HS2 Link, but the current proposal is a half measure which risks significant negative impacts for limited benefits.
- HS2 is in danger of planning to fail. If there is sufficient demand for a HS1-HS2 Link then HS2 should invest in a full tunnel which will allow for capacity to grow in the future, both on HS2/HS1 and on the north London Line and rail freight.
- If the Proposed Route is completed and it subsequently becomes clear that there is insufficient capacity on the Link, an additional £770m will be needed to build the tunnel. Therefore, it is important that the right option is chosen initially.
- If HS2 does not believe that there will be sufficient demand for a full tunnel link, it might be better not to build the link at all: no cost alternatives include walking between Euston and St Pancras or, in the future, using Crossrail services.
- There are significant costs associated with the proposed scheme, which we believe have been underestimated by HS2. These include:
 - Short term costs to Camden from travel disruptions; loss of revenue as visitors and commuters and employees are deterred.
 - Long term costs include the threat to the sustainability of Camden as a thriving community for digital, media and creative talent as well as being a global tourist attraction. Local business leaders confirmed their uncertainty about Camden’s future if the Proposed Scheme goes ahead it will reduce investment in Camden locations.
 - Costs to the users of high speed rail include additional journey time, future capacity constraints and potential safety implications.
 - Restrictions to North London Line capacity. The HS1-HS2 link doesn’t take capacity from the NLL but it does restrict future growth.
 - Loss of freight capacity. Currently there are two freight lines but under the Proposed Scheme this would be reduced to one.
- The additional cost of a tunnel compared to the proposed scheme seems to be the additional £170m which is equivalent to 0.4% of HS2 total capital cost and an additional 23 residential demolitions. The disruption costs imposed on Camden are forecast by BOP to be significantly higher than that additional financial cost.

Table 5.1: Summary of Costs

	Disruption to Camden	Cost to HS2	Disbenefit to HSR users
Single track elevated	Very Significant	£600m	Significant

Tunnel	Negligible	£770m	zero
No Link	Zero	£0	Very Significant

Appendix

Road Closure	Partial /Full	Duration	Bus Diversions Routes
A5202 St Pancras Way/Baynes Street	Full	Less than 4 weeks	247 Angel Islington to Lancaster Gate
Randolph Street	Full Partial	3 months 3 months	
A503 Camden Road	Full	Less than 4 weeks	247 Angel Islington to Lancaster Gate 46 Farringdon street to Lancaster Gate 29 Trafalgar square to Wood Green 253 Euston to Hackney Central
A5202 Royal College Street	Full	Less than 4 weeks	247 Angel Islington to Lancaster Gate 46 Farringdon street to Lancaster Gate 29 Trafalgar square to Wood Green 253 Euston to Hackney Central
A400 Camden Street	Full Partial	2 week 2 partial totalling 6 weeks	46 Farringdon street to Lancaster Gate 24 Pimlico to Hampstead Heath 27 Chalk Farm Road Morrison's to Chiswick business park 134 Tottenham Court Road to North Finchley 168 Hampstead Heath to Old Kent Road C2 Victoria to Parliament Hill Fields
A400 Kentish Town Road	Full Partial	Less than 4 weeks 2 partial 4 to 8 weeks	134 Tottenham Court Road to North Finchley C2 Victoria to Parliament Hill Fields 214 Moorgate to Highgate Village
Torbay Street/Leybourne Street	Full Partial	one night two months	
A502 Castlehaven Road	Full	Less than 4 weeks	
A502 Chalk Farm Road	Full	Less than 4 weeks	24 Pimlico to Hampstead Heath 27 Chalk Farm Road Morrison's to Chiswick business park 168 Hampstead Heath to Old Kent Road
Access Road to Juniper Crescent	Partial	3 months	