



Surface Access: Process Overview

November 2014

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Surface Access: Process Overview

Overview

This note describes the approach that the Airports Commission adopted to the appraisal of the surface transport implications of shortlisted schemes in the period leading up to the launch of the national consultation in October 2014. The note explains the process by which the Commission specified the parameters for the surface access appraisal documents provided by Jacobs, but does not cover the detailed methodology used by Jacobs for their appraisals; this is set out in the separate methodology documents that accompany the appraisal of each shortlisted scheme.

Background

The Commission's Appraisal Framework (published in final form in April 2014) separated surface transport from the other elements of the updated scheme designs which proposers were invited to submit. In particular, the Appraisal Framework emphasised that the Commission would maintain overall control of the design of surface access strategies.

In respect of surface transport, scheme promoters will be invited to submit details of proposed **Surface Access Strategies**. However, this will be used as an input into an overall programme of work led by the Commission. This is because any surface access improvements to support proposed new airport infrastructure are likely to be at least part-funded by the Government, and the design and appraisal of appropriate surface access measures will require the full involvement of Network Rail and the Highways Agency amongst others. For instance, the Commission will have to give consideration to how the surface transport elements of proposals would align with wider transport investment strategies. The Commission is well-positioned to undertake this work.

The Commission had already stated in its Interim Report (published December 2013) that the "hub station" proposition put forward by Heathrow Hub would be treated as a detachable component which could be tested alongside either of the Heathrow-based proposals under consideration.

For its appraisal of schemes' surface access impacts, the Commission's Appraisal Framework identified three key objectives.

- **To maximise the number of passengers and workforce accessing the airport via sustainable modes of transport;**

- **To accommodate the needs of other users of transport networks, such as commuters, intercity travellers and freight;** and
- **To enable access to the airport from a wide catchment area.**

The surface access reports prepared for the Commission by Jacobs are constructed around these objectives. The Commission also recognised that surface access would impact upon many other modules within its appraisal framework, such as Place and Air Quality.

Establishing baselines

The Commission was conscious that in order to carry out an objective appraisal of schemes surface transport impacts, it would be necessary to establish a baseline for comparison purposes. With scheme opening dates estimated for the mid-2020s, the Commission was clear that the UK's present surface transport networks were not a suitable baseline for comparison. Absent any airport expansion, anticipated growth in background demand will require sustained investment in surface transport networks over the coming decades.

The Commission therefore engaged with those bodies with the responsibility for strategy and management of the UK's surface transport networks in order to strengthen its understanding of the likely shape of future developments of those networks. The bodies in question were:

- Network Rail;
- Highways Agency;
- Transport for London; and
- Department for Transport (in respect of its road and rail functions).

Through liaison with these organisations, the Commission was able to build an understanding of those schemes which had firm funding commitments and, where necessary, political agreements in place, such that delivery could be considered essentially a certainty. For the most part, schemes falling into this category were due to complete by 2019, although noting the progress of the legislation required to deliver HS2, the Commission took the decision to include the main HS2 route (excluding a spur to Heathrow Airport) in this category. The schemes falling into this category were grouped together to form a "core baseline", which is set out at Annex A.

While the core baseline allowed the Commission to understand the nature of the more immediate enhancements to the UK's surface transport networks, it nevertheless left a significant gap before the planned dates of operation of the shortlisted schemes. The Commission therefore engaged further with the bodies identified above to understand the nature of the further interventions that would likely be needed to meet background demand forecasts over a longer term. Through this process, the Commission was able to identify a suite of interventions which it deemed, taken in totality, represented a plausible vision of the UK's surface transport networks in 2030. This was put forward as the "extended baseline".

It should be emphasised that the extended baseline does not represent a definitive corporate view of the surface transport bodies mentioned above. The schemes contained within it do not have political or funding security and specific factors may lead to Government or delivery bodies making different choices in respect of surface transport investment. The Commission nevertheless believes that the extended baseline represents a more plausible snapshot of surface transport networks in 2030 than an assumption that no further investments would be made beyond the schemes identified in the core baseline. The extended baseline is set out at Annex B.

Post 2030 analysis

The Commission also attempted to establish the nature of the infrastructure interventions required to meet background demand beyond 2040. However, after discussion with surface transport bodies, the Commission's view was that it was not plausible to do so, for a number of reasons:

- there is more uncertainty regarding background demand growth beyond 2030;
- the scale of the interventions required post 2030 is not as well understood; and
- the scope for "incremental" capacity upgrades of the sort that have characterised much investment over the last decade, such as de-segregating junctions and extending rail platforms, is likely to be less post-2030, requiring more radical options which have not yet been subject to any significant degree of design or scoping.

The Commission did not, therefore, feel that it was possible to construct plausible baseline scenarios for 2040 and 2050. While earlier work on the Inner Thames Estuary concept had made detailed capacity assessments for those years, those assessments were largely made on the basis of dedicated airport infrastructure, where issues of background demand growth were not so material to the appraisal. The Commission therefore asked Jacobs to produce detailed analysis of the impacts of shortlisted schemes' surface transport proposals for 2030, with more narrative assessments covering the longer term.

Establishing the surface transport proposals

Scheme promoters submitted updated scheme designs on 14 May 2014. Once in receipt of these, the Commission needed to establish the scheme-specific surface access proposals that would go forward for assessment. This was vital due to the number of appraisal modules that were affected by the nature of those surface access strategies.

In the case of the proposals from Gatwick Airport Limited and Heathrow Airport Limited, the Commission's view was that the surface access strategies put forward by promoters were sufficiently credible that they could be taken forward in their totality for appraisal. In the case of Heathrow Hub Limited, the Commission's view was that it had received sufficient material for the promoter that it could conduct a credible assessment of the "hub station" proposition in a detached context that would allow it to understand the proposition's impacts when associated with either of the airfield options identified at Heathrow. The Commission also asked Jacobs to construct a version of the Heathrow Hub Limited airfield proposal with a more traditional surface access strategy. This proposition, which is covered in the main Heathrow Hub appraisal document, is identical to the Heathrow Airport Limited proposal in respect of rail, but has some changes to the configuration of roads and junctions in the immediate vicinity of the airport site, reflecting the different land footprints of the two proposals.

The Commission, reflecting both its own deliberations and comments put to it by surface transport bodies and the Expert Advisory Panel, asked Jacobs to carry out a number of sensitivity tests on the surface transport appraisals. In particular, tests were carried out to establish the impacts of:

- different demand scenarios, reflecting the promoters' own demand forecasts, the Commission's assessment of need case and the Commission's maximum demand scenario for each option; and
- different pricing strategies for the rail components of surface access strategies, looking in particular at the impacts of removing premium fares from airport express services.

The Commission further noted that neither Heathrow Airport Limited nor Heathrow Hub Limited had made a spur from HS2 a component of their core surface access strategy. The Commission asked Jacobs to conduct a review of the available literature regarding the case for the HS2 spur, to determine whether the Commission could agree that it was not essential. This review, which forms part of the package of documents published for consultation, supports the view that an HS2 spur to Heathrow airport (whether to the airport site or a hub station) is not necessary to support expansion of the airport. While the Commission's extended baseline had originally included the HS2 spur to Heathrow, on the basis of continued uncertainty regarding political support for it and the conclusions of the

Jacobs report, the Commission decided that the spur should no longer be considered to form part of the extended baseline.

Risk and Optimism Bias

Prior to its Interim Report, the Commission applied higher levels of risk and optimism bias in respect of the surface access packages accompanying proposals, reflecting that the components of these packages were subject to significant uncertainty.

For its work in phase 2, the Commission reflected that with the components of surface access strategies now better understood, it was appropriate to follow WebTAG guidance where appropriate on the application of risk and optimism bias levels.

In respect of rail schemes, the Commission has followed the guidance and applied 41% and 66% optimism bias adjustments for operational and capital expenditure, respectively. No separate allocation for risk adjustments was applied.

The same approach has been followed for road schemes, with 44% optimism bias adjustments applied for operational and capital expenditure. No separate allocation for risk has been applied.

Scope of materials for consultation

Jacobs have prepared reports for consultation in accordance with the Commission's instructions. These documents are:

- an appraisal report setting out the results of the appraisal of the Gatwick Airport Second Runway surface access proposal against the Commission's surface access objectives;
- an appraisal report setting out the results of the appraisal of the Heathrow Airport North West Runway surface access proposal against the Commission's surface access objectives.
- an appraisal report setting out the results of the appraisal of the Heathrow Airport Extended Northern Runway airfield proposal with an on-site surface access strategy against the Commission's surface access objectives;
- an appraisal report on the "hub station" concept presented by Heathrow Hub Limited, illustrating its likely impacts upon both the Commission's surface transport objectives as well as objectives from other relevant modules; and
- a short review of the literature regarding the proposed HS2 spur to Heathrow Airport and its relation to any case for expanding the airport.

Annex A

The Core Baseline

Rail infrastructure (excluding high speed)

In addition to the existing network and services, the rail core baseline will include all of the schemes identified in the Network Rail Control Period 5 (2014-19) Enhancement Delivery Plan, with the exception of Western Rail Access to Heathrow, which does not yet have a fully secured funding package. This is available online at <http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/cp5-delivery-plan/>

Elements of relevance to proposals may include (but not be limited to):

- Crossrail;
- Reading Area Station redevelopment;
- Thameslink programme;
- ERTMS in-cab signalling roll-out;
- East Coast Main Line capacity enhancements;
- West Anglia Main Line enhancements;
- Great Eastern Main Line capacity enhancement (Bow Junction);
- East Kent resignalling;
- Redhill Station additional platform;
- London Victoria Station capacity improvements;
- London Waterloo Station capacity improvements;
- Great Western Main Line electrification;
- Intercity Express Programme roll-out;
- Thames Valley branch line enhancements;
- Oxford Corridor capacity improvements;
- Swindon to Kemble redoubling; and
- Birmingham Gateway development.

Scheme promoters are encouraged to consult the Enhancement Delivery Plan for the full details and delivery timescales for schemes.

Rail services (excluding high speed)

The Department for Transport is responsible for the design and procurement of new and replacement rail franchises on the national rail network for which it is the franchising authority. The DfT is in the process of tendering a number of rail franchises, details of the rail franchise schedule can be found at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/301976/rail-franchise-schedule.pdf. This includes information on the timing and scope of competitions for future franchises. Each individual franchise has its own specific requirements and addresses a particular set of challenges and so the requirements set out in each franchise competition are tailored to meet the needs of the areas they serve. The DfT has moved towards more output-based specifications to give greater flexibility to bidders while recognising the need for Government to protect essential service levels for all passengers. Details of the Department's activities during each of the stages of a franchise competition can be found at <https://www.gov.uk/government/publications/franchise-competition-process-guide>

In developing the baseline the Commission will assume that service levels will be broadly similar as they are today unless an infrastructure scheme or introduction of new rolling stock triggers a change. Details of the investment programme for 2014-19 can be found at <http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/cp5-delivery-plan/>

The Commission will monitor the results of current franchise competitions and, when the outcomes of these competitions become known, will discuss the implications of the franchise with scheme promoters. The Commission recognises that dialogue on this issue will need to continue after the receipt of revised scheme proposals.

The outcome of the competition for the Thameslink, Southern and Great Northern franchise is clearly of particular relevance to scheme promoters and understanding and discussing the components of this will be a priority for the Commission.

Rail – High Speed

In respect of the High Speed 1 link and the Channel Tunnel, the Commission will assume for its baseline no fundamental changes to infrastructure or services, though it will use existing demand forecasts for both passenger and freight traffic to inform its baseline for capacity utilisation.

In respect of the High Speed 2 link, the Commission has noted that the “phase 1” route between London Euston and Birmingham and the “phase 2” route from Birmingham to Manchester and Leeds represents stated Government policy and has cross-party support. The Commission has, therefore, decided to include these elements of the scheme in its core baseline. The Commission has also noted, however, the Secretary of State for Transport’s statement that he will delay a decision on whether to proceed with a spur from HS2 to Heathrow Airport until after the Airports Commission’s Final Report. This spur will not, therefore, form part of the core baseline.

For an overview of the HS2 programme, scheme promoters are encouraged to consult the following documents:

<https://www.gov.uk/government/publications/hs2-strategic-case>

<https://www.gov.uk/government/publications/high-speed-rail-investing-in-britains-future-phase-two-the-route-to-leeds-manchester-and-beyond>

The Commission has also noted that the recent review by Sir David Higgins made a number of recommendations regarding the delivery of HS2. On the basis of this, the Government has already taken the decision not to proceed with a link between HS2 and HS1. This link will not, therefore, form part of either baseline. It is possible that the Government may suggest further changes to the timing and phasing of the HS2 delivery programme on the basis of Sir David’s report; the Commission will monitor developments and incorporate any material changes into the baseline. Sir David’s report is available at: <http://assets.hs2.org.uk/sites/default/files/inserts/Higgins%20Report%20-%20HS2%20Plus.pdf>

London Underground, London Overground and Docklands Light Railway

The Commission has taken advice from TfL on the status of various forthcoming enhancements to the London Underground, Overground and DLR networks. On the basis of information provided, the Commission will include the following schemes in the core baseline:

- **London Underground Subsurface upgrade** – Signalling and rolling stock replacement, complete by 2018;
- **Croxley link** – Metropolitan line link to Watford Junction, planned to complete by 2021;
- **Northern line upgrade** – planned to complete by 2020;
- **Victoria line upgrade** – planned increase in service frequency to 36tph;
- **Piccadilly line upgrade** – planned for completion by 2026;
- **Bakerloo line upgrade** – planned for completion by 2031;
- **Central line upgrade** – planned for completion by 2031;
- **London Underground station redevelopments** – eg. Bank and Victoria;
- **Waterloo & City Line Upgrade** – Planned for completion by 2031;
- **London Overground extension of class 378s to 5 car** – deployed by end 2015;
- **Gospel Oak to Barking electrification** – complete by 2019;
- **DLR 3-car upgrade Poplar to Stratford** – complete by 2026; and
- **DLR Interpeak service enhancements (base service plan A)** – due September 2014.

Strategic roads network

Following discussions with the Highways Agency, the Commission's view is that the following schemes should be included in the core baseline:

- **M25 Junction 23 to 27 “smart motorway” (all lanes running)** – complete by 2015;
- **M25 Junction 5 to 6/7 “smart motorway” (all lanes running)** – complete by 2014; and
- **M3 Junction 2 to 4a “smart motorway” (all lanes running)** – complete by 2016.

Annex B

The Extended Baseline

Rail infrastructure (excluding high speed)

The Commission has held discussions with Network Rail, the Department for Transport and other parties with an interest in the process regarding rail schemes which are likely – but not certain – to be funded in the coming years to meet growth in background demand regardless of decisions on airport expansion. These include:

- **Western Rail Access to Heathrow:** which forms part of the Control Period 5 settlement (meaning it is highly likely to progress) but does not yet have a fully agreed funding package. Should the funding package be secured, this scheme would become part of the core baseline.
- **Gatwick Airport Station redevelopment:** recommended as part of the Commission's interim report. Discussions are ongoing between Government, Network Rail and the airport regarding the nature and scale of the redevelopment.
- **Proposed capacity enhancements to the Brighton Main Line:** Currently under development and may potentially be identified for funding as part of the CP6 (2019-2024) programme. Components include:
 - Windmill Bridge Junction area re-modelling
 - New flyover for Up London Bridge Fast line
 - New flyover carrying the Down London Bridge Fast over the Wallington and Victoria Slow lines
 - Reusing the current dive under for realigned Up London Bridge Slow services removes pathing conflicts of current flat junction
 - New 6th track between East Croydon and Windmill Bridge
 - East Croydon Station remodelling and additional platforms
 - Selhurst Spurs lengthened to provide 12-car signal standing – removes current conflicts
 - Stoats Nest Junction grade separated junction for Up Redhill trains to join the Up Fast line

- London Victoria re-designation of platform 8 and new access from platform 9 approach
- Clapham Junction area alterations to allow for additional train paths (no feasibility work yet undertaken)
- Keymer Junction – third track to enable Up Lewes train to join main line whilst an Up train is passing and enables the Brighton Main Line to remain open when the junction is unusable.
- **Potential outcomes of the Wessex, Sussex, Western, Kent and Anglia route studies:** which will inform the future development of infrastructure and services on those routes.
- **London Victoria:** further redevelopment beyond 2019, subject to business case.
- **Clapham Junction:** further redevelopment beyond 2019, aspirational at present and further work subject to business case.
- **Crossrail 2** – subject to further development and appraisal.

Rail Services (excluding high speed)

As with the development of the core baseline, the Commission will monitor progress on the Department for Transport's franchising programme. Where the outcomes of franchise competitions are not known, but the Invitation to Tender gives clear indications regarding the probable contents of the franchise, these will be incorporated into the extended baseline.

High Speed Rail

The Government has deferred a decision regarding a spur from HS2 to Heathrow Airport until after the Airports Commission publishes its final report. This spur will, therefore, be placed within the extended baseline. The Commission notes, however, that the need to progress the HS2 hybrid bill through Parliament may result in changes in Government policy in this area and will keep any such developments under review, in respect of the relationship of the spur to the baselines.

London Underground, London Overground and Docklands Light Railway

The Commission has taken advice from TfL on the status of various forthcoming enhancements to the London Underground, Overground and DLR networks. On the basis of information provided, the Commission will include the following schemes in the extended baseline:

- **Jubilee line upgrade:** increase to 34tph, requires additional stock;
- **Northern line extension to Battersea:** subject to TWA approval, potentially open in 2020;
- **Northern line full separation:** potentially by 2026;
- **Bakerloo line southern extension:** aspirational only at present;
- **London overground additional 2 tph all day between Clapham Junction and Stratford via West/North London Lines** – planned for 2019, but dependant on additional rolling stock;
- **London overground additional 2tph on East London Line** – dependant on additional rolling stock;
- **London overground Gospel Oak to Barking extended to Barking Riverside** – possible by 2021;
- **London overground 6 and 8 car operation on East, North and West London Lines** – possible in 2020s/2030s;
- **DLR new franchise service plan** – by 2016/17;
- **North route double tracking phase 2** – requires additional rolling stock;
- **DLR Royal Rocks initial capacity enhancements** – requires additional rolling stock;
- **DLR full 3-car operation** – requires additional rolling stock;
- **DLR extension to Catford** – aspirational only at present; and
- **DLR extension to Bromley** – aspirational only at present.

Strategic Roads

Following discussions with the Highways Agency, the Commission's view is that the following schemes should be included in the extended baseline:

- **M4 Junction 3 to 12 “smart motorway” (all lanes running)** – subject to value for money and deliverability assessment;
- **M23 Junction 8 to 10 “smart motorway” (all lanes running)** – subject to value for money and deliverability assessment; and
- **Lower Thames Crossing** – work progressing, but no decision yet as to nature of any option that might proceed.

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