

1. EXECUTIVE SUMMARY

The purpose of this small-scale desk study was to identify the potential of the Kew Bridge to Willesden (Kew East) route (Figure 1) to be developed further as a strategic freight corridor and to identify constraints on its use and how these could be addressed.

1.1 Freight Routes Overview

There are two routes in the London area which are used as strategic corridors for north-south (and east-west) cross-London freight. These are the West London Line (WLL) and the Kew Bridge – Willesden (Kew East) Line. Both carry significant quantities of freight and function as strategic freight corridors as the freight routing diagram at Figure 8 demonstrates.

Figure 1 shows the two routes (more detail at Figure 4), Figure 3 the extent of electrification, Figure 7 routing of passenger services, and Figure 8 routing of freight services.

The WLL is the major artery, carrying the majority of the north-south traffic. It has the most comprehensive series of connections to other routes, is more direct, well-engineered, high capacity and operationally flexible (most notably through the bi-directional signalling). It can be used by electrically-hauled freight trains.

By contrast, the Kew East route infrastructure is less well developed. The route features many more capacity constraints through common route sections with other services, and a significant number of junction interactions and routing limitations. These interactions also raise reliability issues. The route is longer, potentially increasing journey times and operating costs. The route section between Kew New & Old Junctions and South Acton is not electrified. Despite these constraints, the section through Acton Wells Junction carries more freight than the West London Line. This concentration of trains at Acton Wells will limit the potential capacity of the route as a whole.

Both routes are currently cleared to the same, W9, loading gauge.

1.2 Kew East Route

Capacity Constraints

The route is capacity constrained by the following:

- Flat junctions at Clapham Junction (access between the Ludgate and Windsor lines is a particular issue for north and west bound trains), Barnes, New Kew, South Acton, and Acton Wells;
- Interaction with passenger services on the intensively used Windsor Lines (Section 4.2), with the North London passenger services, and interaction with freight traffic to and from the Great Western Main Line at Acton Wells (Section 6.6);
- Signalling limitations (Section 7.3);
- Level crossings (Section 7.5);
- Routing and capacity limitations to the north and south at Acton Canal Wharf and over the Acton branch (Section 6.8), at Clapham Junction and over the Channel Tunnel Routes (Section 5.7).

Opportunities for capacity enhancement are limited. Some possible opportunities are discussed in Section 8.3.

The Windsor Lines (Clapham Junction, Barnes, Kew Bridge) are intensively used by passenger services. Current plans are to achieve service improvements by reorganisation

rather than introduction of additional services. A new timetable is to be introduced in December 2005. This will reinforce the regular interval principle, which could allow the creation of one or two regular interval potential freight paths per hour in the off peak periods. However unreliability could be introduced through the additional junction movements. There may be a future need for paths for passenger trains to Heathrow via Staines (Airtrack).

An additional future constraint would be created by implementation of proposals to introduce passenger services between Surrey Quays and Clapham Junction as part of the East London Line Project. TfL will need to consider the compatibility of its aspirations for the introduction of the ELLP Clapham Junction passenger service with its aspirations to develop the Kew East route as a strategic freight corridor.

Some capacity and route infrastructure enhancement works are likely to be required to allow any significant additional use of the route by freight trains. Other than for electrification (see below) it has not been possible, within the scope of this study, to identify and cost potential schemes.

Electrification.

Electrification issues on the route are discussed in Section 7.1. The works required to electrify the missing sections of route, and upgrade the route for operation of electrically-hauled freight trains, including use of Class 92 locomotives, are covered in Section 8.1. An indicative cost to make the Kew East route available for the operation of electrically-hauled Channel Tunnel freight traffic is £ 18 million.

Gauge Enhancement.

The remit requires consideration of gauge enhancement of the Kew East route to W10/12. Section 7.2 outlines the issues relating to gauge, the options for enhanced gauges, and the types of traffic that require them. Section 8.2 considers the works required for gauge enhancements. An indicative cost for gauge enhancement is £ 14 million.

The following issues are identified:

- For operating flexibility it would be desirable to gauge enhance the WLL at the same time (not included in the indicative cost);
- Gauge enhancement is only of value as part of a scheme to gauge enhance a terminal to terminal route. There are currently no W10/12 routes south of the Thames, or plans to create any (Section 7.2.3).

1.3 West London Line

This route is used by the bulk of existing north-south freight services (see the indicative numbers of daily freight services on the various route sections at Figure 8). There are very clear operator preferences to using this route rather than that via Kew East.

Preliminary analysis suggests that up to one freight service per hour might be suitable for diversion away from the route as noted above. Changes to the operation of Eurostar services due to the opening of the Channel Tunnel Rail Link and the construction of new depot facilities at Temple Mills may release up to one path per hour (Section 4.3).

1.4 Freight Capacity

Analysis of TRUST train reporting data for a week in February 2004 (Section 5.1) indicate that, for the West London Line, Working Timetable path take up was about 50%, measured on a weekly basis (about 30% daily). Weekly path take up through Acton Wells Junction on the Kew - Willesden line was 75% (about 40% daily).

Timetabling of freight services over the WLL and Kew East lines is very complex with many trains having multiple paths and varied destinations. The reasons for this are set out in Section 5.1, and mean that there is, in practice, very limited scope for releasing paths for other uses. Conversely, the situation means that it should be possible to accommodate the majority of freight growth within the existing capacity for some years to come.

Channel Tunnel freight traffic is a particular issue. There are 35 specified paths via the WLL each way per day of which only about 30% are used. This reflects problems with freight operations through the tunnel and optimism in the original forecasts. The paths are protected by international agreements until 2052. These are likely to be very difficult to change.

1.5 Opportunities for Diversion of Freight Services from the WLL to the Kew East Route and Operation of New Services

The routing of existing freight services which use the WLL and Kew East routes are shown diagrammatically at Figure 8. This shows that only a limited number of freight flows are suitable for possible diversion (those on routes 2 and 4 on the diagram). Preliminary analysis suggests that up to one train per hour might be suitable for diversion (Appendix A). Electrification would be required for some trains and operational and pathing considerations (Sections 5.5 to 5.7) may preclude some of the trains being re-routed.

New services on the routes already using the Kew East Line and on routes 2 and 4 could potentially use the Kew East route.

1.6 External Constraints

No particular external constraints, which would unduly limit the ability of the rail network to accommodate growth in cross-London freight traffic, were identified. The West Coast Main Line is the principal freight artery and has limited capacity. A capacity enhancement scheme, principally aimed at increasing passenger capacity, is currently being implemented. This is expected to release a further 60 potential freight paths per day from 2008/9. These will be available for freight growth and perhaps, as a guide, 25 to 30% of any additional trains could require paths over the WLL/Kew East Routes.

1.7 Summary

West London Line

- The West London Line is the major freight artery and was upgraded for this purpose when the Channel Tunnel was built. Given choice, it is the clear route preference for freight operators;
- Due to route restrictions only a small number of freight flows are potentially suitable for diversion to the Kew East route. Up to about 1 train per hour could be suitable on routing considerations, but this number is likely to reduce for operational reasons;
- Eurostar empty stock movements could reduce after 2007, potentially freeing up capacity;
- Only about 30% of specified Channel Tunnel freight paths are currently used. These paths are protected by international agreements which will be difficult to change;
- There should be scope for release of a small amount of capacity, perhaps one or two paths per hour, for other uses.

Kew East

- The route is already a strategic freight corridor, particularly for freight to and from the Great Western Main Line which join or leave at Acton Wells Junction (see Figure 1) and to and from the Midland Main Line;
- Although numbers of trains over the full route are significantly less than on the WLL, there can be more actual movements over Acton Wells Junction in a day, than over the West London Line (Chapter 6);
- It has a much larger number of infrastructure and capacity constraints than the WLL, and is operationally less flexible;
- It has the potential to carry a small amount of additional freight traffic, possibly one or two paths per hour, but to maximise opportunities and capacity it will require some upgrading of the infrastructure to improve capacity and operating flexibility;
- Electrification may be required to allow electrically hauled freight trains to use the route (some trains potentially suited to diversion are currently electrically hauled);
- Retention of capacity at Acton Wells for GWML freight traffic will be an important consideration;
- To allow the operation of Channel Tunnel traffic of greater than W6 gauge without pathing limitations, it is likely to be necessary to route clear the Sevenoaks and Herne Hill routes to W9 gauge;
- Gauge enhancement would only be justified as part of a wider terminal-to-terminal scheme.

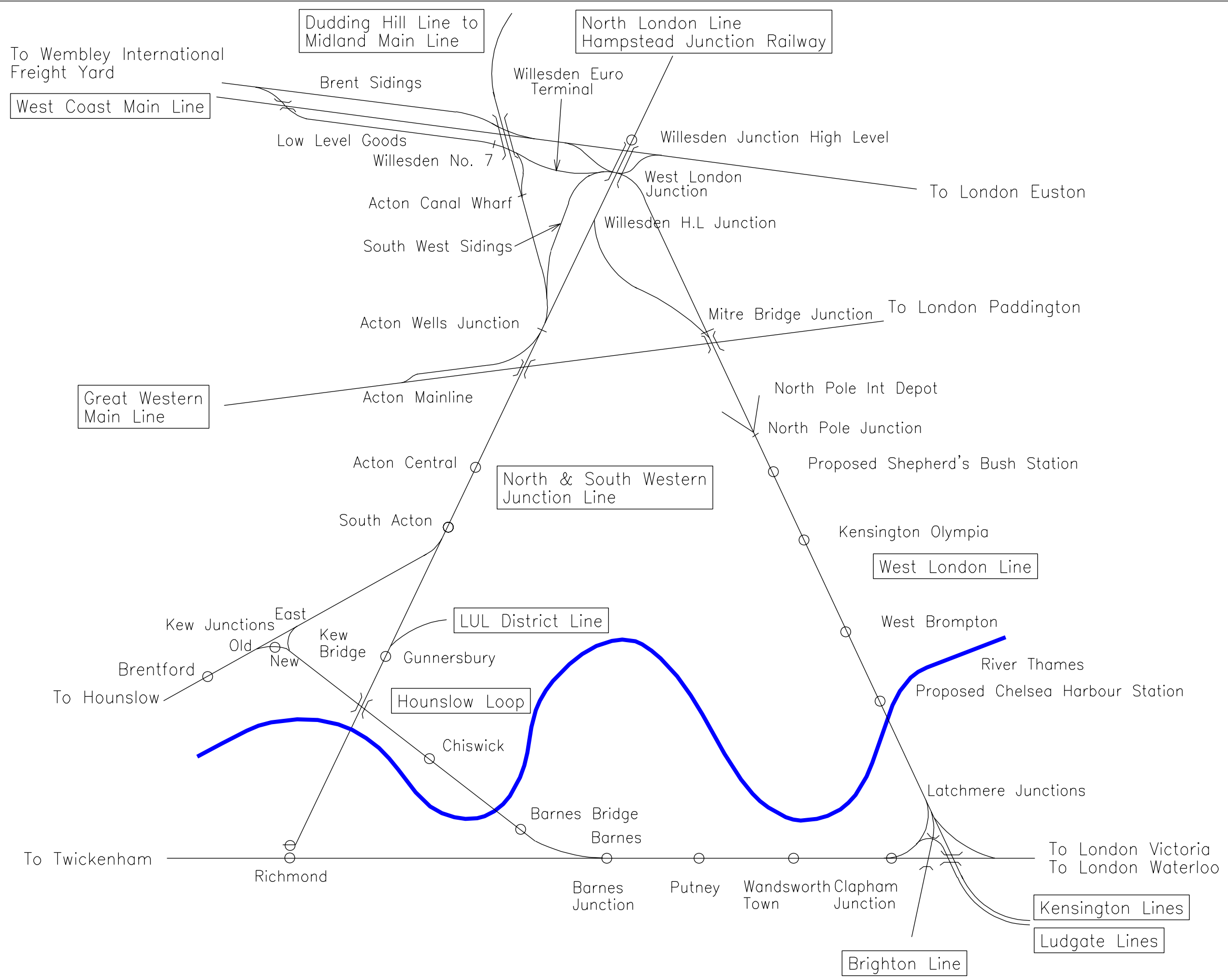


FIGURE 1: Study Area

See figure 4 for more detailed map.