



Planning Policy Assessment

Technical Report

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1. Introduction, Scope and Methodology

1.1 Background

- 1.1.1 This report provides a planning policy impact assessment for the proposed works for Crossrail. It provides an assessment of the scheme, both at route wide and site-specific levels against relevant planning policies.

1.2 Structure of the technical report

- 1.2.1 The remainder of the report covers:
- the scope of the report and the methodology used to reach the findings;
 - description of the project;
 - route wide assessment against national and regional spatial planning policy; and
 - site specific assessment against strategic and local planning policy.

1.3 Scope and Methodology of the Technical Report

- 1.3.1 The purpose of this report is to identify the extent to which Crossrail accords or conflicts with planning policy objectives and other material considerations. This comprises the following three elements: -
- The extent to which the Crossrail scheme as a whole contributes to national, regional and local planning policy objectives;
 - The extent to which component parts of the Crossrail scheme have local impacts on resources and receptors in the context of planning policies; and
 - the means of avoiding or mitigating against any adverse impacts in the context of planning policy objectives.

Scoping

- 1.3.2 The report takes into account temporary impacts (i.e. those which arise during the construction period) and permanent impacts.
- 1.3.3 The report considers land and other resources and receptors within the Limits of Land to be Acquired or Used (LLAU). Specifically, the report has consider extant planning permissions within 100 metres from a works site and 250 metres on the outer sections of the route. This is to take account of the fact that some of these

sections are less developed and there will be less of screening effect from buildings for future environmental receptors from noise and visual impacts.

Resources and Receptors

- 1.3.4 Resources include land, its current use and potential future use in development plans and planning consents.

Prediction of Impacts

- 1.3.5 The report has, like the Environmental Statement, distinguished between impacts at a route-wide level and those at a local level. The route-wide assessment will consider how the Crossrail proposals as a whole contribute to planning and transport objectives at the national and regional level. Specifically, it has considered the extent to which Crossrail meets policy objectives to:

- (i) Sustain London's World City role and develop international connections in the south-east;
- (ii) Focus growth and investment in the Thames Gateway;
- (iii) Integrate transport and land-use and address economic weaknesses in Priority Areas for Economic Regeneration (including East London and the Thames Gateway); and
- (iv) Promote sustainable economic growth, measures to tackle problems including investment in public transport in the Western Policy Area.

- 1.3.6 The local policy assessment has addressed the impact of Crossrail at the individual site level.

Evaluation of impacts

- 1.3.7 The evaluation of impacts to determine their significance has taken the following considerations into account:

- (i) The level of importance of the relevant planning policies and considerations;
- (ii) The relative scarcity of the resource;
- (iii) The sensitivity of the resource;
- (iv) The magnitude of the impact;
- (v) The conclusions reached in the technical reports of other specialists

The Planning Baseline Data

- 1.3.8 The policy assessment has taken into account planning permissions and proposals that are relevant to the hybrid Bill proposals.

- 1.3.9 Within Greater London, this information has been obtained from the Greater London Authority's London Development Monitoring System using the most recently available data.

1.3.10 Outside London, this data was obtained from a survey of the relevant Local Planning Authorities in Autumn 2004.

1.3.11 This information is contained in Appendix 2 of this report.

Mitigation Strategies

1.3.12 Crossrail has specified mitigation measures that will be adopted to ensure that contractors use good practice during construction to prevent or minimise adverse environmental impacts. The environmental specialists undertaking the assessment have assumed in their assessments that the measures will be implemented. The construction mitigation measures are set out in appendix B1 of the Crossrail ES. Where this technical report reports the planning policy impacts of a significant impact concluded in the Crossrail ES it is the residual impact after assumed mitigation.

1.4 The Hybrid Bill and the Planning Policy Assessment

1.4.1 Powers to construct and operate Crossrail are being sought through a hybrid Bill. This section sets out the powers sought through the hybrid Bill. The nature of these powers has impacts on some aspects of the planning policy assessment, for example the development of over site development and the level of design detail included at the hybrid Bill stage.

1.4.2 The Hybrid Bill seeks a range of powers to build and operate Crossrail. The Bill is promoted by the Secretary of State for Transport. Amongst other matters, the Bill if enacted would have the effect of:

- conferring the right to construct and maintain Crossrail and the other associated and enabling works that are summarised in *Chapter 2* and detailed in *Chapters 4 to 23* of this technical report;
- granting deemed planning permission for the construction of Crossrail and the other associated and enabling works;
- removing the need for listed building consent under Section 8 of the Planning (Listed Building and Conservation Areas) Act 1990, for the demolition, alteration or extension of the listed buildings specified in the Bill where this is necessary to construct Crossrail and the other associated and enabling works;
- removing the need to obtain conservation area consent under Section 74 of the Planning (Listed Building and Conservation Areas) Act 1990, for the demolition of the buildings and other structures specified in the Bill within designated conservation areas where this is necessary to construct Crossrail and the other associated and enabling works;
- conferring powers of compulsory acquisition or temporary possession of the land needed to construct Crossrail and the other associated and enabling works;

- authorising the stopping up or closure of highways and other public thoroughfares both permanently and temporarily, and the alteration of highways;
- authorising interference with navigable waterways; and
- conferring other powers required in connection with the construction and operation of Crossrail and the other associated and enabling works.

1.4.3 The deemed planning permission will be subject to conditions requiring the approval by the local planning authority, of certain matters of detail.

Level of Design Detail

1.4.4 The provisions of the hybrid Bill deem planning permission to be granted for the authorised works to construct the railway. The Bill provides for a special planning regime for the approval of detailed design by the local authority at a later date. At this stage, an assessment of the impact on townscape has been made on the basis of scale, height, and siting of the ticket halls and other related structures. Moreover, the assessment has assumed that there will be voids where buildings are demolished to accommodate the infrastructure works, given that powers for replacement development are not being sought through the Hybrid Bill. As such, at a number of worksites assessed throughout the route, there are apparent conflicts between the proposals and design policies.

1.4.5 It is likely that these impacts can be reduced or mitigated at a later stage when the detailed design of the operational elements of the scheme and materials to be used are agreed with the relevant local planning authority.

Over Site Development

1.4.6 The Bill seeks powers for the works which relate to the construction of the Crossrail railway, and the structures necessary for the operation of the railway. There are a number of locations where the Bill will seek powers to demolish listed buildings and buildings in conservation areas, but will not seek powers for the replacement of those buildings above or around the operational (including station) works. These locations effectively fall into two categories:

- those where operational works are to take place, such as the construction of stations or shafts; and
- those where demolition is required for use as a work site, but there are no permanent operational works on the land.

1.4.7 In all such instances the Bill does not seek permission for any non-operational development above the stations or structures (referred to as over-site development, or OSD). The intention is that the form of OSD should be applied for and determined through the normal planning process by the appropriate local planning authority (subject to call-in by, or appeal to, the First Secretary of State). The Bill contains provisions that modify the 1999 EIA Regulations and which require that any OSD will either require an EIA (where the works are integral to the new works) or will require it where the local planning authority determines that such development is likely to have significant environmental impacts.

- 1.4.8 Since this ES covers the likely significant environmental impacts arising from the specific authorisation sought from Parliament in the Bill (to which Article 1(5) of the EIA Directive applies), the approach in the Bill to EIA for OSD ensures that any such development which itself is likely to have significant environmental effects will be subject to a full EIA.
- 1.4.9 Although the Bill does not give powers for OSD, there is a very clear assumption, and indeed an overwhelming likelihood, that in these cases some form of OSD will take place at the same time as the construction of Crossrail, or very soon thereafter. It is unlikely, for the reasons set out below, that the only physical development on these sites will be the operational works authorised by the Bill.
- 1.4.10 For the purposes of assessing the environmental impact of the works for which the Bill seeks authorisation, it is important to consider what, if any, OSD is likely to take place. Many of the sites are in conservation areas and are highly sensitive. The reasons why it is extremely unlikely that only the operational works will be constructed are as follows:
- All the stations will have to be designed with assumptions being made about the size and general dimensions of the buildings that are likely to go above them. This is necessary in order to ensure the appropriate load bearing and servicing facilities.
 - The sites are within areas with very high land values, where there will be a strong financial incentive to redevelop.
 - The Secretary of State will give an undertaking to Parliament that outline planning applications for each of the OSDs will be submitted to the appropriate local planning authorities within a reasonable period of the Bill being submitted to Parliament.
- 1.4.11 For the purpose of this report any policy conflicts resulting from the loss of uses (e.g. commercial floorspace) will be assessed as permanent policy conflicts. It will however be noted that it is likely that the subsequent development of OSD is likely to reduce or mitigate these policy conflicts.

2. Summary Description of the Project

2.1 Crossrail – a General Introduction

2.1.1 Crossrail is a major new cross-London rail link project that has been developed to serve London and the southeast of England. Crossrail will support and maintain the status of London as a world city by providing a world class transport system. The project includes the construction of a twin-bore tunnel on an east-west alignment under central London and the upgrading of existing National Rail lines to the east and west of central London. The Crossrail route is shown in *Figure 2.1*.

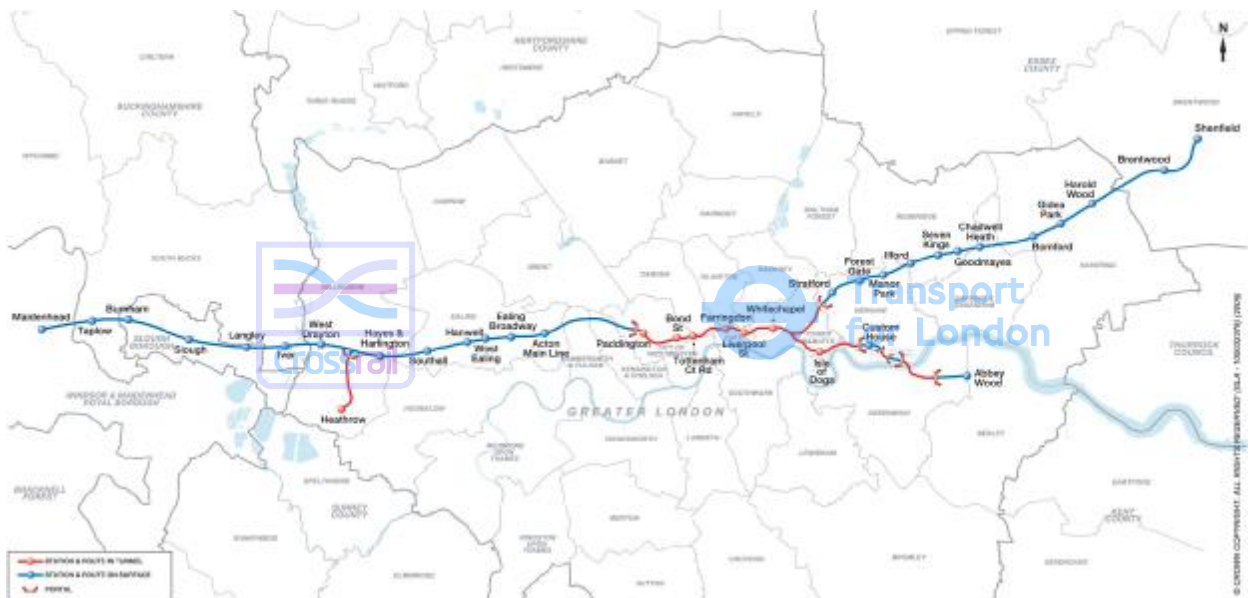


Figure 2.1: Crossrail Route

2.1.2 The project will enable the introduction of a range of new and improved rail journeys into and through London. It includes the construction of seven central area stations, providing interchange with London Underground, National Rail and London bus services, and the upgrading or renewal of existing stations outside central London. Crossrail will provide fast, efficient and convenient rail access to the West End and the City by linking existing routes from Sheffield and Abbey Wood in the east with Maidenhead and Heathrow in the west.

2.1.3 Crossrail will be a significant addition to the transport infrastructure of London and the southeast of England. It will deliver improved services for rail users through the relief of crowding, faster journeys and the provision of a range of new direct journey opportunities. The project will also have wider social and economic benefits for London and the southeast of England.

Route Overview

- 2.1.4 Crossrail's route has four distinct sections: a central section within central London and, outside central London, western, northeastern and southeastern sections.
- 2.1.5 In the west, Crossrail will use the Great Western Main Line between Maidenhead and Westbourne Park. The existing 25 kV overhead electrification between Paddington and Airport Junction will be extended to Maidenhead and bridge alterations will be undertaken as necessary. The main infrastructure changes are the construction of a flyover structure (the Stockley flyover) to allow Crossrail trains to access the existing tunnelled spur to Heathrow and the provision of a rail underpass (a dive-under) west of Acton Yard. A new line, within the existing railway corridor, will be provided between Langley and West Drayton. Enhancements will also be made to stations, with the most significant works being at Ealing Broadway, Southall, Hayes and Harlington, West Drayton, Slough and Maidenhead. New stabling sidings are also proposed at Old Oak Common, West Drayton and west of Maidenhead station.
- 2.1.6 The central route section will consist largely of a twin-bore tunnel beneath central London with portals at Royal Oak in the west, Pudding Mill Lane in the northeast and Victoria Dock Road in the southeast. The central route section extends from a point around 200m west of the A40 Westway to a point around 500m to the east of the portal at Pudding Mill Lane in the northeast and a point just to the east of Poplar Dock and the A1206 Prestons Road in the Isle of Dogs in the southeast. New stations and associated structures, such as ventilation shafts, will be provided along this part of the route.
- 2.1.7 On the northeast route section, Crossrail will use the existing Great Eastern Main Line between Pudding Mill Lane and Shenfield. The main infrastructure changes are a new train maintenance depot west of Romford station and the reinstatement of a track between Goodmayes and Chadwell Heath. Enhancements will also be made to stations, with the most significant works being proposed at Ilford and Romford. This route has existing 25kV overhead electrification. New stabling facilities will be provided at Gidea Park.
- 2.1.8 The southeast route section runs between a point to the east of the Isle of Dogs station and the eastern terminus at Abbey Wood, where Crossrail will serve a reconstructed station. Crossrail will operate in a twin-bore tunnel to Victoria Dock portal where it will serve a reconstructed station at Custom House. The route will then follow the existing alignment currently used by the North London Line through the Connaught Tunnel to Silvertown. At North Woolwich, a new twin-bore tunnel to Plumstead, referred to as the Thames Tunnel, will pass beneath the River Thames. Two new tracks will be provided between Plumstead and a point east of Abbey Wood station to accommodate Crossrail services on the North Kent Line corridor. This route will be provided with 25kV overhead electrification on the Crossrail lines.
- 2.1.9 The scheme comprises temporary, permanent and enabling works.

2.2 Permanent Works

- 2.2.1 The permanent operational works are summarised below.

Tunnels

- 2.2.2 Crossrail's twin-bore tunnels, which represent the largest scale engineering component of the project, will run through the central section and extend into the southeastern section of the route.
- 2.2.3 The twin-bore tunnels will run from Royal Oak, located to the west of Paddington, and will pass beneath Hyde Park, the West End, Holborn, Clerkenwell, Shoreditch and Stepney. At a point beneath Stepney Green, the route will fork. One set of tunnels will continue to the northeast before emerging at the surface at Pudding Mill Lane near Stratford, while the other set of tunnels will head southeastwards and emerge on Crossrail's southeastern section adjacent to Victoria Dock Road in the Royal Docks area. Twin-bore tunnels will be constructed between North Woolwich and Plumstead to take the southeastern section of the route under the River Thames. In total, 46 km of running tunnel will be constructed (equivalent to 23 km of twin-bore tunnel).

Stations

- 2.2.4 Seven new stations will be located along the tunnelled section at Paddington, Bond Street, Tottenham Court Road, Farringdon, Liverpool Street, Whitechapel and the Isle of Dogs. Stations will include 210 m long platforms and a step-free access route between the street and Crossrail platforms. Each station will have two ticket halls, with the exception of those at Whitechapel and the Isle of Dogs. At each station, the platform tunnels will be constructed to allow for a future upgrade of platforms to 245 m for the operation of 240 m long 12-car trains, should demand for Crossrail services necessitate this.
- 2.2.5 At existing stations outside the central area, platforms will be extended where necessary to accommodate the length of Crossrail's trains. Other works include expanded ticket halls and enhanced passenger facilities.

Access and ventilation shafts

- 2.2.6 Throughout the tunnelled section of the route, where distances between stations exceed 1 km, intermediate shafts independent from stations and the tunnel portals will be constructed in accordance with safety standards. These are sub-surface facilities with surface level access structures. The shafts provide one or more of the following features:
- emergency intervention points (EIPs), located at a maximum spacing of approximately 1 km, to be used by the emergency services to access the tunnels – the shafts include lifts or hoists and stairs, with a parking area provided at the surface for emergency services;
 - escape facilities, consisting of lifts and stairs to allow for passenger evacuation, with a place of safety provided at the surface; and
 - ventilation facilities, containing ventilation fans used to reduce temperatures in the tunnel and to provide forced ventilation for smoke control during emergencies.

2.2.7 Table 2.1 below lists the location of the shafts.

Location	EIP	Escape	Ventilation
Westbourne Bridge	P		P
Hyde Park	P		P
Park Lane	P		P
Fisher Street	P		P
Hanbury Street	P		P
Stepney Green	P	P	P
Mile End Park	P	P	P
Eleanor Street	P		P
Lowell Street	P	P	P
Hertsmere Road	P		
Blackwall Way	P		
Limmo Peninsular	P	P	P
Warren Lane	P		P
Arsenal Way	P	P	P

2.2.8 EIP and escape facilities will also be provided at the Pudding Mill Lane, Victoria Dock, North Woolwich and Plumstead tunnel portals.³

Depot and Stabling

2.2.9 Crossrail trains will be maintained at a new depot that will be located at the Railway Goods Yard and Gasworks site to the west of Romford station. Trains will also be stabled at other locations at the start and end of the day and between the peak periods, as listed in *Table 2.2*.

Maintenance and Stabling Facilities

Location	Facilities	Capacity (number of trains)
Romford	New maintenance, train washing and stabling facility	15
Gidea Park	Existing stabling extended	8
Old Oak Common	Existing stabling modified, train washing	12
West Drayton	New stabling facility	22
Maidenhead	New stabling facility	6

Traction Power and signalling

2.2.10 Traction power will be provided by overhead electrification for most of the route. Power will be fed to the overhead wires from feeder stations which in turn take their power from the National Grid.

2.2.11 New overhead line equipment will be provided on part of the western route section and along the south-eastern route section. Overhead electrification equipment will comprise steel gantries with suspended catenary wires and

contact wires which will deliver power to the trains. The gantries themselves will consist of portal frames spanning each side of the four-track rail corridor which will support the catenary. The gantries will be positioned every 50 metres or so, although variations to this will be used in order to avoid structures such as bridges. The height of the gantries will be about 6 metres above rail level and the contact wires will normally be positioned just over 4 metres above the rail.

2.3 Operations

Daily operations

- 2.3.1 Crossrail services will call at all stations with a peak frequency between Whitechapel and Paddington of: -
- 24 trains per hour (tph) from 0745 to 0915 and 1645 to 1815;
 - 20 tph from 0700 to 0745, 0900 to 1000, 1600 to 1645 and 1815 to 1900; and
 - 16 tph for much of the daytime, evening and weekend periods.
- 2.3.2 Services will operate at hours similar to the Underground, with the first trains due to arrive at Tottenham Court Road at 0545 and the last trains at 0030 Monday to Saturday. On Sunday, services will start later, at 0630.
- 2.3.3 During weekday peak hours, it has been assumed that Crossrail will operate 10tph from the Great Western Line (four from Maidenhead, four from Heathrow, and two from West Drayton) with 14 tph starting at Paddington, travelling east. To the east of Central London, 12tph will operate from Shenfield and 12tph from Abbey Wood.

Employment

- 2.3.4 Approximately 1,360 staff positions will be created by Crossrail in order to operate and maintain the trains, stations and tracks. It is estimated that approximately 990 of these positions will be new jobs, while the remainder will be taken up by staff transferring from existing rail operations. The range of skills employed will include train drivers, on-train revenue protection staff, station staff, head office functions and maintenance staff at the depot.

2.4 Construction Works

Construction Strategy

- 2.4.1 A construction strategy has been developed with the following objectives:
- To meet the requirements of all the relevant statutory legislation, codes of practice and standards;

- To limit adverse impact on local communities and the environment so far as reasonably practicable;
- To carry out the planning and delivery of the project in the most cost effective manner;
- To limit impacts on the operations of Network Rail, London Underground and other rail companies;
- To implement a community liaison plan including a complaints help-line and an independently appointed Complaints Commissioner;
- To remove, where reasonably practicable, excavated material by rail and water transport, and import construction material by rail; and
- To implement a travel plan for construction workers.

Working Hours

- 2.4.2 Assumed working hours are 0700 to 1900 on weekdays days and 0700 to 1400 on Saturdays. Only non-disruptive preparatory, repairs and maintenance will be carried out on Saturday afternoons or Sundays between 0800 and 1700. There are certain general exceptions to these hours, which are described below. In addition, it may be necessary in exceptional cases of urgency to depart from these assumed hours.
- 2.4.3 Tunnelling works together with directly associated activities (such as installation and maintenance of tunnelling equipment, construction of cross-passages, installation of tunnel linings and transportation, storage and removal of excavated material) will generally be carried out on a 24 hour per day, seven days per week basis. Track laying and internal fit out works within stations and tunnels may also be carried out on a 24 hour per day, seven days per week basis.
- 2.4.4 Where practicable, night time surface working will be kept to a minimum. However, certain works requiring temporary possession of roads and railways for safety reasons or operational requirements, to limit disruption to the travelling public, and works in connection with utilities when demand is low will need to be undertaken outside the assumed working hours. This will include Saturday afternoon, night-time, Sunday and/or Bank Holiday working from time to time. Longer term possessions (in excess of one week) will be required for more major works.
- 2.4.5 Deliveries will be arranged to minimise impacts on the road system as far as reasonably practicable. Abnormal loads may also be delivered or removed outside the assumed working hours subject to the requirements and approval of the relevant authorities.

Excavated Material and Waste Management

- 2.4.6 The EIA has established where, and in what quantities, surplus materials will arise. The materials have been categorised as excavated materials and demolition and construction wastes.
- 2.4.7 The construction of Crossrail is expected to generate approximately 8 million m³ of excavated material and demolition and construction waste. This figure represents the bulked volume of excavated material allowing for the increase in volume of material following excavation.
- 2.4.8 It has been estimated that approximately 30% of surplus material will be transported by rail, 15% by barge and the remainder by road. However, it is possible that there may be opportunities to increase the use of barge transportation.
- 2.4.9 A hierarchical approach to waste management will be applied in accordance with the following:
- minimise generation of excavated materials and wastes;
 - re-use and recycle excavated materials and waste within the Crossrail project;
 - re-use and recycle excavated materials and waste through environmentally beneficial use at registered exempt sites (e.g. landfill restoration); and
 - dispose of surplus excavated materials and waste at licensed landfill sites.