

3. Scope and methodology

3.1 Introduction

- 3.1.1 A Hybrid Bill has been submitted to Parliament seeking powers to construct Crossrail Line 1. An Environmental Statement (ES) has been deposited with the Hybrid Bill in accordance with the provisions of Parliamentary Standing Order 27A. The ES documents the results of the Environmental Impact Assessment (EIA).
- 3.1.2 The EIA process was undertaken in accordance with the Scoping and Methodology Report (Appendix A2 of the Crossrail ES) that set out the approach to be used by all technical disciplines.
- 3.1.3 This Technical Report provides the detailed methodology, assumptions, baseline, analysis and assessments for the socio-economic elements of the EIA in accordance with the Scoping and Methodology Report and that are reported in the ES.

3.2 Approach to the EIA

Basis of the assessment

- 3.2.1 The socio-economic impacts of the scheme have been estimated by comparing the predicted baseline conditions at the start of construction (that is, the situation without the proposed scheme) with the conditions that would prevail were the scheme to be constructed and operated. The assessment was carried out in the following stages:
 - identification of potential impacts;
 - definition of the temporal and spatial scope;
 - identification of resources and receptors;
 - establishment of baseline;
 - prediction of impacts;
 - evaluation of impacts;
 - mitigation of impacts; and
 - consultation.

Identification of potential impacts

- 3.2.2 The ES, in relation to the socio-economic impacts, describes the likely significant impacts of the project on people. It considers
- **positive impacts** that have a beneficial influence;
 - **negative impacts** that have an adverse influence;
 - **temporary impacts** that persist for a limited period only, due, for example, to particular construction activities;
 - **permanent impacts** that result from an irreversible change to the baseline environment (e.g. land take) or which persist as a result of the operation of the scheme;
 - **direct impacts** that arise from activities that form an integral part of the project (e.g. new infrastructure);
 - **indirect impacts** that arise from activities not explicitly forming part of the project (e.g. agglomeration benefits); and
 - **secondary impacts** that arise as a result of an initial effect of the scheme (e.g. improved employment opportunities for those in regeneration areas).
- 3.2.3 Potential impacts during construction may comprise:
- the loss of jobs due to temporary displacement or disruption of businesses resulting from temporary land take or other construction impacts;
 - risk of indirect loss of jobs due to a reduction in spending associated with the temporary displacement of businesses and jobs by the project;
 - direct creation of construction jobs; and
 - indirect creation of jobs, due to the purchase of materials and services and the spending of incomes associated with construction of the project.
- 3.2.4 Any indirect loss of jobs due to a reduction in spending associated with the temporary displacement of businesses and jobs has not been assessed. This is due to the nature of London's economy (for example, the extent of commuting so that any employment impacts are dissipated throughout the wider South East) and the potential for businesses to relocate within the area.
- 3.2.5 Permanent employment impacts may comprise:

- increase in employment in Central London as a result of an increase in commercial and residential development due to increased transport capacity;
 - direct creation of jobs due to the operation of the project;
 - indirect creation of jobs and consequential changes to employment markets, due to the purchase of materials and services and the spending of income associated with the operation of the new service;
 - risk of direct loss of jobs due to the permanent displacement of businesses; and
 - risk of indirect loss of jobs due to a reduction in spending associated with the permanent displacement of businesses and jobs by the project.
- 3.2.6 The latter indirect impacts have not been assessed. This is due to the nature of the scheme in that spending will be global rather than local and London's economy in that employment impacts are dissipated throughout the wider South East.
- 3.2.7 Property and regeneration impacts may comprise:
- increase in commercial and residential development as a result of improved public transport accessibility;
 - take up of employment as a result of Crossrail by those who are currently unemployed or economically inactive; and
 - other social inclusion benefits.

Temporal scope

- 3.2.8 The EIA addresses the construction phase, currently anticipated to take place between 2007 and 2012. The duration of works at specific sites will vary and will normally be less than the whole of this period.
- 3.2.9 The temporal scope also considers the operational phase. This currently assumes scheme opening in 2013. Where impacts are dependent on longer-term considerations such as traffic growth or future development (which affects the socio-economic impacts) the operational phase extends beyond the scheme opening to take account of the longer-term nature of impacts which might occur.
- 3.2.10 Socio-economic impacts are identified for construction and operation. Those impacts that occur in advance of construction have also been taken into account (for example, development decisions made in anticipation of the project). The long-term

socio-economic impacts of the project extend well beyond the opening of the scheme.

Spatial scope

3.2.11 The geographical coverage of the EIA takes into account the:

- physical extent of the proposed works, defined by the limits of land to be acquired or used (LLAU), temporarily or permanently;
- nature of the baseline environment and the manner in which impacts are likely to be distributed; and
- pattern of government administrative boundaries, which provide the planning and policy context for the project and dictate data availability.

3.2.12 The significance of impacts can vary spatially. For example, some may be confined to a single work site whilst others may be at a project-wide or regional level. Socio-economic impacts are addressed at the local and sub-regional levels. Local impacts are identified in the context of station catchment areas, district and or boroughs through which Crossrail passes. Sub-regional impacts are identified in the context of the relevant policy.

Identification of resources and receptors

3.2.13 For the socio-economic assessment *environmental resources* are effectively places of employment while *environmental receptors* are defined as people.

3.2.14 Effects on the following resources and receptors have been considered:

- individual businesses and properties;
- the employment market;
- the housing market; and
- the commercial property market.

3.2.15 The latter two are considered in relation to new developments that result from the wider impacts of the scheme and their resulting employment impacts. That is, as a consequence of improved accessibility and image of locations served by Crossrail.

Establishment of baseline

3.2.16 The extent of the baseline assessment was determined using both professional judgement and industry best practice. The

collection of baseline data was achieved through desk study, consultation, field survey and monitoring. Account was taken of market conditions and employment patterns prevailing during the assessment. These were identified from the most recently available data.

3.2.17 Sources of information included:

- London Plan including employment forecasts to 2016;
- Railplan outputs on levels of crowding and accessibility;
- CAPITAL outputs on accessibility changes to key centres, regeneration areas and areas of deprivation;
- construction costs, data on output per worker and regional employment multipliers;
- surveys of commercial premises affected by demolition or land take;
- regeneration strategies of local authorities and other agencies affected by the project, including the identification of development sites;
- forecasts and proposals for the provision of housing and commercial development held by local authorities and strategic authorities including the regional development agencies;
- strategic and local authority research and policies relating to employment and housing land development densities;
- data on the number of businesses, employment levels, skills and travel-to-work patterns from official sources such as the Office for National Statistics; and
- commercial floorspace data from the Valuation Office, property reports from commercial agents and reports from the GLA on office, industrial, warehousing and retail demand in London.

Prediction of impacts

3.2.18 The prediction of impacts examines the change to the baseline environment that could result from the construction and operation of Crossrail. Impacts are classified into one or more of the following: positive, negative, temporary, permanent, direct, indirect, secondary or cumulative.

3.2.19 Impacts are predicted through an examination of the interaction between the:

- known or likely presence of an environmental receptor or resource;
- value of those resources, reflecting for instance their designated status as well as their qualitative criteria such as rarity, extent and condition;
- vulnerability or sensitivity of affected resources;
- number and sensitivity of affected receptors;
- extent, nature and duration of physical change resulting from the construction or operation of Crossrail;
- ability of the resource/receptor to absorb change; and
- effectiveness of incorporated mitigation.

3.2.20 The following prediction methods were used:

- the loss of employment in business displaced by construction of the project has been estimated from surveys of businesses affected. Where current job numbers could not be obtained from such surveys, standard employment densities for the relevant type and location of development were used based on floorspace data from the Valuation Office or site surveys to assess floorspace/employment;
- employment created directly by the construction of the project was assessed by detailed analysis of the scheme's construction cost, the split between labour and capital components and average employment costs;
- employment created directly by the operation of Crossrail was derived from project and rail industry sources;
- indirect employment was estimated by the application of an appropriate employment multiplier to the calculations of direct employment creation;
- transport modelling was used to measure improved accessibility to and from key development sites and regeneration areas. The increase in development resulting from improved accessibility was estimated on the basis of professional judgement and opinion on the current markets for commercial and residential development, market weaknesses and likely impact on image and developer confidence; and
- transport modelling was used to assess levels of crowding and congested links within central London and thereafter the implications of the lessening of transport constraints on employment growth.

- 3.2.21 The timescales involved with the project will undoubtedly mean that there will be some changes in occupancy between the time when the assessment was undertaken and when properties are acquired. In addition some properties are presently vacant. The approach taken, therefore, has been to assess job displacement in terms of the loss of employment space and hence the potential number of jobs that could be accommodated.

Evaluation of impacts

- 3.2.22 The ES identifies all environmental impacts that are considered to be “significant”. There is no statutory definition of what constitutes a significant impact. For the purposes of this project, a significant impact has been defined as an impact which, either in isolation or combination with others, should (in the opinion of the Crossrail EIA team) be taken into account in the decision making process. This definition is consistent with what has been adopted for EIAs of other major rail schemes in the UK.
- 3.2.23 The evaluation of impacts takes account of incorporated mitigation. If significant impacts are identified once this mitigation has been applied, these are termed residual impacts. The ‘Residual Significant Impacts’ are reported in the main body of the ES.
- 3.2.24 Significant impacts were evaluated based on the following criteria:
- **magnitude of change** considers the absolute number of people or businesses affected and the nature of the area in which effects are experienced;
 - **scale of the effect** considers the relative magnitude of each effect in its relevant market context (for example, the effects on local employment was considered in the context of the overall size of the local labour market);
 - **distribution of the effect** takes account of the spatial distribution of the employment and regeneration impacts;
 - **timing of change**, since more weight is given to long-term, permanent changes than to short-term, temporary effects; and
 - **scope for adjustment or mitigation**. The socio-economic study is concerned in part with markets. Markets adjust themselves continually to changes in supply and demand. This adjustment was a criterion in assessing significance.

Mitigation of impacts

- 3.2.25 The Secretary of State will seek powers to compulsorily acquire the freehold interest of land required for the Crossrail works.

These powers are contained in the Bill. Powers to acquire land for the relocation of businesses are generally not contained in the Bill. Instead, impacts will be mitigated through the payment of compensation for land compulsory acquired in accordance with the general statutory framework incorporated within the Bill, the Crossrail Land Acquisition Policy and the Crossrail Disposal Policy.

Consultation

- 3.2.26 For the socio-economic assessment the principal consultees were local authorities and strategic authorities (including the regional development agencies). Where appropriate, landowners, businesses, private developers and local agents were also consulted regarding potential effects on the property market.

Limitations

- 3.2.27 The time scale of the project is a major limitation to assessing its impact with certainty. Potential changes in the property and labour markets and the economy amongst others mean any projections have to rely on assumptions about future prospects. These are based on past experience and relationships between economic variables. These past relationships and performances are not necessarily indicative of future prospects.
- 3.2.28 The majority of the work for this assessment was undertaken in 2004 using the latest available data including detailed local area statistics from the 2001 Population Census. The timeliness and availability of data will always be a limiting factor in assessments of this nature.
- 3.2.29 The uncertainty regarding the timing of some other major projects, which will affect land take required as well as the development of an area, add to the difficulty of quantifying the marginal employment impact of Crossrail alone.