



The Impact of Crossrail

Secondary research briefing paper

This paper brings together a range of secondary sources which assess the likely impact of Crossrail. It focuses on three main areas: the wider economic benefits for London and the UK, including short and long-term benefits; the impact on the property and retail market around Crossrail stations and along the route, and a specific focus on the Crossrail stations in City of London and the surrounding area.

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Summary

- Crossrail will bring 1.5 million more people within a 45 minutes commute of the existing major employment centres of the West End, the City and Canary Wharf (up from 5 million currently).
- Cebr estimate as a result of Crossrail there will be 63,000 additional jobs in the City and the Isle of Dogs by 2023, another 85,000 jobs in the Thames Gateway and 33,000 elsewhere in London (including the West End).
- Commercial office values around Crossrail stations in central London will increase over the next decade, with an uplift of 10% in capital value above an already rising baseline projection.
- Residential capital values are projected to increase immediately around Crossrail stations in central London by 25% over the next decade, again above a rising baseline projection.
- Farringdon station will become one of the busiest train stations in Britain. It could achieve demand of some 27 million passengers a year and, on average, some 102,000 passengers per day in 2026. This compares to current totals of 19 million annual passengers and 53,000 passengers per day.
- Crossrail will cut journey times across London. For example, the direct train journey time from Heathrow to the City of London (Liverpool Street) will reduce from 55 minutes to 35 minutes.
- 3,900 additional workers who are not currently economically active could come into employment after Crossrail comes into operation around the Liverpool Street area, as employment opportunities increase.
- 10% increase in the number of 18 to 24 year olds living within 30 minutes of central London universities, for example City University, London Metropolitan University (9%), Guildhall School of Music and Drama (8%), and the Queen Mary College, University of London (Farringdon campus) (18%).

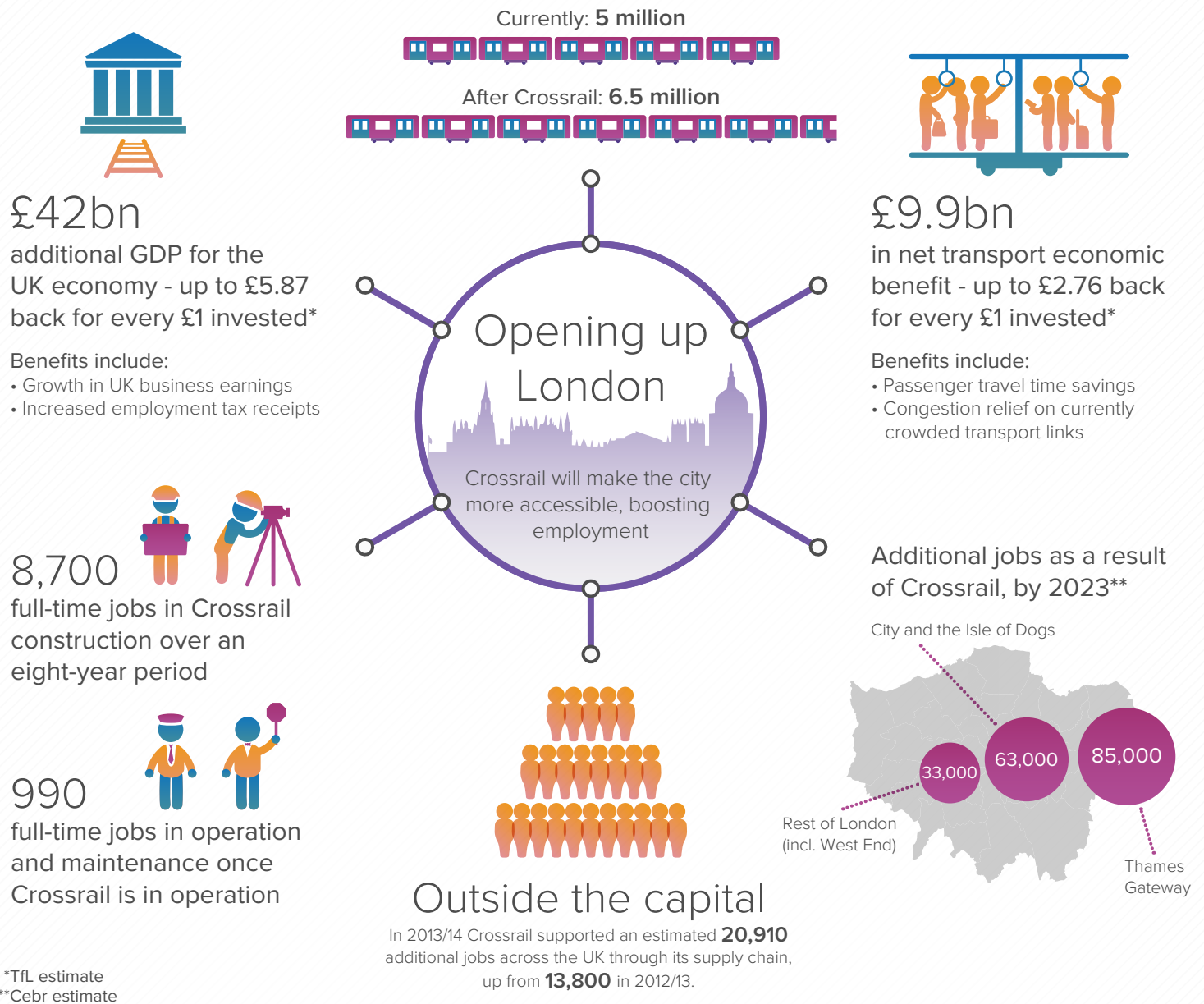
A capital investment:

How the UK economy will benefit from Crossrail



Crossrail will bring jobs and improved connectivity for London and the South East

People living within a 45-minute commute of the existing major employment centres of the West End, the City and Canary Wharf:



Crossrail will reduce journey times, making the City of London even more competitive



Crossrail will reduce congestion on London Underground lines and the Southeastern trains network by between **20% and 60%**

1 Introduction

1.1 Outline

This paper brings together a range of secondary sources which assess the likely impact of Crossrail. It focuses on three main areas: the wider economic benefits for London and the UK, including short and long-term benefits; the impact on the property and retail market around Crossrail stations and along the route, and a specific focus on the Crossrail stations in City of London and the immediately surrounding area.

1.2 Scope

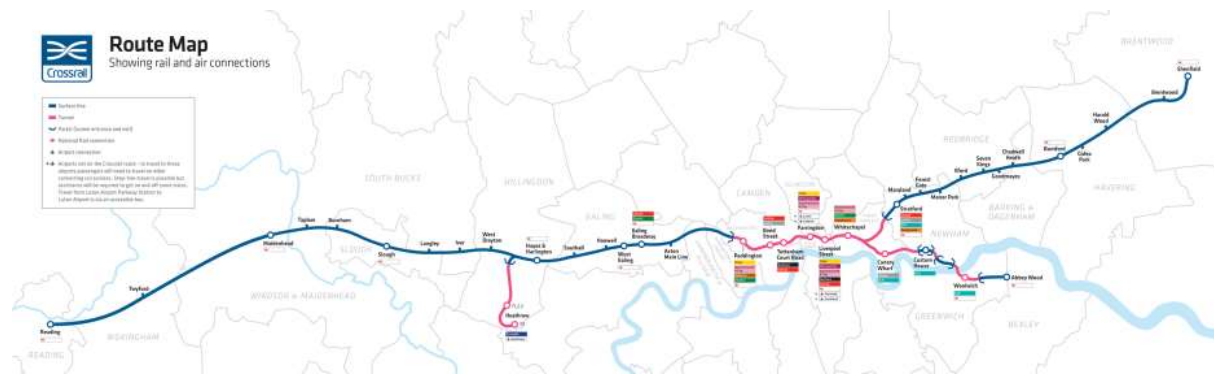
This paper provides a summary of publically available evidence and forecasts on the impact of Crossrail. Data sources used include a number of technical reports commissioned by Crossrail Limited, as well as secondary research and reports from other credible sources. The data contained in this paper seeks to be the most up-to-date available at the time of writing.

It is worth noting that, given that much of the data is based on forecasts and predications, within the range of sources used there may be discrepancies in the figures estimated (for example, there are a range of estimates looking at the impact of transport constraints without Crossrail, and the beneficial impact of increasing transport capacity in terms of employment numbers).

1.3 Usage

- The intention is for this paper to pull together a range of data sources to act as a central resource of key information, which can be used as necessary.
- The intention is to keep the statistics up to date as new data emerges, although it should be noted that where these are derived from one-off reports this may not be possible. Likewise the facts and data from reports given here represent only a subset of the information contained within the reports.

2 About Crossrail



Source: Crossrail Ltd (see Appendix 1 for full size route map)

Crossrail is a new suburban rail service for London and the South-East. Crossrail will, for the first time, deliver a direct connection between all of London's main employment centres; linking Heathrow with Paddington, the West End, the City and Canary Wharf.

It has been designed to relieve congestion on London's transport system, reduce journey times to key commuter areas, and will support jobs by bringing extra transport capacity to areas along the route, although some reports have suggested that the network will be fully utilised from the day it opens with no spare capacity.¹

Two of the ten new stations being built fall within the City's boundaries – a new eastern ticket hall for Crossrail's Farringdon station being constructed at Lindsey Street, and a new Crossrail station at Liverpool Street. The Crossrail route through the City of London will consist of approximately 1.5 kilometres (km) of underground tunnelling and is set to create extra capacity, improved connections and new transport links to the City of London.

Crossrail will make it easier for City businesses to move around London, as well as increasing the number of people who are able to access employment destinations throughout London. Journey times across London will also be reduced. Travel time from Liverpool Street to Canary Wharf will be reduced to just six minutes, while travelling to Paddington will take ten minutes. The direct train journey time to Heathrow from the City of London (Liverpool Street) using Crossrail will reduce from 55 minutes to 35 minutes.

2.1 Background statistics

- Crossrail will link 40 stations through 21 London boroughs.
- Crossrail will increase London's rail capacity by 10%.
- An estimated 200 million passengers a year will use Crossrail.

¹ Transport for London commissioner warns of 'calamitous' impacts if government funding stalls, The Guardian, 13th March 2013

- Up to 24 trains per hour will operate in the central section between Paddington and Liverpool Street during peak periods.
- The total funding envelope available to deliver Crossrail is £14.8 billion.
- Crossrail will reduce congestion on London Underground lines (particularly Bakerloo, Central, District and Jubilee) and the Southeastern trains network by between 20% and 60%.
- The route will run over 100km from Reading and Heathrow in the west to Shenfield and Abbey Wood in the east.

2.2 Timeline

- 2009 - Crossrail construction starts.
- February 2014 - the contract for Crossrail's new high-capacity rolling stock is awarded.
- July 2014 - the contract for the Crossrail Train Operating Concession (CTOC) is awarded to MTR Corporate (Crossrail) Ltd. The £1.4 billion contract covers eight years with an option to extend to ten years.
- End 2014 - the vast majority of the 26 miles of tunnelling and the major civil engineering works are complete.
- 2015 to 2017 - major fit-out of stations and tunnels will continue as does the major upgrade of the existing rail network for Crossrail services by Network Rail.
- Late 2018 - the first Crossrail services will start through the central London tunnelled section.
- Late 2019 - the whole Crossrail line is due to be fully operational.

Sources: Crossrail Ltd, <http://www.crossrail.co.uk/benefits/crossrail-in-numbers>; <http://www.crossrail.co.uk/route/stations/liverpool-street/key-facts> and <http://www.crossrail.co.uk/benefits/a-world-class-new-railway/> Crossrail Ltd, *Crossrail context report prepared for the City of London*, January 2009; *New images show Liverpool Street Crossrail Station making good progress*, Crossrail Ltd, 10th June 2013; *Crossrail Business Case Update: Summary Report*, July 2011.

3 Economic benefits

Crossrail's wider benefits could generate £42 billion additional GDP for the UK economy

3.1 Short-term impacts

- Crossrail construction will generate around 8,700 permanent full-time jobs over an eight-year period – given the project and specialist labour required, these jobs are likely to be filled from the London and wider UK or international market.
- Operation and maintenance employment will create an additional 990 full-time jobs once Crossrail is in operation.
- Looking ahead, station staff requirement will create 25 to 30 jobs per station at new central stations (from Paddington to Whitechapel).
- Further jobs will come from indirect impacts e.g. firms supplying the project during construction and providing services to those directly employed by Crossrail.
- Crossrail is expected to create 14,500 jobs in total during its construction and operation (including direct, indirect and induced employment). However these will not all be new jobs due to some local redistribution and displacement.
- More than 400 apprenticeships are expected to be created over the course of the project (over 350 have been created at January 2015), and its Tunnelling and Underground Construction Academy will train up to 3,500 people.
- British businesses have been awarded 97% of contracts. These suppliers are located across the UK – 62% of them outside of London – extending economic benefit from the project across the country.
 - In 2013/14 Crossrail supported an estimated 20,910 additional jobs across the UK through its supply chain, up from 13,800 in 2012/13.
 - Small and medium-sized businesses stand to benefit significantly benefit: 62% of work is going to SMEs.

Sources: Crossrail: Socio-Economic Technical Report: 7. Route-wide impacts: Direct employment impacts, Colin Buchanan; Crossrail Ltd, <http://www.crossrail.co.uk/benefits/crossrail-in-numbers> and <http://www.crossrail.co.uk/careers/tuca>; *Crossrail Sustainability Report 2014*, Crossrail Ltd.

3.2 Long-term impacts

- The latest London Plan (January 2014) projects that by 2036, there will be an additional 1.9 million people and 861,000 new jobs in London, accompanied by a 20% growth in public transport trips.
- Property and labour shortages will not constrain future growth of employment in central London, but will place additional demands on an already crowded rail network and a lack of rail capacity could constrain growth. Analysis of historic trends shows passengers are averse to crowding and that highly crowded links experience much lower growth than others.

- Due largely to the concentration of employment growth in the central area, this growth results in a disproportionate increase in public transport use. Total morning peak period public transport trips in 2016 are expected to rise by 25%.
- A range of consultancies have estimated the impact of transport constraints without Crossrail, and the beneficial impact of increasing transport capacity:
 - Volterra - by 2016 the transport constraint without Crossrail would have reduced employment within the West End, City and Isle of Dogs by between 5,000 and 13,000. The size of the constraint increases to 33,000 and 40,000 jobs by 2027.
 - Oxford Economics Forecasting - by 2016 the transport constraint without Crossrail would have reduced employment within the West End, the City of London and the Isle of Dogs by 10,000 compared to the with-Crossrail scenario. By 2027 central area employment is reduced by 23,000 without Crossrail.
 - Cebr (in work undertaken for the Canary Wharf Group) - estimate as a result of Crossrail there would be 63,000 additional jobs in the City and the Isle of Dogs by 2023, another 85,000 jobs in the Thames Gateway and 33,000 elsewhere in London (including the West End).
- Crossrail will bring 1.5 million more people within a 45 minutes commute of the existing major employment centres of the West End, the City and Canary Wharf (up from 5 million currently) – giving employers better access to a wider and more highly skilled pool of labour.

3.3 Cost benefit ratio and GDP impacts

- Crossrail is projected to generate £9.9 billion in net transport economic benefit, equivalent to £2.76 for every £1 spent using Transport for London (TfL)'s methodology, or £5.4 billion and £1.97 for every £1 spent using the Department for Transport (DfT)'s methodology. Volterra estimate user benefits at £5 billion. These figures include:
 - Passenger travel time savings.
 - Congestion relief on currently crowded road, rail and London Underground links.
 - 40% of these transport benefits derive from Crossrail's ability to increase the capacity of London's transport network to meet existing and future needs.
- Wider economic benefits in terms of increased Gross Domestic Product (GDP) for the UK economy estimates vary; TfL methodology forecasts total benefit at £42 billion, or £3.97 to £5.87 for every £1 spent, and DfT methodology estimates £6-15 billion, or £3.09 to £3.53 for every £1 spent. Volterra have estimated the wider benefits at £44 billion. These benefits include:
 - Increased tax receipts to the government (TfL - £7 billion to £18 billion, DfT - £6 billion to £9 billion, Volterra - £14 billion).
 - Enabling the growth of Central London employment, generating higher earnings for UK businesses, and increased employment tax receipts.
 - Agglomeration benefits.
 - Re-allocation of labour to more productive jobs.

3.4 Accessibility impacts – education, hospitals and labour

- 10% increase in the number of 18 to 24 year olds living within 30 minutes of central London universities, for example City University, London Metropolitan University (9%), Guildhall School of Music and Drama (8%), and the Queen Mary College, University of London (Farringdon campus) (18%).
- 9% and 7% increases in the number of households living within 30 and 60 minutes of regional hospitals served by Crossrail stations respectively, for example St. Bartholomew's Hospital accessibility within 30 minutes will increase by 21%.
- 3,900 additional workers who are not currently economically active could come into employment after Crossrail comes into operation around the Liverpool Street area, as employment opportunities increase.
- Looking at Census Travel to Work data, at a London-wide basis, a net gain of 9,000 jobs (which includes positive and negative impacts from increased competition) could be taken by unemployed and economically inactive residents along the Crossrail route due to improved accessibility to work. In Central London specifically:
 - 6,600 additional jobs due to improved access to jobs outside the area.
 - 58,800 additional jobs attracted to the area, and 100 associated jobs.
 - 9,900 jobs taken up by local unemployed and economically inactive residents.
 - Total jobs are 16,700, with 13,600 jobs lost due to improved access to regeneration areas, resulting in net increase of jobs of 3,100, which could potentially increase to 4,900 if commercial and residential developments proliferate.
- New commercial and residential developments will attract 80,000 additional jobs and 40,000 people to key regeneration areas served by Crossrail.

Sources: *Crossrail Business Case Update: Summary Report July 2011*; Crossrail Ltd, *Crossrail Specialist Technical Reports: Socio-economic impact report*; *Environmental baseline and assessment of impacts: Central section*; *Assessment of community impacts*; *Environmental baseline and assessment of impacts: Agglomeration benefits*; *Environmental baseline and assessment of impacts: Direct employment impacts*; *Route-wide impacts: Regeneration and Economic Development benefits* - available at <http://www.crossrail.co.uk/about-us/crossrail-bill-supporting-documents/specialist-technical-reports/?folder=/10/228>; Colin Buchanan and Volterra, *The Economic Benefits of Crossrail*, 2007.

4 Property and retail

4.1 Commercial and residential property

Crossrail could help create additional commercial and residential value of up to £5.5 billion along the route between 2012 and 2021

- Crossrail will support the delivery of over 57,000 new homes and 3.25 million square metres (sq m) of commercial space.
- Commercial office values around Crossrail stations in central London will increase over the next decade, with an uplift of 10% in capital value above an already rising baseline projection.
- Residential capital values are projected to increase immediately around Crossrail stations in central London by 25% over the next decade, again above a rising baseline projection.
- While there are a number of influences on development activity along the Crossrail route, 41% (around 5,000,000 sq m of floorspace) of the total 324 applications analysed between 2008 and 2013 specifically identify Crossrail as a key factor within the supporting case for the development proposal.²
- In 2009 15% of development applications cited Crossrail as a key factor; this had risen to 48% in the first six months of 2013.
- Residential property in Farringdon and Clerkenwell is predicted to reap some of the biggest benefits from Crossrail. Looking forward, residential prices in this area are expected to outperform growth in wider prime central London by 1% a year.
- With Crossrail projected by many to have a significant impact on residential prices in Farringdon, many would-be sellers have delayed the decision. The number of sales within 500m of the Farringdon station has fallen 15% from 2009, itself the lowest year on record since 1995. The impact in the short to medium term has been a degree of uplift in house prices. Post 2018, once Crossrail is operational, the number of sellers may increase as households look to realise house price gains.

Sources: Crossrail Ltd, <http://www.crossrail.co.uk/benefits/crossrail-in-numbers>; GVA, *Crossrail Property Impact Study*, October 2012; GVA, *Crossrail Development Pipeline Study*, March 2014; Knight Frank, *Action Stations: The Impact of Crossrail on Residential Property in Central London*, 2013; Hamptons International, *Linking housing markets: The effect of Crossrail on housing markets in London*.

4.2 Retail

Retail impacts are harder to predict but Crossrail is likely to increase ease of access

- In the context of a wide range of UK and London-wide retail trends, the specific impact that Crossrail may have on retail is difficult to identify.
- However, One New Change, Canary Wharf and Stratford represent major and recent additions to the Central London and eastern fringe shopping offer. Crossrail has the potential to significantly improve the speed and

² Either through directly improved transport capacity or the wider place-making and regenerative impact.

convenience with which residents of the wider East London area can access this.

Source: GVA, *Crossrail Property Impact Study*, October 2012

5 City of London stations

5.1 Farringdon station

Farringdon station will become one of Britain's busiest train stations

- The completion of Crossrail will make Farringdon one of the biggest transport interchanges in Britain with 140 trains per hour.
- Farringdon will be the only station from which passengers will be able to access all three networks - Crossrail, Thameslink and the London Underground.

Passenger flows:

- According to Crossrail Ltd projections, Farringdon station could achieve demand of some 27 million passengers a year and, on average, some 102,000 passengers per day in 2026. These figures represent an increase from current numbers - 19 million annual passengers and 53,000 passengers per day.

Location and construction impacts:

- The main works are located in the London Borough of Islington but some of the works fall within the City of London to the south. The station will be located between Farringdon Road and Lindsey Street.
- Two new ticket halls will be constructed in the west at Farringdon Road and the east at Lindsey Street (Barbican). The station will consist of two platforms fitted out to 210 metres although the tunnel will be constructed to facilitate extensions to 245 metres should the need to operate longer trains arise. Interchange with London Underground will be provided from Lindsey Street ticket hall.
- Cowcross Street will be pedestrianised between the London Underground station at Farringdon and the Crossrail western ticket hall. This will result in a beneficial significant impact on the amenity and circulation of the pedestrians.
- The construction of the Western entrance and ticket hall to Crossrail (located south of Cowcross Street) will require the permanent acquisition of Cardinal House and several retail outlets while to the East some office space, retail and catering outlets will be affected. Altogether, the construction of Farringdon station will result in the displacement of between 800-1,100 retail and office jobs.
- The demolition of the Lindsey Street Hotel will be a 'permanent significant negative residual impact', as there are no other low cost hotels within the area.

Sources: Crossrail Ltd, <http://www.crossrail.co.uk/route/stations/farringdon/> and <http://www.crossrail.co.uk/benefits/crossrail-in-numbers>; CBRE, *Crossrail: The Impact on London's Property Market*, Winter 2013/14; Arup, *The Impact of Crossrail on Visitor Numbers in Central London*, January 2014³; Colin Buchanan, *Assessment of*

³ Please note – Arup's January 2014 visitor number forecasts (not referenced in this paper) are being re-visited by TfL.

5.2 Liverpool Street station

A reduced 32 minute journey time from Liverpool Street station to Heathrow airport

- The new Liverpool Street station will link Crossrail to Stansted Airport in Essex, and also open up the high-speed rail link to commuters travelling in to the capital from the East of England.
- The direct train journey time from Heathrow to the City of London (Liverpool Street) will reduce from 55 minutes to 35 minutes.

Location and construction impacts:

- The station will be located below the existing Liverpool Street and Moorgate London Underground stations, with both providing access to the new Crossrail station. The existing ticket hall at Liverpool Street will be modified to provide access to the east end of the Crossrail platforms. Crossrail passengers will use two banks of three escalators to reach the existing Central, Metropolitan & Circle line ticket hall.
- The main temporary impact during construction will be the demolition of the former AMRO Bank building, Moor House and 11-12 Blomfield Street site, which will entail the displacement of between 300-550 jobs or 0.2-0.3% of the local job market. In terms of floorspace, it means a temporary reduction of 0.3% of the office and retail property stock.
- The City of London itself has limited scope for residential development, making schemes in the area much sought-after – but the 'City Fringe' area of Shoreditch, within a ten minute walk of the Liverpool Street Crossrail entrance, is becoming of more interest to developers and potential residents. There are nearly 1,000 private residential units with planning or under construction within a 10 minute walk. Agents expect residential prices in this area to outperform growth in wider prime central London by 1% a year.

Sources: Knight Frank, *Action Stations: The Impact of Crossrail on Residential Property in Central London*, 2013; Crossrail Ltd, <http://www.crossrail.co.uk/benefits/crossrail-in-numbers> and <http://www.crossrail.co.uk/route/stations/liverpool-street/key-facts>; Colin Buchanan, *Assessment of Community Impacts: Technical Report, 6 Baseline and Environmental Impacts: Westbourne Park to Pudding Mill Lane*.

5.3 City fringes

Whitechapel predicted to benefit from accelerated regeneration

- Whitechapel is located one station east of Liverpool Street on the edge of the City and is one of two Crossrail stations within the borough of Tower Hamlets.
- With the City less than a kilometre away, it's logical that regeneration would find its way along Whitechapel Road to this 'City Fringe' neighbourhood. However, the impending arrival of Crossrail services has hastened this process, catalysing development and speculation.
- Improvements in Whitechapel have taken particular account of the imminent arrival of Crossrail, focusing on restoring and improving historic shop fronts

along Whitechapel Road where Crossrail passengers will emerge from 2018, and creating a high quality public realm in the market area, designed to accommodate more pedestrians.

- In Tower Hamlet's *Whitechapel Vision* document, the arrival of Crossrail is specifically cited as an opportunity, with the appropriate level of public sector investment, to "inspire a new and exciting place".
- Developers are already recognising the potential Crossrail brings to the area. The short-term focus has been on the delivery of new residential space, with over 2,000 new units in the development pipeline.

Source: Future of London, *Crossrail as a Catalyst*, April 2014; Tower Hamlets, *Whitechapel Vision Masterplan Supplementary Planning Document*, adopted December 2013

6 Other useful sources

National Audit Office, *Crossrail*, January 2014

<http://www.nao.org.uk/wp-content/uploads/2014/01/Crossrail.pdf>

This study examines the Department for Transport's investment and role in the Crossrail programme and the likelihood that this will provide value for money for the taxpayer.

Department for Transport, *Developing Crossrail*

<https://www.gov.uk/government/policies/expanding-and-improving-the-rail-network/supporting-pages/developing-crossrail>

This page provides links to the latest annual ministerial statement and business case summary reports.

7 Appendix 1 – Crossrail route map



Source: Crossrail Ltd