FUNDING CROSSRAIL 2

A REPORT
FROM LONDON FIRST'S
CROSSRAIL 2 TASK FORCE
FEBRUARY 2014

London First

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FOREWORD

from Francis Salway, Chair of London First's working group

Efficient transport is one of the essential elements of any successful economy. Whether it is for bringing goods to market, customers to suppliers or workers to their jobs, no economy can function effectively without it. For London, the symbiotic relationship between the growth in population and the expansion of the city's transport systems has existed since the start of the railway age. Indeed, many of London's suburbs exist only because of the exploratory forays of the rail and underground network, particularly in the first half of the 20th century.

It should surprise no one, then, that, with London's high levels of productivity and a population forecast to grow by 1.5 million people over the next 20 years, there is a complementary need for further development of the city's rail capacity. As London First pointed out in its report last February making the case for a new cross-London rail link, many parts of the existing network will be unable to cope without it in the face of the increased demand that a city of 10 million will bring.

The case for building Crossrail 2 is overwhelming. This has been acknowledged by the current Mayor and appears to have been accepted by the Treasury, which allocated £2 million to support a funding and financing study. Given London's disproportionate contribution to the UK economy, and to its tax revenues in particular, it might be assumed that such an essential project would be funded by central government. However, we no longer live in such simple times and so, independently, London First has brought together a working group, which I have been privileged to chair, to contribute ideas on funding to address the Government's challenge of meeting at least half of the scheme's cost through private sources.

Our conclusion is that this can be achieved and that, perhaps uniquely, Crossrail 2 has the potential to be a major infrastructure project which can be predominantly funded locally – in this case, by London. We set out our thinking in detail in this report but two key recommendations are: increasing the proportion of the tax revenue generated by London that is retained so that it can pay for its infrastructure needs; and capitalising on the substantial opportunities for development along the proposed route and for substantial development at the northern and southern ends of the line. The latter could make a contribution both to the funding of the project and to the much-needed provision of new homes in and around London.

I anticipate that some of our proposals will meet with greater levels of support than others. Indeed, if they did not stimulate debate then we could be accused of not having been sufficiently radical in our thinking. But Crossrail 1 has created confidence that this country can find new mechanisms to fund major infrastructure projects; that we can successfully deliver these projects; and that the projects do add significant value to our city.

I would like to thank the members of the working group, in particular Richard Threlfall and his team at KPMG, who gave so freely of their time and expertise. They have, I hope, provided the foundations for a decision to build Crossrail 2.

FRANCIS SALWAY

February 2014

KEY CONCLUSIONS

- London's population is growing towards 10 million by 2030, an increase of 1.5 million over 20 years. More people will require more investment in London's transport infrastructure, beyond current plans. Failure to invest would make life intolerable for Londoners, hamper London's economic growth and hit government tax receipts.
- Crossrail 2 would transform journeys within London and on key rail services into London, cutting congestion and journey times. It would add 10 per cent to current public transport capacity across London and, by connecting with Euston, would provide a new interchange for passengers with HS2. It would also open up new areas of housing growth to the SW and NE of the capital – in the way that new Tube and rail lines have enabled London's growth historically.
- The current cost estimate for the project is £12 billion in 2012 prices. This rises to £20 billion if an additional contingency of 66 per cent is included, as required by HM Treasury. Even with this very high level of uplift, the costs are outweighed by the benefits, with a benefit to cost ratio of 1.8:1, rising to 4.1:1 if wider economic benefits are taken into account.
- Such investment is affordable. London generates substantially more in tax revenues than it spends, making a net contribution of over £5 billion to the public finances even in 2010/11. However, it does not retain enough of these revenues to pay for its infrastructure needs. Barely seven per cent of all the tax paid by London residents and businesses is retained by the Mayor and the boroughs. The equivalent figure for New York is over 50 per cent.
- Funding constraints would be eased, flexibility between funding sources enhanced and risk could be better managed if London government were given greater fiscal autonomy to invest in the capital's infrastructure.
- Central government would benefit from Crossrail 2 through increased tax receipts and Network Rail would benefit through reduced congestion. Both should contribute - as for Crossrail 1. Passengers, residents, businesses and developers in London would also benefit and should all contribute to make Crossrail 2 a reality.
- The working group has identified a menu of funding options totalling over £23 billion in 2012 prices. Even if no fiscal devolution were to take place, this would be sufficient to fund the construction of Crossrail 2, based on a central cost estimate of £16 billion, while providing policymakers with some choice as to the mix. With fiscal

devolution, London Government would have further flexibility over sources and be capable of funding over-runs even if the upper cost estimate, based on a high level of contingency, was the outturn.

- On the basis of our analysis, the working group is confident that the Government's challenge of showing that at least half of the project's cost can be paid for through private, or non-Exchequer, sources can be met.

- All funding options have a degree of challenge – some greater than others. We now urge the Mayor and central government to negotiate a funding package that shares cost burdens fairly, starting with the Funding and Financing Study that was announced in the Spending Review. This should enable construction to follow Crossrail 1 over the 2020s and the new line to open by 2030. Detailed planning must begin now.

EXECUTIVE SUMMARY

London's population is predicted to grow by 1.5 million over 20 years, towards a figure of 10 million by 2030, requiring sustained investment in the capital's transport infrastructure. A failure to invest in this infrastructure will hamper London's future growth and the UK economy as a whole.

Such investment is affordable. London generates substantially more in tax revenues than it spends, making a net contribution of over £5 billion to the public finances even in 2010/11. However, it does not retain enough of these revenues to pay for its infrastructure needs. Barely seven per cent of all the tax paid by London residents and businesses is retained by the Mayor and the boroughs. The equivalent figure for New York is over 50 per cent.

As a result, the Mayor is highly dependent on uncertain grant funding from central Government to pay for London's needs. The Mayor and Transport for London (TfL) are well equipped to plan for the 2020s and 30s, but are currently unable to implement detailed plans as they have little certainty over how to pay for them. This report sets out options for plugging that gap in the context of one important scheme, Crossrail 2.

Crossrail 2 is a new south-west to north-east rail line, which would provide services between Hertfordshire and parts of Surrey and Middlesex via a new tunnel under central London between Wimbledon and Tottenham. It would add 10 per cent to current public transport capacity across London, relieving congestion on crowded rail and Tube lines. By connecting with Euston, it would provide a new interchange for passengers with HS2, as well as providing new links to areas of London where much-needed new housing could be built.

The current cost estimate for the project is £12 billion in 2012 prices. This rises to £20 billion if an additional contingency of 66 per cent is included, as required by HM Treasury. Even with this very high level of uplift, the costs are outweighed by the benefits, with a benefit to cost ratio (BCR) of 1.8:1, rising to 4.1:1 if wider economic benefits are taken into account.

In light of this positive case, a London First task force recommended in early 2013 that the Mayor and central government take forward detailed planning for Crossrail 2, with a view to construction in the 2020s so the new line could open by 2030. The report was welcomed widely, including by the Mayor of London, who described the case for Crossrail 2 as "uncontestable". A subsequent public consultation found support for the scheme from some 95 per cent of the 14,000 respondents.

Launching the government's revised infrastructure plan in 2013, the Chief Secretary to the Treasury stated: "The government is committing £2 million to support a funding and financing study into Crossrail 2. The challenge for the Mayor of London now, is to determine how at least half of the cost of the scheme can be met through private sources, ensuring that it will be affordable to the UK taxpayer." London First set up this working group to respond to that challenge.

Funding can come from a number of potential sources: from government, which will see increased economic growth and tax yields; from Network Rail, which will otherwise need to invest separately to address major capacity pressures on the rail network into London; from rail and Tube passengers in London and the SE who benefit most obviously from the investment as direct users of the line or from new services or lower congestion elsewhere on the network; from businesses and residents who benefit from London's enhanced connectivity and continued growth; and from property owners and developers who see land and property values rise as a result of investment in improved transport links.

This report explores a range of potential funding options for Crossrail 2. Some of these are tried and tested mechanisms for funding major transport schemes of this sort. Others, such as the proposed intensification of development along the route, are more innovative in today's context in the UK – although, of course, would be recognisable internationally and to the transport planners and investors who built London's Metroland in the early twentieth century.

The table below sets out the menu of potentially credible funding options identified by the working group. It is not currently certain when Crossrail 2 might start, or the number of years over which the expenditure might be incurred. In view of this, and for the sake of comparability with other infrastructure projects currently under discussion, we have shown the estimated costs and estimated contributions from different funding sources in 2012 prices.

Funding Source	2012 prices
Central Government grants	**4.00**
Network Rail	**2.00**
Wider TfL farebox	**3.12**
Crossrail 2 farebox	**3.00**
Developer contributions	**0.99**
Intensification of development	**2.40**
Council tax	**0.87**
Business rates	**1.81**
Fiscal devolution	**5.21**
Total including fiscal devolution	**23.40**
Total excluding fiscal devolution	**18.19**
Cost Estimates	
Lower cost estimate	**12.00**
Upper cost estimate	**20.00**
Central cost estimate	**16.00**

All figures in £bn. Where relevant, indexed back to 2012 prices at 2.5 per cent p.a.

FISCAL DEVOLUTION

The working group took as its starting point the potential for greater devolution of tax revenues to London government, to support economic growth against the backdrop of a rapidly growing population. Specifically, the group endorsed the recommendation of the London Finance Commission that property taxes should be devolved to London government and that Greater London Authority (GLA) Group borrowing ceilings be removed. The yield of these taxes should be offset through corresponding reductions in grant to ensure a fiscally neutral position for the Exchequer, at the outset. This gives London Government the ownership of a rising income stream – and an incentive to grow that stream further – and the ability to borrow against it to finance investment.

Modelling undertaken for the working group indicates that devolution on these lines could generate up to £5.2 billion for TfL over the period 2021-2030, which could be used towards Crossrail 2. This growth in London's revenues is not depriving the rest of the country of spending resource; to the contrary, it is taking a modest sliver of tax growth and using it to enable London to grow, thus generating more resources for the Exchequer. Even if the London Finance Commission reforms were fully implemented, central government would still retain 88 per cent of all taxes raised from London.

CROSSRAIL 2 AND WIDER TFL FAREBOX

Once in operation, Crossrail 2 would generate a surplus from operations, once costs such as rolling stock have been allowed for. Although insufficient to cover the construction cost in full, this surplus should nonetheless make a substantial contribution towards the project. Work is ongoing by TfL to develop estimates of the level of operating surplus, but drawing on the experience of Crossrail 1, an estimate of £3 billion would seem reasonable. The working group makes no assumption as to whether additional revenue could or should be raised through premium fares for Crossrail 2.

A contribution could also be sought from London Tube and rail passengers as a whole, given the significant congestion relief benefits Crossrail 2 would bring right across London's wider transport network. A 5 per cent increase in fares, phased in over a number of years (for example RPI+1 for a five year period) could be hypothecated towards Crossrail 2 and potentially support borrowing of £3.12 billion.

Taken together, these two elements could therefore support borrowing of around £6.1 billion. There could be some flexibility about the precise composition of the fare payer contribution.

DEVELOPER CONTRIBUTIONS

Developer contributions under the Community Infrastructure Levy and Section 106 are currently generating around £40 million annually towards Crossrail 1 and are expected to be contributing around £100 million a year by 2020. Once Crossrail 1 funding commitments have been met, this source could potentially continue to make a similar level of contribution towards Crossrail 2, supporting borrowing of £0.99 billion.

INTENSIFICATION OF DEVELOPMENT

Enabling more intensive development along the route of the new line through a more permissive planning regime could raise additional revenues. In central London, the group proposed a target of £0.5 billion towards the project from retail activity in and around stations and higher density commercial and residential development over and around stations.

The group also saw significant potential for targeted large scale development at either end of the new route, in particular to provide new housing, as has been done in previous decades to support London's continued growth. Allowing more intensive development in the Upper Lea Valley and around Chessington South, to take advantage of greatly improved public transport links, could create significant new value. If a proportion of this was captured, as is happening in Battersea to support the Northern Line Extension, this source could support an additional £1.9 billion of funding, making a total of £2.4 billion from intensification of development.

BUSINESS RATES

A Business Rate Supplement of 2p per £1 of rateable value was introduced to finance borrowing for Crossrail 1. The GLA currently expects the BRS to end in the mid to late 2030s. Extending the BRS for another 30 years and extending the strict hypothecation to cover Crossrail 2 could support the raising of additional debt through a refinancing in the mid 2020s, potentially yielding funding of £1.8 billion.

COUNCIL TAX

Given the substantial 10 per cent additional capacity Crossrail 2 would provide to London's current transport network, a contribution could be sought from all Londoners via their council tax bills, as was used to fund the London Olympics. The current Olympics Games precept amounts to £20 for a Band D property and is due to come to an end in 2016/17. A similar sized supplement could fund borrowing of £0.87 billion.

CENTRAL GOVERNMENT GRANT

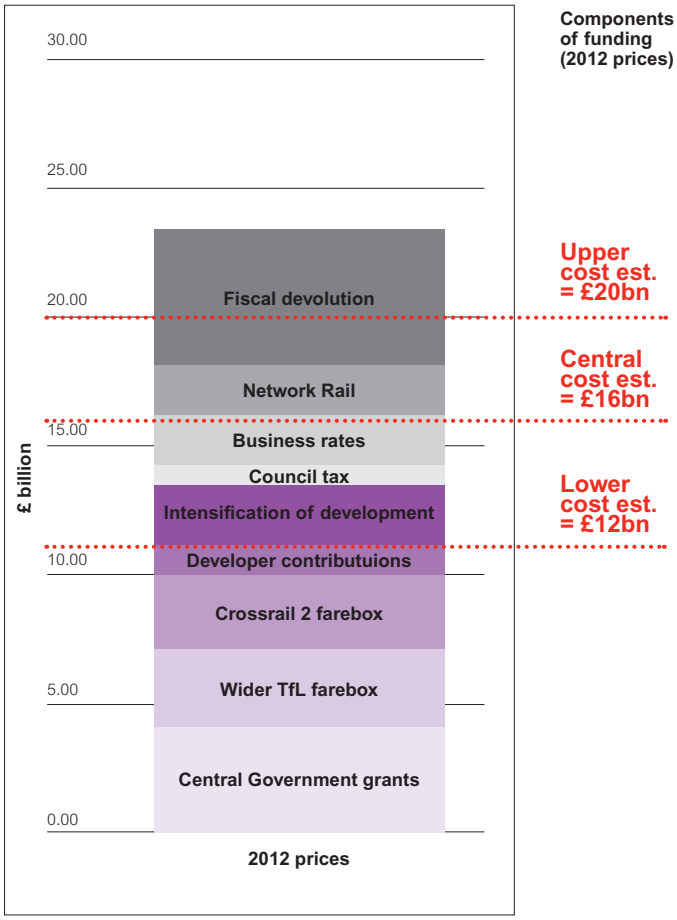
Crossrail 1 secured a significant contribution from central government on account of the benefits it will bring to London and the wider SE economy, and hence to UK economic growth as a whole. A similar case exists for Crossrail 2. As a base case, the working group proposes that the Government funds a quarter of the cost of Crossrail 2 on our central cost case of £16 billion. This amounts to £4 billion.

NETWORK RAIL

Network Rail supported Crossrail 1 by delivering 'on network works' to the value of £2 billion. Crossrail 2 will provide significant new capacity for commuters to the south west and north east of London, including from as far afield as Basingstoke and Southampton, reducing the requirement for costly works to increase capacity on the lines into Waterloo. On this basis, the working group estimates a Network Rail contribution of around £2 billion.

SUMMARY OF FUNDING SOURCES

The contribution these potential sources can make towards the cost of Crossrail 2 is illustrated in the chart below. It also shows how these sources compare to the high, base and 'central' cost estimates for Crossrail 2. The 'central' cost estimate of £16 billion, which adds a significant buffer for contingency, is broadly comparable to the cost of Crossrail 1, which is in many ways a similar project.



The working group has identified a menu of funding options totalling over £23 billion in 2012 prices. Even if no fiscal devolution were to take place, the other funding sources would be sufficient to fund the construction of Crossrail 2, based on a central cost estimate of £16 billion, while providing policymakers with some choice as to the mix. With fiscal devolution, London Government would have further flexibility over sources and be capable of funding over-runs even if the upper cost estimate, based on high levels of contingency, was the outturn.

This potential flexibility should provide comfort to political decision makers, who will inevitably be cautious about the acceptability of elements of this package. The working group would emphasise that none of these options need bite immediately, though the sooner we begin planning for London's continued growth, the better. All funding options inevitably have some degree of challenge and we urge all interested parties to resist ruling options out at this stage.

The pie chart below presents the various funding options set out above, based on the current distribution of tax revenues between central and London government (i.e. excluding fiscal devolution). On the basis of this analysis, the working group is confident that the Treasury's challenge of showing that at least half of the project's cost can be paid for through private, or non-Exchequer, sources can be met. The precise contribution being made by any one source will, of course, ultimately depend both on the choices made by politicians and the final project cost.

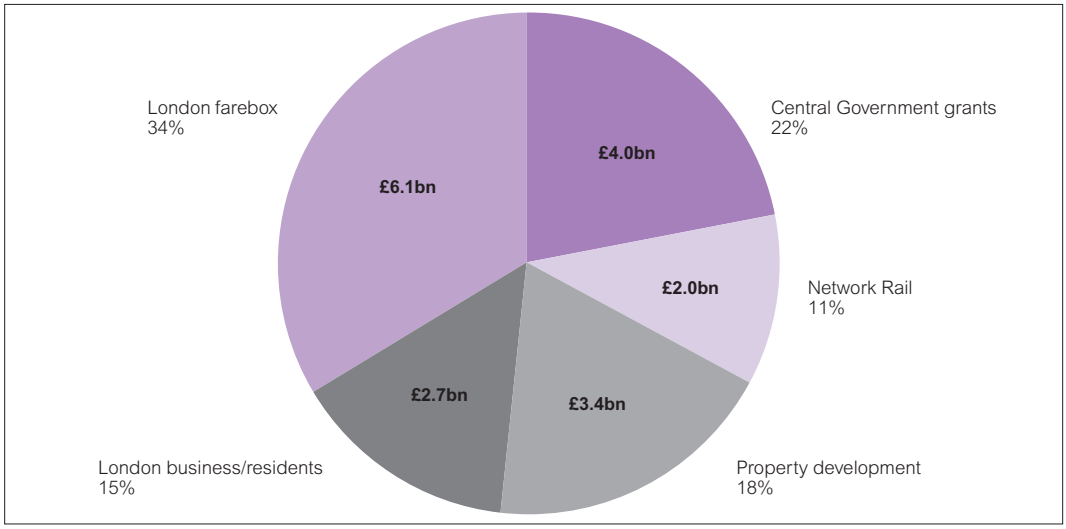
CONCLUSION

Crossrail 2 is essential to support London's future growth and competitiveness, as it becomes a city of 10 million people in the 2030s. Without Crossrail 2, the projected population and jobs growth will put intolerable pressure on the capital's transport network from the 2020s onwards. This is not just a quality of life point for Londoners: such an outcome would undermine London's productivity and the growth in its contribution to both the wider UK economy and the UK's tax base.

We now urge the Mayor, boroughs and central government to embrace this report and to work with businesses and residents in London and beyond to negotiate a funding plan and to put in place the financing that would enable construction of Crossrail 2 to take place over the 2020s and the new line to open by 2030.

All of the options outlined here have political and practical challenges. None will be painless to implement. There is considerable opportunity to flex between them. But Crossrail 2 can be built in the next decade; and the growth and success of London and the UK demands that action begins now.

Components of funding sources, excluding fiscal devolution, in 2012 prices (£billion).
Total = £18.2bn



1 FUNDING

NEW TRANSPORT INFRASTRUCTURE IN LONDON

As London's population grows to nine million people by 2020 and towards 10 million by 2030, sustained investment in the capital's infrastructure will be required. An extra 1.5 million people will require additional investment in transport, as well as in housing, utilities, schools and health services. London needs to invest in its infrastructure in order to support this growth.

Failure will not affect the quality of life and growth prospects for Londoners alone. The GLA estimates that over half a million jobs[1] in London will be generated over these 20 years and these will generate substantial flows of tax revenues for the Exchequer. As an illustration, London's population has increased by just over 900,000 over the past 10 years, and the number of jobs has increased by almost 500,000. Annual tax revenue from London is estimated to have increased by £32.3 billion over the period, to a total of £102.2 billion in 2010/11.[2]

London's economic success is, moreover, supporting the country as a whole. London provided a net contribution to the public finances of £5.1 billion in 2010/11. Between 2001/02 and 2010/11, the average net contribution to the public finances was £11.67 billion per annum, representing a total net contribution to the public finances from London over a 10 year period of over £116 billion.[3]

In order to understand the implications and requirements of London's continued economic and demographic growth, the Mayor of London is in the process of developing an Infrastructure Investment Plan for the capital through to 2050. This will make a high level assessment of London's long-term infrastructure needs, how much they will cost and how these might be financed and funded in future.

Through TfL, the Mayor already has a good understanding of future challenges on the public transport network in London and how these might be addressed. The issue is less planning for growth, rather how we pay for it. While London's public transport network is increasingly able to cover its operating costs through customer revenues, public subsidy continues to be required for enhancements to the network.

As set out in the recent report of the London Finance Commission[4], chaired by Professor Tony Travers of the London School of Economics, London generates substantial tax revenues for the country as a whole but it does not retain enough of them to pay for its infrastructure needs. This is the infrastructure that is essential if the city and its contribution to the national Exchequer is to continue to grow.

The Commission highlighted the Mayor's severely limited ability to determine and use the resources raised from London taxpayers. Barely seven per cent of all the tax paid by London residents and businesses is retained by the Mayor and the boroughs – even after the Government's recent reforms which allow the GLA to retain a proportion of London business rates. The equivalent figure for New York is over 50 per cent.

As a result, the Mayor is highly dependent on grant funding from central Government to pay for new transport infrastructure. After decades of relative neglect, recent spending reviews have enabled good progress to be made in delivering major Tube upgrades and Crossrail 1. However, spending settlements of this sort remain inherently short term. The Mayor and TfL are well equipped to plan for the 2020s and 30s, but are currently unable to implement detailed plans as they have little certainty over how to pay for them.

This report sets out options for plugging that gap in the context of one particular and essential scheme, Crossrail 2.

[1] GLA Employment Projections, May 2013.
[2] Source: GLA, based on ONS Mid-Year Population Estimates' ONS Workforce Jobs; and London's Finances and Revenues, City of London Corporation/ Oxford Economics.
[3] London's Finances and Revenues, City of London Corporation/ Oxford Economics; Table A–10.
[4] Raising the capital, The report of the London Finance Commission, May 2013.

2 THE CASE FOR CROSSRAIL 2

This chapter largely summarises the work of London First's taskforce on the case for Crossrail 2, which reported early in 2013.

2.1 CROSSRAIL 2

Crossrail 2 is a proposed new south-west to north-east rail line providing services between Hertfordshire and parts of Surrey and Middlesex via a new tunnel under central London between Tottenham and Wimbledon.

The scheme is based on the Chelsea-Hackney route, which was first planned in the 1970s alongside an east-west link, which eventually became Crossrail. Land along the proposed route remains protected from new development.

Crossrail 2 was included in the Mayor of London's Transport Strategy in 2010 as a potentially important new scheme to help meet rising demand for travel in the period to 2030. In light of the significant pressures forecast for London's transport network, in late 2011 London First set up a taskforce of senior business leaders to assess the case for the new line.

The London First taskforce concluded that there was a strong case for a new line, which would offer essential congestion relief on crowded rail and Tube lines as well as providing new connections to areas of London where future housing growth is planned. It called on the Mayor and central government to take forward detailed planning for Crossrail 2, with a view to construction in the 2020s. It also committed to undertake further work on detailed funding options. The report was welcomed by the Mayor, who described the case for Crossrail 2 as "uncontestable".

In summer 2013 TfL and Network Rail launched a strategic consultation on Crossrail 2 that summarised the case for a new line and the various route options that had been explored. It consulted on two particular options – a shorter metro scheme, which would run in tunnel between Wimbledon and Alexandra Palace, and a longer regional route, which would be a combined underground and overground railway serving destinations further afield.

The consultation revealed overwhelming support for Crossrail 2, with 95 per cent of almost 14,000 respondents 'strongly supporting' or 'supporting' the scheme. Public support was higher for the regional option with 84 per cent of respondents 'strongly supporting' or 'supporting' the route, as against 73 per cent for the metro option.

The London First taskforce came to the firm conclusion that the regional route offered significant additional benefits and greater value for money. This is also the provisional view of most key stakeholders. The rest of this report therefore focuses on the regional scheme, which is shown in Figure 1 below.

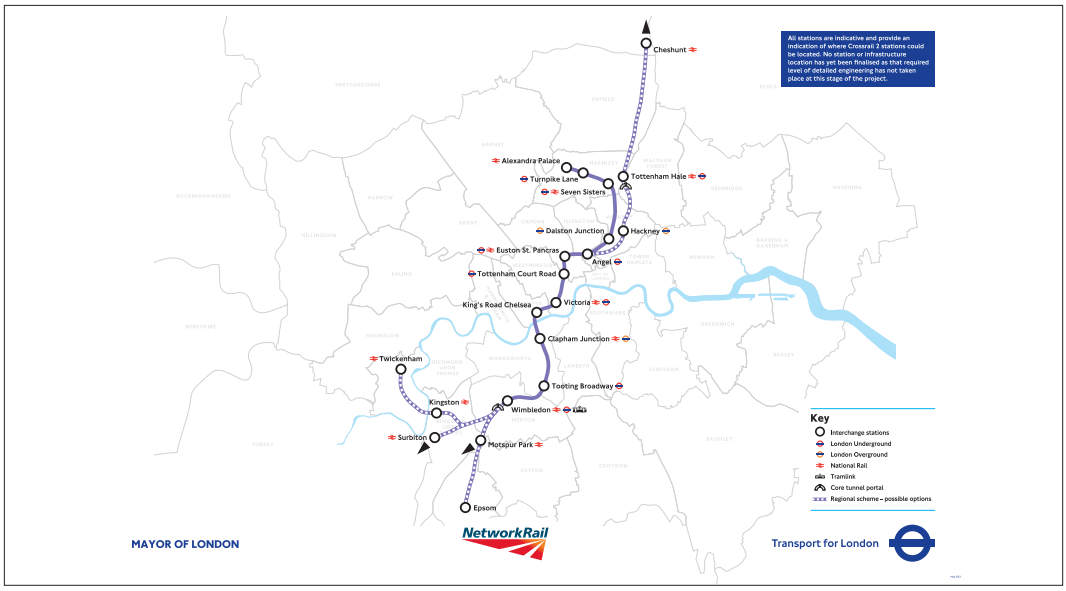


Figure 1
Crossrail 2 regional route

The regional route would operate underground between Wimbledon and Alexandra Palace, emerging to run onto existing overground railway lines to the NE and SW.

The new line would transform capacity and services on some of the most crowded sections of the Underground network, particularly those which serve the congested central London rail termini of Waterloo, Victoria and Euston (which is also planned as the terminus for HS2), as well as the equally congested interchange station of Clapham Junction. It would relieve the entirety of the Victoria line, and much of the Northern and Piccadilly lines, all of which are forecast to see substantial growth in demand and congestion. Crossrail 2 would provide an additional 10 per cent to current public transport capacity across London.

From Wimbledon, Crossrail 2 services would travel on South West Trains (SWT) suburban lines, replacing some of the existing SWT services to and from Waterloo, and offering passengers a wider range of central London destinations. On the NE section, it is proposed that Crossrail 2 services would run overground up the Lee Valley (an area where significant new housing is planned) and through to Hertfordshire, using the West Anglia Main Line.

At this stage of the project, no fixed decisions have been taken by TfL or Network Rail about the exact Crossrail 2 train service pattern or the starting points for services (for example, further work is continuing on options both to the SW and NE, including as to how rail links to Stansted airport might overall be improved). Destinations served directly on the route would benefit from quicker, more frequent, and more direct journeys into central London. Some examples of potential journey times are shown in Table 1 below:

The Crossrail 2 regional scheme would also release pressure on heavily congested national rail lines, particularly those into Waterloo, by diverting some suburban trains onto Crossrail 2. This would allow for more mainline services to be provided, benefiting longer-distance commuters from destinations such as Woking, Basingstoke, Southampton and Portsmouth in the SW and potentially other destinations to the north and east. This is a key area for further work by Network Rail and TfL.

Table 2 below illustrates an indicative service level for the regional option:

Journey	Current journey time	Predicted journey time on Crossrail 2
Alexandra Palace – Wimbledon	51 minutes	31 minutes
Euston – Wimbledon	33 minutes	17 minutes
Alexandra Palace – Euston	19 minutes	14 minutes

Table 1
Potential journey times on Crossrail 2

Criteria	Service level
Type of service	Similar to National Rail
Peak hour passenger capacity (each direction)	Up to 45,000
Coaches per train	10
Platform length	250 metres
Train type	National rail type
Trains per hour (peak)	Up to 30

Table 2
Indicative service level for regional route

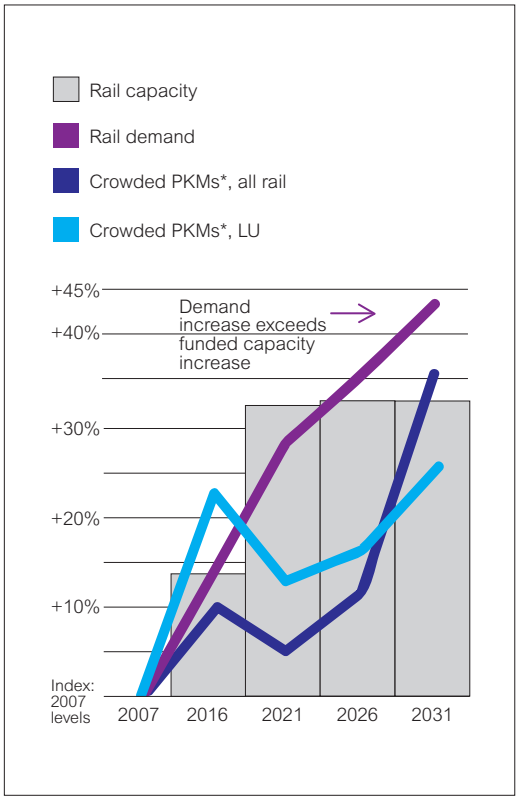
2.2 WHY CROSSRAIL 2 IS NEEDED

London's ability to support major population and jobs growth and to attract talent and investment from around the world – for the benefit of the UK as a whole – depends upon it having an adequate transport infrastructure.

London is especially reliant upon public transport. Half of the people who work in London take public transport to work, compared with only nine per cent of workers in the rest of the UK. There are almost as many journeys on the Tube each year as on the entire National Rail network and over two thirds of all journeys on the National Rail network begin or end in London.

Most of these journeys are not optional; they are commuters getting to and from work, or people going about essential business. If congestion and inadequate transport links stop or discourage people from taking jobs in London, especially in central London, then its economy suffers. Moreover, jobs in central London are typically among the most productive in the country. So a failure to cater properly for future employment growth will undermine prosperity in the UK at large, not just in London.

Figure 2
Overcrowding without Crossrail 2



The recent 2011 Census suggests that the population of London is higher than was previously thought. The London Plan estimated a 2011 population of 7.8 million whereas the Census showed a population of 8.17 million. The GLA's latest round of projections, off the new Census baseline, has a 2031 population of 9.66 million, 1.5 million more than today. The latest projections for jobs are also up on the London Plan figures – to 5.6 million jobs in 2031 rather than the 5.45 million in the Plan, most of which would be in central London. This represents an additional 700,000 jobs compared with the estimated 4.9 million today.[5]

The last 20 years have seen sustained investment and improvement in London's transport infrastructure, which has been critical to London's growth and prosperity over this period. Bus, Tube and rail services have all improved significantly. Crossrail is under construction, adding 10 per cent to London's public transport capacity and enabling far more people to access jobs in central London. There is now a strong business-led consensus on the importance of sustained investment in London's infrastructure and its transport infrastructure in particular.

Yet London's rail and underground networks are still heavily congested in peak hours. Committed investment through Crossrail 1, the Tube upgrade programme and the Thameslink programme will increase commuting capacity over the coming decade by around a third. But even with this investment, demand on rail and underground services over the next 20 years is set to outstrip capacity significantly. This is reflected in Figure 2, below, which shows overcrowding falling in the period to 2020 as new investments become operational, but then rising again as services are filled by a growing population.

[5] Source: GLA.

Overcrowding is projected to be particularly severe on the Victoria, Northern and Piccadilly lines, which gain only limited direct relief from Crossrail and Thameslink. Severe crowding is also forecast on suburban rail services, particularly in the SW, adding to congestion at London rail termini such as Victoria and Waterloo. In addition, by 2026 the first phase of the new high speed line (HS2) is expected to be in operation to the West Midlands, bringing significant numbers of additional passengers to Euston where the Tube station is already at capacity. The second phase of HS2, due to complete in 2033, would add further demand for Tube services at Euston.[6]

The clear conclusion is that forecast demand requires additional investment in London's transport network, beyond currently committed plans, to avoid serious congestion on its rail and underground networks. Detailed planning on the next generation of transport improvements must now proceed if London's future growth is to be secured.

2.3 WHEN CROSSRAIL 2 COULD BE OPERATIONAL

TfL and Network Rail's provisional timetable for Crossrail 2 is set out in Table 3 below:

The next major milestone for the project is the review of the currently safeguarded Chelsea-Hackney route, which has been protected from development since 1991 and was most recently confirmed in 2008. This will need to take account of the most significant changes to the scheme, which includes the deviation in central London to include Euston and the revisions at both ends to take the scheme onto the national rail network rather than onto the existing District and Central lines.

Additional detailed technical work and public consultation would then need to take place before planning permission could be sought. Further work is being done to explore whether this would be most appropriately done through the Hybrid Bill route - as for Crossrail 1 and HS2 - or the Development Consent Order route, which is now followed by other major infrastructure schemes such as the Thames Tideway Tunnel. Subject to securing planning permission, Crossrail 2 could then follow on from Crossrail as London's major transport infrastructure project for the 2020s. TfL's provisional timetable below assumes a 10 year construction period, which is relatively conservative in comparison to the eight years for Crossrail 1.

Table 3
Provisional timetable for Crossrail 2

May 2014	Announcement of preferred route option
June 2014	Consultation on proposed new core route for safeguarding
December 2014	DfT issues revised safeguarding direction
2014-15	Further planning work on the preferred route option
Late 2015	Public consultation on the preferred option
2016-19	Detailed design, further consultation and application for planning powers
2020-2030	Construct and test Crossrail 2
2030	Crossrail 2 opens to the public

[6] Further details on congestion pressures can be found in Crossrail 2: Supporting London's growth, the final report of London First's Crossrail 2 Task Force, February 2013.

A striking feature of the project to date is the significant level of public, stakeholder and cross-party support for Crossrail 2, confirmed recently through the public consultation. The Mayor of London is a strong supporter of the scheme as are all of the major political parties in London as well as the relevant local authorities within and outside London. Central government has provided seed funding to help take the project forward.

2.4 THE COST OF CROSSRAIL 2

High level engineering analysis, commissioned by TfL, has produced some initial cost estimates for the regional scheme. These are based on data held by engineering consultants, with rates and prices derived from similar large infrastructure projects such as Crossrail 1.

London First's earlier task force considered a range of alternative options for increasing capacity[7]. These included a package of incremental improvements to existing infrastructure, including longer trains on key SW rail routes and extensions to Crossrail 1, the Docklands Light Railway and the Tube, which is estimated to cost around £6 billion but brings only a fraction of the benefits of Crossrail 2. It also considered a more substantial upgrade of existing infrastructure, projected to cost around £9.5 billion, which included options such as an additional track on the South West Main Line into Waterloo. This package also provided significantly less capacity than Crossrail 2. The task force therefore concluded that the proposed Crossrail 2 regional scheme was by far the most cost-effective method of delivering the necessary step-change in capacity required to support London's continued growth and competitiveness.

The current cost estimate for the project, as produced at the time of London First's earlier Crossrail 2 report, is £12 billion in 2012 prices. HM Treasury guidance requires that a substantial additional sum for contingency be added to the costs in the appraisal of major projects of this sort, reflecting the potential for cost estimates to increase during the development of projects. At this relatively early stage of design, HM Treasury recommends a considerable 66 per cent uplift, which takes the total to £20 billion. The costs exclude rolling stock, which, as with similar projects, is assumed to be paid for out of operations and has been factored into the operating surplus.

Even with this very high level of contingency, the costs are outweighed by the benefits. Work undertaken for TfL by Bridget Rosewell of economics consultancy Volterra[8] has calculated the benefits from Crossrail 2 (from shorter journey times, new trips and journeys being less crowded) using standard DfT appraisal techniques. The ratio of the total social benefits to the net financial effect, known as the benefit to cost ratio (BCR), is 1.8:1.

In addition to these standard benefits, transport schemes also generate wider economic benefits through increasing productivity. There is a range of these wider benefits, but they can be substantial, particularly when a scheme serves central London. Including these wider benefits increases the BCR to 4.1:1.

Table 4 Costs and benefits of Crossrail 2

	Regional scheme
Cost estimate	£12 billion
Cost estimate with 66 per cent optimism bias	£20 billion
Benefit to cost ratio (BCR)	1.8:1
BCR including Wider Economic Benefits	4.1:1

While it is important that projects' BCRs are stress-tested by using a high optimism bias, the working group felt strongly that it is equally important that projects' costs are not allowed to drift up, with the optimism bias simply becoming part of the budget.

For the purposes of exploring funding options in this document, we have taken the mid-point of the Crossrail 2 range of £12 to £20 billion, so £16 billion in 2012 prices. This is broadly comparable to the cost of Crossrail 1, which is in many ways a similar project.

A short explanation of the numbers used in this document can be found in Annex 1.

[7] See Chapter 2 of the Final Report for further details.
[8] Ongoing analysis for TfL - subject to change as the scheme develops.

3 LESSONS
FROM CROSSRAIL 1 & THE NORTHERN LINE EXTENSION

An obvious starting point is to dissect the funding packages for Crossrail 1 and the most recent innovatively funded project in London, the Northern Line Extension to Battersea, to see which aspects might be relevant to Crossrail 2.

3.1 CROSSRAIL 1 FUNDING

Crossrail 1 is currently under construction, with services due to begin from 2018. The line will run from Maidenhead and Heathrow in the west, through new tunnels under central London to Shenfield and Abbey Wood in the east. Crossrail 1 will increase London's rail-based transport network capacity by 10 per cent, supporting regeneration and cutting journey times across the city.

The Crossrail 1 funding package was originally put in place in 2007 when the then Prime Minister announced that its cost would be met by a combination of Government, the Mayor of London and London businesses. A funding envelope for Crossrail 1 of £14.8 billion was subsequently agreed at the Comprehensive Spending Review in October 2010.

The key elements of the package are as follows:[9]

- Central Government will contribute by means of a grant from the Department for Transport of £4.7 billion during Crossrail's construction.
- London businesses will contribute £5.2 billion in total, comprising:
    - £4.1 billion through the Crossrail Business Rate Supplement (BRS). The bulk of this figure is debt raised to pay for construction, which will be repaid by the BRS by the late 2030s.
    - £600 million of developer contributions through Section 106 and the Community Infrastructure Levy (CIL).
    - £500 million from key direct beneficiaries such as the City of London Corporation and Heathrow Airport.
- TfL will make a direct contribution of £1.9 billion, raised through borrowing and paid for through the Crossrail operating surplus.
- Network Rail will deliver works up to a value of £2.3 billion to enhance the existing rail network, paid back over 30 years through track access charges.
- The remainder primarily comes from the planned disposal of surplus land and property following completion of the project.

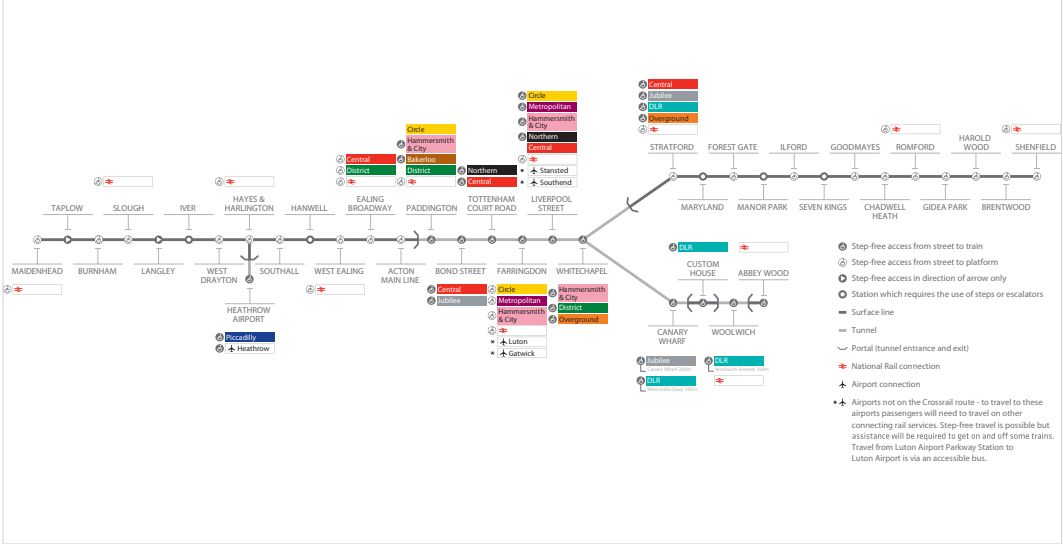


Figure 3
Crossrail 1 route map

[9] Source: Crossrail and TfL.

TfL estimates that over 60 per cent of funding for Crossrail 1 is coming directly from Londoners and London businesses.

The working group saw significant scope for replicating elements of this funding package for Crossrail 2, though the precise contributions of individual elements will vary. Detailed analysis of the potential of these options to support Crossrail 2 is contained in the following chapter.

3.2 THE NORTHERN LINE EXTENSION (NLE) FUNDING

The working group also looked at the funding and financing package agreed for the extension of the Northern Line to Battersea.

The NLE is estimated to cost £998.9 million based on completion by the end of 2019.[10] The Government has confirmed that up to £1 billion of borrowing from the Public Works Loan Board would be available to the GLA to finance the construction of the NLE. Whilst the borrowing will be undertaken by the public sector, the funding to repay this borrowing will come from the private sector in the form of:

- Incremental business rates generated and retained within a new Enterprise Zone for a period of 25 years from April 2016 (extendable by 5 years under the terms of the HM Treasury Guarantee); and

- Developer contributions raised by the London Boroughs of Wandsworth and Lambeth on the Battersea Power Station site and across the wider Vauxhall Nine Elms Battersea (VNEB) Opportunity Area under the Section 106 and CIL regimes. Wandsworth will provide £259 million, comprising £200 million from the Battersea Power Station site and £59 million from other sites, and Lambeth £7 million. The total amount committed (£266 million in 2012/13 prices) will support the cost of servicing NLE debt as Enterprise Zone revenues build up.

Funding from the Enterprise Zone and from developer contributions is forecast to be sufficient to repay the debt (and interest) required to pay for the up-front costs of building the NLE. In essence, the creation of the Enterprise Zone is enabling on a micro scale what wider fiscal devolution could potentially realise for London as a whole at the macro level. The NLE example also shows the strong inter-relationship between development and new transport infrastructure, with enhanced transport links enabling new development to take place, which over time can help fund the cost of the infrastructure itself.

3.3 THE IMPACT OF NEW TRANSPORT SCHEMES ON PROPERTY VALUES

A feature of Crossrail 1 and the NLE is that both projects assume and enable additional development to take place and significant value to be created. A proportion of this additional value could, in principle at least, be captured to help pay for investment in infrastructure.

There is a growing body of evidence showing that investment in rail infrastructure has a positive impact on property values in areas around stations – most recently in London through the Jubilee Line Extension and the London Overground.[11] In order to assess the extent of potential value uplift, Crossrail Limited commissioned property consultants GVA to assess the impact of Crossrail 1 on property along the entirety of its route.[12]

GVA's report, which estimates predicted effects, concluded that commercial office values around Crossrail 1 stations in central London will increase due to the Crossrail effect, with an uplift in capital values of 10 per cent over the next decade. This is above the underlying trend of a rising baseline. It also predicts significant increases in residential capital values immediately around stations in central London of some 25 per cent and in the suburbs of some 20 per cent (again above rising baselines).

GVA's report also estimated that Crossrail 1 will help to support the delivery of more than 57,000 new homes and 3.25 million square metres of commercial office space within 1 kilometre of stations along the route between 2012 and 2021. It estimates that these developments will have a value upon completion of £27.6 billion for the residential and £8.1 billion for the commercial –

[10] Northern Line Extension, Factsheet 1: Funding and finance, TfL.

[11] See Appendix 1 of the GVA study for a literature review.

[12] Crossrail Property Impact Study, October 2012, GVA.

with these values being higher because of the Crossrail effect by 10 per cent for the offices and, on average, 21 per cent for the residential. In absolute terms, the incremental value attributed to the Crossrail effect is £5.5 billion (£4.8 billion for the residential and £0.7 billion for the offices).

A separate report by the property consultants CBRE[13] has consistent findings. For residential property, it concluded that values around Crossrail 1 stations had already risen by around 20 per cent above the underlying growth trend for London residential properties. It estimated this increase to residential property values around the 37 stations at £14.7 billion in absolute terms.

New research has also sought to quantify the actual impact that Crossrail 1 has already had on commercial property values in Central London. The new study, by Ruth Thompson of Rowan Asset Management and undertaken at the LSE, uses data from the Property Archive database, which covers some 3,500 Central London commercial property transactions between January 2000 and February 2013.[14] A summary of the study is published alongside this paper on the London First website (LondonFirst.co.uk).

The study compares the change in value between Central London properties within a half-mile radius of a Crossrail 1 station and other Central London properties, based on two key dates in Crossrail's timeline: the first reading of the Crossrail Bill in Parliament in February 2005 (which can plausibly be seen as the announcement date) and the start of construction in May 2009 (the commencement date). 2,222 properties were bought and sold post the announcement and 952 post the commencement, with 1,089 and 478 occurring within the half-mile Crossrail 1 catchment respectively.

The study identifies the effect of Crossrail 1 on office prices per square foot by comparing price trends in the half-mile catchment area with the rest of Central London both before and after the announcement and the commencement. The announcement impact is the aggregate impact for the 8 years post-announcement (early 2005 to February 2013) and the construction impact is the aggregate impact for the 3.75 years post-construction (May 2009 to February 2013).

Table 5 below shows simplistically the average additional uplift in value that Crossrail 1 has had on Central London office properties within a half-mile radius of its stations.

Table 5
Impact of Crossrail 1 on Central London property

	Average Price PSqFt			Average Price PSqFt		
	Before Crossrail Bill 2005	After Crossrail Bill 2005	**Percentage Uplift (Feb 2005 to Feb 2013)**	Before Crossrail construction 2009	After Crossrail construction 2009	**Percentage Uplift (May 2009 to Feb 2013)**
Within half-mile	£471.96	£725.69	54%	£594.92	£741.33	25%
Outside half-mile	£447.95	£621.57	39%	£533.09	£626.92	18%
Difference[15]	£24.01	£104.12	15%	£61.83	£114.40	7%

[13] Crossrail: The impact on London's Property Market, CBRE, November 2013.
[14] The Crossrail Effect: The Impact of the Arrival of Crossrail on Central London Commercial Property Prices, Ruth Thompson.
[15] Difference = Within half-mile – Outside half-mile.

The average figures in Table 5 show that over the 8 years "post announcement" Central London office properties within the half-mile radius of a Crossrail 1 station have seen a 15 per cent additional uplift in values, over and above the underlying trend. Over the shorter and overlapping time period of 3.75 years since the start of construction, the uplift in values above the underlying trend has been 7 per cent.

The figures in Table 5 above show simple arithmetic averages, but the same study also used more complex statistical analysis to isolate the relationship. Using this methodology the results are as follows: after the first reading of the Crossrail Bill, which was identified as the "announcement" of Crossrail 1, office properties within a half-mile radius of Central London Crossrail 1 stations experienced an increase in price per square foot of 8-15 per cent above that seen in properties outside the half-mile catchment. Similarly, post the commencement of "construction", office properties within the half-mile catchment experienced an increase in price per square foot of 6-9 per cent above that seen in properties outside this sphere of influence. These additional capital value uplifts are again the aggregate uplifts over the 8 years post-announcement (early 2005 to February 2013) and over the 3.75 years post-construction (May 2009 to February 2013).

In splitting the dataset into assets with and without a significant retail element, the study also found that office properties that also include a retail element have traded at a premium to their predominately office counterparts within the half-mile Crossrail 1 catchment area. This premium has seen office assets with a retail element grow annually at between 0.5 - 1.0 per cent faster than those without a substantial retail element.

This is the first study to have undertaken detailed quantification of the actual impact of Crossrail 1 on commercial property values to date, and the findings support the contention that Crossrail 2 could generate additional growth in value should it go ahead. The findings also throw up some interesting questions as to how such additional value might contribute towards the cost of new infrastructure.

3.4 THE ADDITIONAL PROPERTY TAX REVENUES FROM THE IMPACT OF CROSSRAIL 1 ON PROPERTY VALUES

The increase in the value of commercial and residential properties within the zone of influence of Crossrail 1 stations also leads to a substantial increase in taxation receipts.

To the extent that Crossrail 1 stimulates additional development, this will generate additional property tax revenues in the form of council tax, business rates and stamp duty. To the extent that the values of existing properties rise because of Crossrail 1, this will not generate additional council tax or business rates because of the historic valuation basis for these taxes (and the redistribution mechanism applied if there is a council tax or business rate revaluation). However, higher values for existing properties will generate more stamp duty. These additional revenues currently accrue almost entirely to the national Exchequer.

In terms of additional development, GVA estimated the development of 57,000 homes and 3.25 million square metres of office space within 1 kilometre of Crossrail 1 stations. In order to estimate the additional property taxes attributable to Crossrail 1, we have to make an assumption as to how much of this development would have occurred in any event and how much is attributable to Crossrail 1. We have conservatively assumed that only 25 per cent is directly attributable to Crossrail 1, but the balancing 75 per cent is affected by Crossrail 1 through generating higher values, which are taken to be 10 per cent higher for offices and 21 per cent higher for residential, in line with the GVA report.

For the purposes of this exercise, we have assumed that all of the developments are sold on completion; that thereafter there is a 5 per cent per cent annual turnover (equivalent to properties being sold every 20 years and broadly consistent with national stamp duty data); that the average rate of stamp duty for these properties is 3.25 per cent for residential properties and 4.0 per cent for commercial property; and that the average annual council tax bill is £1,300. With these assumptions, the additional property taxes attributable to the Crossrail 1 impact on new development are approximately as follows:

	Additional property taxes from Crossrail-led incremental development (£million)	Additional property taxes from Crossrail-led higher values for baseline level of development (£million)
Residential – stamp duty on initial sale – one off	224	117
Residential – stamp duty on subsequent annual turnover – annual	11	6
Residential – council tax – annual	19	N/A
Offices – stamp duty on initial sale – one off	81	22
Offices – stamp duty on subsequent annual turnover - annual	4	1
Offices – business rates – annual	45	N/A
Total NPV (6 per cent discount rate)	1,622	256

Table 6
Additional property tax revenues attributable to Crossrail 1

As noted above, in relation to existing properties CBRE has estimated an increase in the value of existing residential properties around the Crossrail 1 stations of 20 per cent, or £14.7 billion in absolute terms. Using the same assumptions, this increment in values can be expected to generate additional stamp duty of £24 million annually (£400 million in NPV terms).

In terms of commercial property, the 'Property Data Report 2013'[16] assesses the value of all commercial property in Central London to be £120 billion. We estimate that a third to a half of this £120 billion is likely to be within the sphere of influence of Crossrail 1 stations. If we adopt a conservative assumption of one third and again adopt the GVA prediction of a 10 per cent increase in commercial property values within the sphere of influence, the additional stamp duty raised by this 10 per cent increase in value would be £8 million per annum or £133 million in NPV terms.

In conclusion, this analysis suggests additional property tax revenues attributable to the impact of Crossrail 1 totalling some £2.411 billion in NPV terms, almost all of which accrue to the Treasury and which were not explicitly taken into account in the funding package for Crossrail 1. However, if there were fiscal devolution (see section 4.1 below), this would be picked up within the broader tax revenues generated by developers through stamp duty, business rates and council tax.

[16] Property Data Report 2013, ABI, BPF, RICS et al.

4 OPTIONS TO PAY FOR CROSSRAIL 2

This section assesses the potential of various funding options for Crossrail 2, that is to say how the line could ultimately be paid for, drawing on lessons learned from Crossrail 1, the Northen Line Extension and the impact of new transport schemes on property values as discussed in the previous chapter.

It takes as its starting point the potential for further devolution of tax revenues to London Government so that the Mayor and London boroughs are able not only to plan, but also to deliver the investment essential to support growth in both London's population and its economy. Such investment is essential if the UK as a whole is to benefit from growth in London. Regardless of the scale and pace of fiscal devolution, however, we recognise that major infrastructure projects like Crossrail 2 are always likely to need a bespoke funding package. The subsequent sections outline how that might be tailored.

4.1 FISCAL DEVOLUTION

The London Finance Commission concluded that London government should be given greater autonomy to invest in the capital's infrastructure, both to cater for the growth already forecast for its population and economy and to promote additional economic growth. Specifically, the Commission proposed that Greater London Authority (GLA) Group borrowing ceilings be removed (while retaining prudential borrowing rules) and that property taxes should be devolved to London government. The yield of these taxes should be offset through corresponding reductions in grant to ensure a fiscally neutral position for the Exchequer, at the outset. Similar deals could be done for other major cities, building on the recently agreed Greater Manchester 'Earn Back' scheme (see box alongside).

Greater Manchester received agreement in principle for its 'Earn Back' Model as part of its City Deal in 2012. It uses a formula, linked to changes in rateable values over time at the Greater Manchester level, to provide a revenue stream to Greater Manchester over 30 years if additional GVA is created relative to a baseline. It provides an additional incentive for Greater Manchester to prioritise local government spending to maximise GVA growth. If successful in driving economic growth, Greater Manchester will receive a larger proportion of resultant tax take generated from this growth than would otherwise be the case under business rate retention.

The 'earned back' resources are there to be used for further investment, similarly prioritised on net GVA impact at Greater Manchester level. This will create a revolving fund that rewards Greater Manchester for delivering growth. Investment will be funded up-front by Greater Manchester and Government will surrender revenues only once Greater Manchester's investment has generated value above an agreed baseline from 2015-16.

The model is expected to have a substantial impact on Greater Manchester. The locally funded element of the programme is predicted to deliver a short-term boost to demand in excess of £2 billion by 2016 and in the longer term the forecast economic impact of the local contributions exceeds £1 billion per annum by 2025. At least 25 per cent of the impact comes through productivity gains and, given that these benefits are net at the Greater Manchester level, a significant proportion of the remainder will also be net at the national level. In addition, operating at Greater Manchester level will eliminate displacement from elsewhere in the city.

London First's working group looked at some indicative modelling of the implications of these reforms for London's ability to fund new infrastructure, shown in Figure 4 below. The model assumes the full package of property taxes is transferred to London (Stamp Duty Land Tax, business rates and council tax). It also makes assumptions about the allocation of these revenues between the GLA group and boroughs (a 40:60 split) and between the GLA and TfL (a 20:80 split). The model assumes that in the transfer year of 2018 the existing TfL grant would be replaced on a pound for pound basis for 80 per cent of the GLA's share of business rates, with the remainder being made up by a proportion of the GLA's share of SDLT. It is then assumed that revenues from business rates and SDLT grow by 1 per cent real per annum.

Assuming that, without devolution, the TfL grant is held constant in real terms (as was projected in the last Spending Round through to 2021), the chart suggests that while the incremental funding accruing to TfL from such a reform is low at the outset, over time the sums could be significant. By 2020, devolution could be worth an additional £0.2 billion a year to TfL. This rises to £1.3 billion a year by 2030, and would continue to rise thereafter.[17]

It is important to note that this growth in London's revenues is not depriving the rest of the country of spending resource; to the contrary, it is taking a modest sliver of tax growth and using it to enable London to grow, thus generating more resources for the Exchequer. In this way it is a true virtuous circle. Even if the London Finance Commission reforms were fully implemented, Tony Travers estimates that central government would still retain fully 88 per cent of all taxes raised in London.

London First's Crossrail 2 working group strongly recommends that there should be greater fiscal devolution to London government. We believe that such a move would strengthen accountability, enable greater investment in physical infrastructure generally and support future growth, including growth above levels that would otherwise take place. Critically for this paper, devolving property taxes to the Mayor could make a significant contribution towards funding Crossrail 2 in two ways.

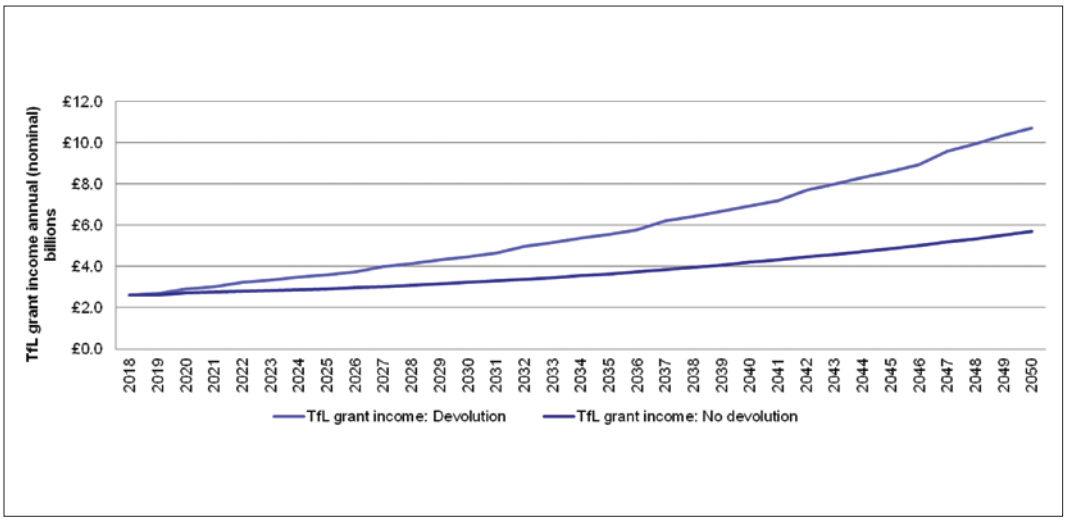


Figure 4
Modelled Implications of fiscal devolution for TfL

[17] All figures are nominal.

First, the Mayor would capture a modest fraction of the uplift in revenues from London's growth. This would provide a new revenue stream that could make a direct contribution to Crossrail 2 (alongside London's other infrastructure needs) as well as a stream against which the Mayor could potentially borrow. Investment in projects such as Crossrail 2 is, in itself, likely to generate additional increases in property taxes. Investment to support growth in this way can create a virtuous spiral in a growing, high productivity urban environment.

Second, the Mayor would have direct ownership of a broader range of tax revenue streams and would be less reliant on central government grant. This would enable him to manage the portfolio of London government expenditure more effectively, manage risk better and, in particular, to smooth uncertain and lumpy sources of revenue – such as the levies on development discussed below.

However, important as fiscal devolution is to London's future, large projects, such as Crossrail 1 and Crossrail 2, are always likely to require a bespoke funding package to enable them to go ahead. The rest of this report therefore examines the pros and cons of the various options that could comprise a Crossrail 2 funding package, consistent with either fiscal devolution as recommended by the London Finance Commission or the status quo.

The potential contribution from fiscal devolution towards Crossrail 2 could range from no direct contribution if no devolution, up to £5.2 billion (in 2012 prices) if all of TfL's share of the future growth in London's property taxes (based on the modelling above) were to be used to fund Crossrail 2 over the period 2021-2030.

4.2 SOURCES OF FUNDING FOR CROSSRAIL 2

When the Chief Secretary to the Treasury launched the government's latest infrastructure plan last summer[18] he stated that: "The government is committing £2 million to support a funding and financing study into Crossrail 2. The challenge for the Mayor of London now is to determine how at least half of the cost of the scheme can be met through private sources, ensuring that it will be affordable to the UK taxpayer."

We note that in needing to demonstrate how the majority of funding will come from non-Exchequer sources, London is in a unique position relative both to other cities and to other major infrastructure projects, such as HS2, which are almost wholly dependent on central government funding. Notwithstanding the substantial net contribution to UK spending that is made by London taxpayers, the working group acknowledges the Government's challenge for London to take the lead in funding Crossrail 2. The following sections therefore explore the scope for funding from those who will benefit from the railway in and around London.

Funding can come from a number of potential sources: from government, which will see increased economic growth and tax yields; from Network Rail, which will otherwise need to invest separately to address major capacity pressures on the rail network into London; from rail and Tube passengers in London and the SE, who benefit most obviously from the investment as direct users of the line or from new services or lower congestion elsewhere on the network; from businesses and residents, who benefit from London's enhanced connectivity and continued growth; and from property owners and developers, who see land and property values rise as a result of investment in improved transport links. However while these benefits are all real, there are a number of practical challenges in translating them into hard cash to pay for the project.

Discussing sources of funding is further complicated by the scheduling of individual cashflows and thus the potential for their value to change, as a pound in the future is worth less than a pound today. It is not currently certain when Crossrail 2 might start, or the number of years over which the expenditure might be

[18] 'Investing in Britain's future', Speech on the government's infrastructure plan, Chief Secretary to the Treasury Danny Alexander MP, June 2013.

incurred. In view of this, and for the sake of comparability with other infrastructure projects currently under discussion, we have shown all of the estimated costs and estimated contributions from different funding sources in 2012 prices.

The aim of this report is not to construct a final package to fund Crossrail 2 at this stage; it is rather to look at a potential range of ways of monetising the benefits that accrue to different groups and to set out a menu of potentially credible funding options. It will ultimately be for elected politicians to make judgements on the political viability of each individual option. At this stage we would simply note that all funding options inevitably have some degree of challenge and would urge against any of these options being ruled out prematurely.

A) LONDON FARE PAYERS

CROSSRAIL 2 FAREBOX

Once in operation, Crossrail 2 is expected to generate a surplus from operations (i.e. fares income less operating and maintenance costs, including rolling stock). As with Crossrail 1, this projected surplus could be used to fund debt that would part-finance the scheme's construction.

For Crossrail 1, TfL has raised £1.9 billion in debt, which will be funded by part of its farebox surplus. The farebox also funds rolling stock, depots and the cost of the works on Network Rail's network, Work is ongoing by TfL to develop estimates of the level of operating surplus, but drawing on the experience of Crossrail 1, we assume that the Crossrail 2 operating surplus will support £3 billion of borrowing in 2012 prices.

An additional contribution could be sought through a higher fare on Crossrail 2 services. In the case of Crossrail 1, special fares were debated, but ultimately ruled out given both the desirability of integrating the line within the wider London transport system and the fact that the new line brings system-wide congestion and capacity benefits. As a result, Crossrail 1 fares will be fully integrated into TfL's zonal fares structure (with the exception of services to Heathrow, which will take over existing Heathrow Connect services and continue to attract a premium).

A similar approach may be judged appropriate for Crossrail 2, but further work should take place before coming to that conclusion. Ongoing developments in technology could enable more dynamic pricing options to become possible, with differential pricing options on different routes at different times of day. In theory this may allow some form of Crossrail 2 supplement to be sought, but for now we adopt a cautious approach and assume no additional contribution from premium fares.

THE WIDER TFL FAREBOX

A contribution towards Crossrail 2 could potentially be sought from Tube and London rail passengers as a whole – given the significant congestion relief benefits that Crossrail 2 would bring right across the wider London transport network.

Seeking to levy fare rises is always a difficult option. However, we believe the case for fares to make a contribution would be strengthened if these additional revenues were hypothecated towards a tangible project – such as Crossrail 2 - that would bring significant benefits to passengers and would not otherwise take place.

A 5 per cent real increase to Tube and Overground fares, which could be phased in over a number of years (for example RPI+1 for a five year period), would generate £240 million per annum, or perhaps £180 million after allowing for elasticity effects. For the purposes of contributing to Crossrail 2, we have worked on the basis of such a stepped increase taking place by 2020 and then being valued over a 40 year borrowing period. This could support £3.12 billion of funding in 2012 prices.

Borrowing in expectation of future fare rises will inevitably be seen as risky given the prospect that they may not be implemented. Nonetheless this is a credible option that should be pursued further. In practice, the precise balance to be struck between the Crossrail 2 operating surplus and the wider TfL farebox could be determined at a later date.

In parallel, TfL should continue to press ahead with plans to increase its net revenues by further streamlining operational efficiency through such initiatives as automated ticketing and trains and adopting a more commercial approach to its property and other assets.

B) PROPERTY DEVELOPMENT

Beyond transport users, further significant beneficiaries of the new line are those who own or seek to develop land and property around stations along the route. Chapter 3 showed the significant value uplifts being generated by Crossrail 1. Crossrail 2 can also be expected to have a positive impact on property values. The following sections explore the extent to which existing policy tools might help capture such uplifts to help pay for the scheme.

GENERAL DEVELOPER CONTRIBUTIONS

Under the Crossrail 1 funding package, the Mayor has committed to provide £600 million through developer contributions. £300 million of this is due to be raised through use of planning obligations under Section 106 of the Town and Country Planning Act 1991 on commercial developments in central London. The other £300 million is to be raised from the Community Infrastructure Levy (CIL), which applies to both residential and commercial developments throughout London. The CIL is a new charge, introduced by Government, to be paid by developers, to help fund infrastructure required to support the development of an area. In London both the Mayor and boroughs can levy a CIL; the Mayor introduced his in April 2012.

The s106 contributions are assessed on a case by case basis on office, retail and hotel development within the Central Activity Zone, Docklands and within 1km of each Crossrail station within the GLA boundary (with the exception of Woolwich which is being funded separately). The CIL charge for Crossrail is applied to most new development across London, based on location (there are three charging zones), property type and the amount of additional floorspace a new development will produce. The London borough councils are also able to charge CIL and while charging schedules are still being developed in a number of boroughs, in general the boroughs have set rates at a higher level than the Mayoral CIL - in some cases significantly higher.

The GLA's experience to date has been that, after a slow start, receipts are now coming in from these sources. After a receipt of around

£15 million in the first full year, developer contributions are now generating around £40 million annually and expected to be contributing around £80-100 million a year by the early 2020s. However, revenues are lumpier and less predictable than from other streams such as the Business Rate Supplement. This reduces the scope to borrow against them directly, although, as noted above, were the Mayor to have greater devolved revenue streams he could manage this lumpiness more effectively as part of his overall portfolio of revenues and debt.

Developer contributions could, in principle, continue to make a similar contribution towards Crossrail 2, once relevant Crossrail 1 commitments have been met. At this point, the current s106 policy for central London will come to an end, but in principle the Mayor could continue to raise the CIL at its current rates and reapply it to Crossrail 2 or other transport projects. He would also have the policy option of amending CIL rates to incorporate the s106 levels, subject to the usual viability tests.

The fact that borough CILs have been set at relatively high rates in a number of areas highlights an additional option of redirecting a proportion of these to a strategic scheme such as Crossrail 2. Given the two tier structure of CIL now established in London it will be necessary for the Mayor and boroughs to engage in identifying appropriate Crossrail 2 contributions without having damaging effects on the overall viability of development. The example of the Northern Line Extension covered earlier showed that in certain cases such agreement between Mayor and Boroughs can take place, providing the long-term certainty to enable both infrastructure and property development to take place.

Developer contributions may have a particularly significant role to play, should larger scale development be proposed – and enabled – along the route. This is considered further in the following section.

INTENSIFICATION OF DEVELOPMENT

One idea discussed by the group was to raise additional revenues by enabling more intensive development at selected areas along the route, as has been the case in Nine Elms with the Northern Line Extension. This could also make a significant contribution to increasing the supply of new housing in London.

In the central section, the group saw potential for additional retail in and immediately around stations, as well as for significant commercial and residential development over and around stations. This is being done to some extent on Crossrail 1 at places like Canary Wharf,

Figure 5
The Upper Lea Valley Opportunity Area

but, elsewhere, significant development opportunities have been forgone, as with the refusal to countenance high rise development above the Tottenham Court Road station adjacent to Centrepoint, for example. Such high-density over station development is common in places like Japan and Hong Kong, where it is led by the local transport authority and scheme promoter so as to capture value uplifts directly. CIL could be used to help capture this uplift in London around stations while over station development itself could be done in partnership with private sector developers, so there would be no automatic need for the state to acquire additional land or lead development in order to capture value.

Some Crossrail 2 stations appear to offer limited additional development potential, due to the scale of development currently underway or planned. These include Victoria, Tottenham Court Road and Euston, although even here new Crossrail 2 station exits will provide interesting new development opportunities. However, others offer significant potential – potentially including Wimbledon, Clapham Junction, Kings Road, Alexandra Palace and Hackney. The extent to which such development should be led by TfL or Network Rail, as appropriate, by the private sector, or through joint ventures should be explored further. We propose a target of £0.5 billion (in 2012 prices) from retail development and high-density over station development along Crossrail 2's central route section. This would be consistent with TfL's strategy to develop its property portfolio in a way that provides significantly increased revenues.

Beyond the central section, the working group saw considerable potential for targeted large scale development, supported by a more permissive planning environment, in key areas along the route. Previous transport extensions in London have played an essential role in supporting new housing development in particular, and have, over time, led to the creation of significant value. The extension of the Tube into London's north-west suburbs drove London's expansion in the 1930s, while the extension of the Jubilee Line eastwards spurred regeneration of the Docklands and east London from the 1990s through to the present day.

The working group discussed two areas in particular: the Upper Lea Valley in north London and the area around Chessington South in the south west. These are shown in figure 6 overleaf and discussed in turn below.

Figure 5 shows the location of the Upper Lea Valley Opportunity Area, which covers just under 4,000 hectares across the London Boroughs of Enfield, Haringey, Waltham Forest and Hackney. The area is currently London's second largest industrial area, and has a good strategic location within the London-Stansted-Cambridge corridor. However, it currently suffers from relatively weak public transport links. Current land values are relatively low (reflecting current uses).

Crossrail 2 could provide new rail connections for the Upper Lea Valley. Crossrail 2 requires a significant upgrade of the existing West Anglia Main Line to provide four tracks compared to the existing two. This would provide for new and more frequent services for destinations along the Lea Valley, which are currently poorly served, as well as much-needed enhanced services for longer distance commuters and users of Stansted airport.

A number of specific destinations could benefit from transformed rail services, which might in turn enable a significantly greater amount of development to take place than is currently likely or planned. For example, Crossrail 2 could transform the rail service to Brimsdown. Brimsdown currently has 1 or 2 trains an hour and a journey to Tottenham Court Road in the West End would take 37 minutes with two changes. With Crossrail 2, Brimsdown could have 10 trains an hour, with a direct connection to Tottenham Court Road in 20 minutes.

One option that should be explored further is the potential of more intensive development at Brimsdown. Brimsdown currently has large quantities of low density industrial land. As an example, if 130 hectares of this was redesignated for residential development then initial analysis suggests that this could allow up to 20,000 new homes to be created. Assuming a CIL contribution to Crossrail 2 of £100 per sq m per dwelling for modelling purposes, and an average dwelling size of 125 sq m, this could raise some £250 million for Crossrail 2 (in 2012 prices).

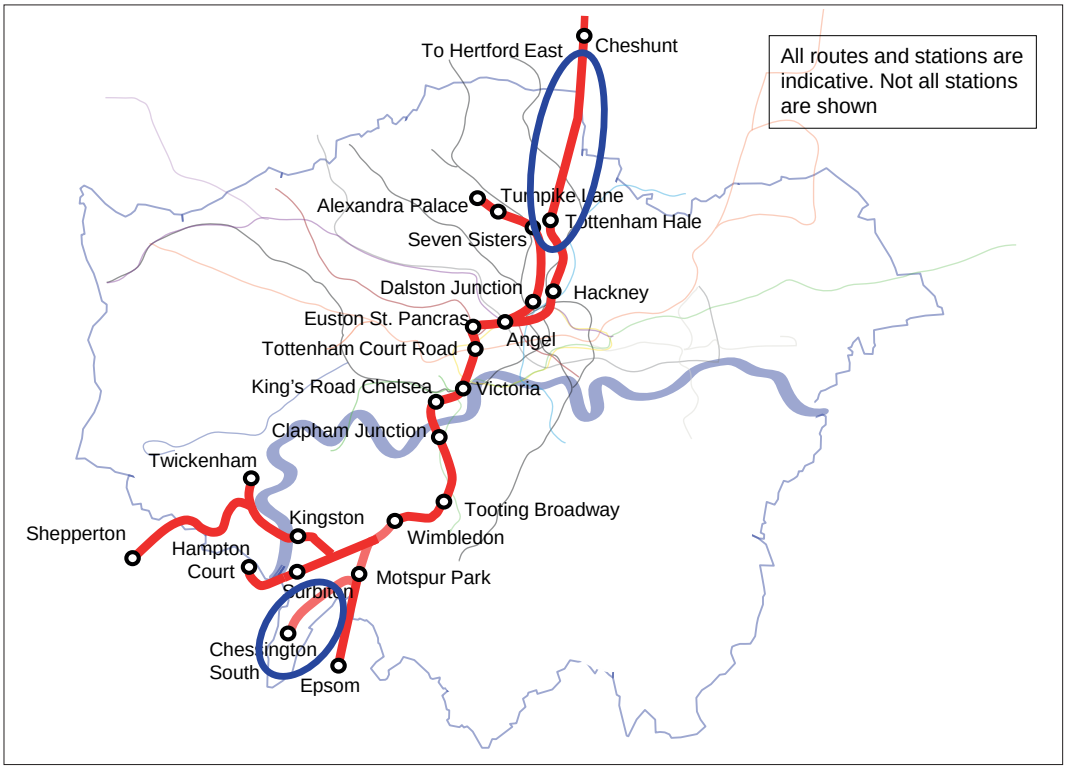


Figure 6
Crossrail 2 opportunities for development

A second option would be to allow more intensive residential development at a location along the south western end of the route. As an example, the group identified the area around Chessington South in the Royal Borough of Kingston upon Thames, which is one of the destinations being considered for Crossrail 2. The area to the south of the Borough contains land that could potentially be released for new housing. The main transport connection at the moment is an underutilised branch line to Chessington South, which provides two trains per hour to Waterloo with a 36 minute journey time. An extended Crossrail 2 line and new station in the area could at least double service frequency to a minimum of 4 trains an hour and provide a direct rail connection into the West End in 35-40 minutes.

For illustrative purposes, if 450 hectares of land were released for housing then some 70,000 new homes could be built in a new high value residential location. Assuming a CIL contribution of £200 per square metre per dwelling, initial modelling suggests that some £1,660 million could be raised for Crossrail 2. Taking into consideration the fact that a CIL rate of over £500 for residential development has been set by Wandsworth for Battersea and Nine Elms, this figure could potentially be even higher.

The working group recommends that the Mayor, with relevant boroughs, explores all of these options in further detail – both for their potential to provide much needed new housing and development and for their capacity to help fund the new transport links they would require in the form of Crossrail 2. Delivering new developments of this sort would require strong leadership from the Mayor or local authority and the removal of certain current planning constraints.

OTHER DIRECT BENEFICIARIES

The Crossrail 1 funding package also contained contributions from a number of direct beneficiaries of the new line. These included contributions from the City of London Corporation, Heathrow, Canary Wharf Group and Berkeley Homes. An initial assessment of the proposed Crossrail 2 route reveals few options for a comparable approach with Crossrail 2. Should TfL and Network Rail conclude that the new line should go to Stansted then that may be one option. However, any investment would need to be supported by the airport's customers in the form of the airlines.

The working group recommends that this option be kept under review but sees limited options at the present time. However, an assessment should be made of lessons from the deals struck with Canary Wharf Group and Berkeley Homes (we assume the benefits of any similar deals would be captured either under developer contributions or the intensification of development).

C) LONDON BUSINESSES AND RESIDENTS

BUSINESS RATES

Business is expected to contribute around £4.1 billion to Crossrail 1 using income generated from a new business rates supplement (BRS) at 2 pence per £1 of rateable value. This was a key element of the overall package agreed between Central government, TfL and the business community in 2007, recognising the value business placed on a scheme that would connect Canary Wharf, the City and Heathrow (further details about the Crossrail 1 BRS can be found in the Box overleaf).

The GLA had estimated that the BRS would raise around £219 million in its first year from April 2010 and is assuming that this figure will remain constant up to the next expected revaluation, which is now scheduled for 2017. Actual BRS receipts to date were £224 million in 2010/11, £232 million in 2011/12 and £225 million in 2012/13, marginally above estimates. The borrowing is also likely to be realised at a lower interest rate than that assumed in the GLA's prospectus. The forecast annual Crossrail BRS income to be generated by 2035-36 (the expected final revaluation date) is expected to have risen to around £413 million per annum in cash terms on the basis of these assumptions.

The GLA expects the BRS to run for a period of between 24-31 years until its £3.5 billion of borrowing is repaid, with an expected end date of 2037-38. The actual end date is dependent primarily on the interest rate payable on this borrowing and the level of the taxbase over the lifetime of the Crossrail BRS (so the higher initial income and lower interest rates than the original prospectus would suggest a slightly earlier end date.) The GLA will seek to minimise the overall liability but it is estimated that £8.1 billion will be collected through the Crossrail BRS over its lifetime, once financing costs are included. The BRS was set up as a hypothecated tax with a clear purpose – financing Crossrail 1. It has been a highly successful and reliable way of raising funding for that project. While the BRS has made a significant contribution to Crossrail 1, it is difficult to see it making an identical contribution to Crossrail 2, given the length of time the existing BRS is due to run in order to pay for Crossrail 1.

The working group does not believe that a new and additional Crossrail 2 supplement could be introduced on top of the existing BRS without damaging business competitiveness in London, particularly in key sectors such as retail. The amount paid by businesses already increases in line with property values over time. The working group also observed that Crossrail 2 is a very different scheme to Crossrail 1 and, while of significant benefit to London as a whole, does not benefit key business districts like the City and Canary Wharf as Crossrail 1 did.

However, the working group considers that there is a case to be made for the BRS continuing in its current form and at its current level beyond the 2030s to help fund the infrastructure needed to support London's continued growth. Changing the purpose of a hypothecated tax and extending it should not be done lightly, because it affects credibility; such changes would also require a ballot of ratepayers or legislation. But we believe that there is a good argument to put to business for changing the purpose of the BRS from Crossrail 1 to Crossrails 1 and 2. Under this proposal no ratepayer would pay more until the mid to late 2030s (when the current BRS is due to expire).

These arguments will need to be properly set out and debated as the Crossrail 2 debate continues. It is entirely right that the ratepayer contribution should be fixed and linked to specific projects. Extending the BRS for another 30 years beyond 2037 could support a refinancing in the mid 2020s, potentially worth the equivalent of £1.8 billion in 2012 prices.

Powers were granted to the GLA to introduce a new business rates supplement (BRS) for Crossrail under the 2009 Business Rates Supplements Act.

The Crossrail BRS will be used to finance £3.5 billion worth of borrowing by the GLA and the repayment of this sum after the end of the Crossrail construction period. A further £0.6 billion (the estimated Crossrail BRS income over and above that required to finance the interest on the £3.5 billion of borrowings between 2010 and 2016) will be applied to fund the Crossrail construction and financing costs.

In April 2010, following consultation, the Mayor introduced a levy of 2p on non-domestic properties with a rateable value of over £55,000 in London (exempting small businesses below that threshold). A typical ratepayer occupying a property with a rateable value of £100,000 would pay a BRS contribution of £2,000 (i.e. its £100,000 rateable value x 2 per cent) each year. The GLA estimates that almost half of properties eligible to pay the supplement will be liable for a BRS of £2,500 or less each year (i.e. less than £50 per week).

The Crossrail BRS is collected on behalf of the GLA by the 32 London boroughs and the City of London Corporation on the same bills as general business rates (National Non-Domestic Rates - NNDR). Reliefs for the BRS (e.g. for registered charities) apply on the same basis and at the same rate as for NNDR. The GLA estimates that fewer than one in five of London's business and other non-domestic premises are liable to pay the Crossrail BRS – falling to fewer than one in ten in a number of outer London boroughs.

This precise sum raised at any time is likely to vary slightly from year to year depending on various factors and variables as well as the wider economic situation. The GLA has assumed that the taxbase will increase by just over 6 per cent at the next revaluation, which is now scheduled for 2017. From the 2020 revaluation onwards, step rises in the taxbase of around 15 per cent are assumed every five years, to account for a projected increase in rateable values. This is in line with historical trends prior to the 2010 revaluation.

COUNCIL TAX

A Crossrail 2 contribution could potentially be sought from all Londoners via their council tax bills, as was used to help fund the London Olympics. The justification for such a levy would be the benefit to Londoners as a whole, given the significant capacity relief Crossrail 2 would provide right across London's public transport network.

The GLA Olympics Games precept is levied on residential properties across London and is due to come to an end in 2016/17. The annual precept amounts to £20 for a Band D property, whose average council tax would be around £1300. In principle, there could be a similar precept in the future for Crossrail 2.

If such a precept were created, it would easily raise £50 million a year in 2012 prices, which, with a 40 year borrowing period, could support debt of £0.87 billion. This could potentially make a significant contribution towards Crossrail 2.

A more targeted approach could, in principle, be undertaken. Options include limiting the precept to only those boroughs with a Crossrail 2 station, or perhaps to an even narrower area still, such as a 1 mile radius around stations (where there are strong grounds for expecting significant uplift in the value of residential property). Were council tax setting power to be devolved to the Mayor, he could adopt a more progressive approach towards higher value homes. And it would be highly desirable to seek a similar council tax supplement from those local authorities outside London that would also be significant beneficiaries of Crossrail 2. These options should all be explored further.

OTHER TAXES

The working group also took a 'blue skies' approach to considering the potential role of other taxes as a funding source for Crossrail 2, such as a payroll tax or tourist tax. Most of these would have serious potential impacts on London's competitiveness and so the group does not propose that these are explored further.

D) MISCELLANEOUS OTHER OPTIONS

SALE OF EXISTING ASSETS

Additional revenues could be released from the sale of existing publicly owned assets, such as Crossrail 1. Transferring an existing asset to the private sector once construction has completed and construction risk has been removed is a potentially attractive option. For example, three years after the completion of HS1, the high speed line from London to the Channel Tunnel, the Government let an infrastructure concession for 30 years. This returned £2.1 billion to HM Treasury – approximately one third of the construction cost. Another concession could be let at the end of the first, providing in the long term another cash return.

TfL should explore the scope for releasing value through the transfer of existing assets to the private sector. In particular, an infrastructure concession for Crossrail 1, similar to HS1, could have the potential to net a receipt in the region of £1 billion (the precise sum could vary up or down depending on the level of any future payments).

However, wider value for money needs to be assessed, as any new owner is liable to have higher borrowing costs than TfL and, critically, track access charges will need to be paid to the new entity on an ongoing basis (this is the return that the new asset owner will require in order to provide an up-front cash payment). Operational issues will also need to be considered for assets that are part of an integrated network. Essentially this is more about financing than funding, as London Government would be mortgaging assets in return for an up-front receipt.

SPONSORSHIP

Finally, it may be possible to raise funds through some form of sponsorship of the new line or stations. Sponsorship could take the form of station or line (re)naming rights, or alternatively, dominating a particular part of the station through advertising opportunities or exhibition space. In recent years, TfL has grown its commercial revenue through deals such as the Barclays Cycle Hire scheme and the Emirates Air Line and currently receives around £10 million a year in sponsorship income.

TfL is currently carrying out a consultation on the renaming rights of London Underground stations and lines, to establish how the public feel about this opportunity, whether there is demand from media agencies and clients, and what the size of the potential revenue pot might be. Current feedback indicates limited public appetite for renaming lines and stations, which represents a major constraint as the vast majority of Crossrail 2 stations exist in some form already. Station 'domination' is a more likely option, but it is difficult to asses whether the revenue achieved here would be much more than incremental to existing station advertising spends. Any sponsorship proposition would need to be balanced with the advertising and general commercialisation approach, including retail, to ensure that all potential revenue streams are optimised.

Whilst TfL should undertake further work on sponsorship options, the group doubts that any contribution would be material to the overall Crossrail 2 funding challenge.

E) CENTRAL GOVERNMENT GRANT & NETWORK RAIL

CENTRAL GOVERNMENT GRANT

Crossrail 1 secured a contribution of £4.7 billion from the DfT on account of its importance to the wider London and South East economy and hence to UK economic growth as a whole. This represented around a third of overall funding. A similar case exists for a contribution towards Crossrail 2, for two principal reasons.

First, Crossrail 2 will support economic growth in London, which, in turn, will generate substantial tax revenues for the country as whole. London makes a substantial net contribution to UK public spending and even were property taxes to be devolved to London government, the overwhelming bulk of London taxes would still go to the Exchequer.

Second, Londoners will be paying a range of taxes and charges to support the provision of Crossrail 2 and it is equitable that some contribution is made by Government towards the considerable benefits that will accrue to users who live outside the city.

There is no exact science in calculating the right amount of funding from central government. It could wax and wane in light of decisions taken on the other streams; it could be less if government were willing to devolve property taxes to London; and would be more if political decision makers were unwilling to countenance real fare or tax increases.

Central Government grant is roughly a third of the funding of Crossrail 1; as a base case this report proposes that government funds a quarter of Crossrail 2. This amounts to £4 billion of our central case in 2012 prices, spread over a construction period of around 10 years. We further recommend that this be provided during the early years of construction, in order to increase the amount that can be financed through other sources, notably the BRS, where the later the additional debt is drawn down for Crossrail 2, the more can be raised. This undoubtedly represents a substantial sum but, to put it in context, the government is intending to spend almost 20 times as much - £73 billion - on transport infrastructure in the six years of the 2013 spending round[19].

[19] Investing in Britain's Future, HM Treasury, June 2013.

NETWORK RAIL

Crossrail 2 could play a significant role in relieving congestion on the existing rail network by providing significant additional capacity for commuters from the south west and north east of London. By 2031, Network Rail estimates a capacity shortfall on main line services into Waterloo of around 20,000 passengers in the single high peak hour. This is the equivalent of up to 20 trainloads of passengers being left stranded. Crossrail 2 could make a significant contribution to bridging that gap.

As outlined in chapter 2, alternative options to Crossrail 2 have been assessed as coming in at a high cost, while providing significantly fewer benefits. We therefore see Crossrail 2 as a cost-effective means for Network Rail to deliver the step-change in capacity needed on this vital section of the national rail network in the 2020s.

As part of the Crossrail 1 package, Network Rail is delivering works up to a value of £2.3 billion to enhance the existing rail network. Given the forecast demographic and economic growth in London, together with its projected impact on rail services that are already heavily congested, we believe it reasonable to assume that some proportion of the future investment budget for enhancing the railway will need to be directed towards expanding capacity in London and the wider SE. On the basis of the analysis done to date, we further assume that Crossrail 2 would be a priority within this. For the purposes of this study, we assume a Network Rail contribution of £2 billion (in 2012 prices) towards Crossrail 2, paid for across the network and not just from the Crossrail 2 farebox.

4.3 FINANCING THE FUNDING

The focus of this report has been how Crossrail 2 can be paid for. For most projects, this is the hard part. The financing is simply a mechanism to bridge the up-front need for cash to fund the project to the future funding sources and in many cases is relatively straightforward to structure when the funding is secure. The cost of the finance is a function of the credit-worthiness of the borrower and the risk of the project.

While borrowing by central government is the cheapest source of finance, government levels of overall debt are constrained by prudence and the markets – potentially irrespective of a project's high return or low risk.

Private finance can have its own attractions – while it is more expensive, the higher debt cost can be more than offset by private sector disciplines over cost and project timing. However as recent large projects, such as the Olympics and now Crossrail 1, have shown, an arm's length project vehicle with independent governance and contractual mechanisms can create similar disciplines to private sector financing without the cost premium.

As noted above, there is scope for asset sales to reduce TfL's overall debt level and this should be explored, but if the assets are core to TfL's business then higher operating costs, as a result of higher debt costs on the part of the new owner, are likely to make the value for money poor.

Taking these points together, it is likely that Crossrail 2's financing will be via on-balance sheet government or Mayoral borrowing.

5 SUMMARY
OF FUNDING OPTIONS

As set out in chapter 2, current estimates suggest a cost for Crossrail 2 of £12 billion in 2012 prices, rising to £20 billion if an additional two-thirds of the project's overall cost is added as contingency, as demanded by the Treasury. For the purposes of exploring funding options in this report, we have taken a mid-point of £16 billion for Crossrail 2, a similar cost to Crossrail 1, which is a broadly comparable project.

It is not currently certain when Crossrail 2 might start, or the number of years over which the expenditure might be incurred. In view of this, and for the sake of comparability with other infrastructure projects currently under discussion, we have in the table below shown the estimated costs and estimated contributions from different funding sources in 2012 prices.

It is again worth emphasising that the aim of this report is not to construct a final package to fund Crossrail 2 at this stage; it is rather to set out a menu of potentially credible funding options that between them are more than capable of enabling the project to proceed. It will ultimately be for elected politicians to make judgements on the political viability of each individual option.

Funding Source	2012 prices
Central Government grants	**4.00**
Network Rail	**2.00**
Wider TfL farebox	**3.12**
Crossrail 2 farebox	**3.00**
Developer contributions	**0.99**
Intensification of development	**2.40**
Council tax	**0.87**
Business rates	**1.81**
Fiscal devolution	**5.21**
Total including fiscal devolution	**23.40**
Total excluding fiscal devolution	**18.19**
Cost Estimates	
Lower cost estimate	**12.00**
Upper cost estimate	**20.00**
Central cost estimate	**16.00**

All figures in £bn. Where relevant, indexed back to 2012 prices at 2.5 per cent p.a.

This is illustrated in Figure 7 below:

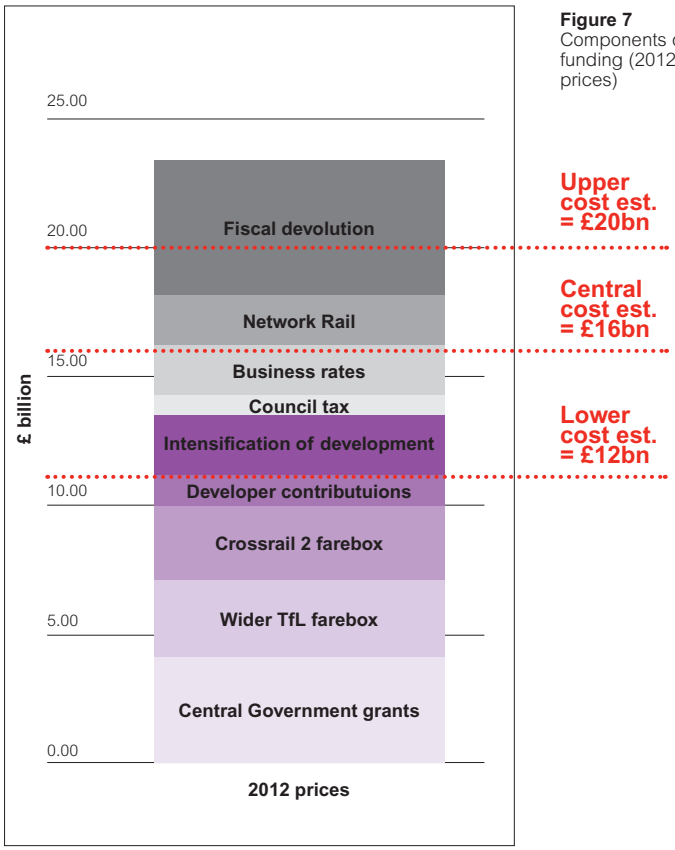


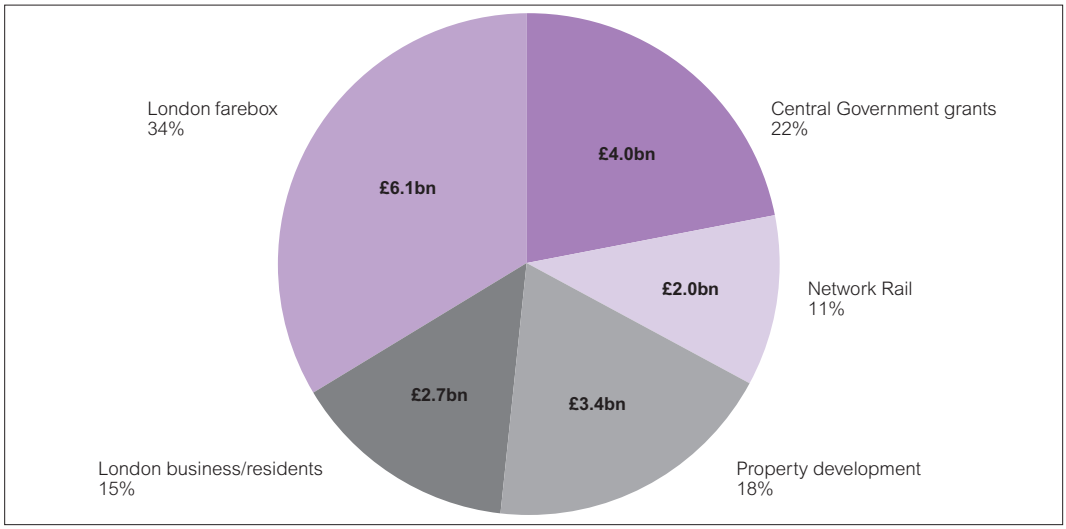
Figure 7
Components of funding (2012 prices)

The working group has identified a menu of funding options totalling over £23 billion in 2012 prices. Even if no fiscal devolution were to take place, the other funding sources would be sufficient to fund the construction of Crossrail 2, based on a central cost estimate of £16 billion, while providing policymakers with some choice as to the mix. With fiscal devolution, London Government would have further flexibility over sources and be capable of funding over-runs even if the upper cost estimate, based on high levels of contingency, was the outturn.

This potential flexibility should provide comfort to political decision makers, who will inevitably be cautious about the acceptability of elements of this package. The working group would emphasise that none of these options need bite immediately, though the sooner we begin planning for London's continued growth, the better. All funding options inevitably have some degree of challenge and we urge all interested parties to resist ruling options out at this stage.

The chart below presents the various funding options set out above based on the current distribution of tax revenues between central and London government (i.e. excluding fiscal devolution). On the basis of this analysis, the working group is confident that the Government's challenge of showing that at least half of the project's cost can be paid for through private, or non-Exchequer, sources can be met. The precise contribution being made by any one source will of course ultimately depend on both the choices made by politicians and the final project cost.

Components of funding sources, excluding fiscal devolution, in 2012 prices (£billion).
Total = £18.2bn



London First is grateful to KPMG for their assistance in the analysis and presentation of the estimated costs and funding sources.

6 CONCLUSION

Crossrail 2 is essential to support London's future growth and competitiveness, as it becomes a city of 10 million people in the 2030s. Without Crossrail 2, the projected population and jobs growth will put intolerable pressure on the capital's transport network over the course of the 2020s. This is not a quality of life point for Londoners alone: such an outcome would undermine London's productivity and the growth in its contribution to both the wider UK economy and the UK's tax base.

Experience from Crossrail 1, and other transport schemes around the world, indicates that Crossrail 2 would generate considerable value above and beyond the cost of the scheme. A key challenge is how best to capture some of this additional value to help enable the scheme to go ahead.

This report has explored a range of potential funding options for Crossrail 2. Some of these are tried and tested mechanisms for funding major transport schemes of this sort. Others, such as the proposed intensification of development at either end of the route, are more innovative in today's context in the UK – though, of course, would be recognisable internationally and to the transport planners and investors who built Metroland in the early twentieth century.

London First's working group believes that a credible funding package for Crossrail 2 can be constructed, drawing on a diverse range of sources. Moreover, funding constraints would be eased and flexibility between funding sources enhanced if London government were given greater fiscal autonomy to invest in the capital's infrastructure.

We now urge the Mayor, boroughs and central government to embrace this report and to work with businesses and residents in London and beyond to negotiate a funding plan that would enable construction of Crossrail 2 to take place over the 2020s.

All of the options outlined here have political and practical challenges. None will be painless to implement. There is considerable opportunity to flex between them. But Crossrail 2 can be built in the next decade and the growth and success of London and the UK demands that action begins now.

ANNEX 1
FURTHER ANALYSIS ON FUNDING OPTIONS

We have set out below further analysis on the potential cost and funding contributions for Crossrail 2. In the first column we show the estimated costs and estimated contributions from different funding sources in 2012 prices. In the second column we show the same but with all values inflated by 2.5 per cent to 2025, a potential midpoint for the construction of Crossrail 2, were it to start in 2020 or 2021. In the third column we show the effect of differential inflation, where the Crossrail 2 costs, developer contributions and intensification of development values are inflated by 3.5 per cent and the other funding sources by 2.5 per cent. Where a funding source requires access to funding post 2030 we have assumed borrowing against that revenue stream using a 6 per cent interest rate and, for simplicity, a cover ratio of 1.00 and no other costs or charges.

Funding Source	2012 prices	2025 prices (A)	2025 prices (B)
Central Government grants	**4.00**	**5.51**	**6.26**
Network Rail	**2.00**	**2.76**	**2.76**
Wider TfL farebox	**3.12**	**4.30**	**4.30**
Crossrail 2 farebox	**3.00**	**4.14**	**4.14**
Developer contributions	**0.99**	**1.36**	**1.43**
Intensification of development	**2.40**	**3.31**	**3.75**
Council tax	**0.87**	**1.19**	**1.19**
Business rates	**1.81**	**2.50**	**2.50**
Fiscal devolution	**5.21**	**7.18**	**7.18**
Total including fiscal devolution	**23.40**	**32.25**	**33.51**
Total excluding fiscal devolution	**18.19**	**25.07**	**26.33**
Cost Estimates			
Lower cost estimate	**12.00**	**16.54**	**18.77**
Upper cost estimate	**20.00**	**27.57**	**31.28**
Central cost estimate	**16.00**	**22.06**	**25.02**

All figures in £bn. Indexation as detailed in the explanatory paragraph above.

ANNEX 2
MEMBERS OF WORKING GROUP

Francis Salway (Chair of working group)

Andrew Adonis, Chair of previous London First Crossrail 2 group

Simon Hipperson, Chief Executive EMEA, Lend Lease*

Rob Holden, Chairman, HS1 Limited

Kerem Kusi, Managing Director for Bechtel Enterprises, Europe, Africa and Middle East, Bechtel

Andrew Murphy, Retail Director, John Lewis Partnership

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*member of working group until November 2013

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We are extremely grateful to TfL and Network Rail who provided expert advice and support throughout this project, and to KPMG for their supporting analysis on funding options.

We are also grateful to Ruth Thompson for consenting to her research into the property effects of Crossrail 1 being published.

The analysis and conclusions contained in this report are those of the London First working group as a whole and no endorsement should be inferred from any one individual or organisation referred to above.

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