Barking Riverside Extension
Transport options summary report

May 2015

MAYOR OF LONDON

OVERGROUND

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1. Purpose

1.1. The purpose of this report is to present the various transport options that were considered to serve the Barking Riverside area, in-order to unlock the full development potential of the site. This document also summarises the assessment process used to evaluate these options.

1.2. This process examined various policy objectives and used business case assessment criteria to filter a long list of transport options to the two best performing options. These options were:

- A London Overground extension of the Gospel Oak to Barking line, from Barking to Barking Riverside; or
- A Docklands Light Railway (DLR) extension to Barking Riverside.

1.3. The assessment concluded that both options could support the delivery of 10,800 homes at Barking Riverside. The assessment also concluded that extending the London Overground Gospel Oak to Barking line to Barking Riverside would provide a direct connection between Barking Riverside and Barking town centre, and could be delivered for a lower capital cost than a DLR extension. As a result, the assessment determined that the Barking Riverside transport objectives would be best met by extending the Gospel Oak to Barking line, to Barking Riverside.

1.4. The outcome of the assessment process, and the findings presented in this report are consistent with the conclusions of the London Riverside Opportunity Area Planning Framework (OAPF) (draft version February 2015).

2. Background

2.1. Barking Riverside is the largest brownfield site within the London Riverside Opportunity Area with planning permission for up to 10,800 new homes and other development including community facilities, a secondary school, primary schools, retail, leisure and commercial development.

2.2. Transforming this land from a former industrial site to a new garden suburb requires investment in a quality transport network connecting the area to the rest of London, in particular to Barking town centre, and other employment districts such as the City and Canary Wharf. This will allow current and future residents to access employment, services and leisure opportunities.

2.3. The highway network serving the site, including the A13, is recognised as having limited capacity for growth and the site is not currently served by a rail service. Therefore, to unlock the full development potential of the site, a significant level of investment in the areas transport network is required. This requirement has led to the development of a package of transport works, which includes: improvements to the road and bus network, the creation of local cycling and pedestrian networks, alongside the development of a high capacity transport link.

2.4. The initial proposal to improve transport links to Barking Riverside, was to extend the DLR from Gallions Reach to Dagenham Dock. This proposal was developed prior to the establishment of the London Overground in November 2007. The DLR proposal together with East London Transit[1] services was prepared alongside a plan to make improvements to the A13/Renwick Road junction.

2.5. In 2007 the proposals to extend the DLR to Dagenham Dock assisted Barking Riverside Ltd to obtain outline planning consent for the development from the London Borough of Barking and Dagenham (LBBD). Planning consent was granted with a series of conditions and obligations attached within a section 106 agreement. The obligations permit a maximum of 1,500 homes to be occupied before the granting of a Transport and Works Act Order to enable the construction of the DLR extension. The obligations also state that no more than 4,000 homes can be occupied before the extension is operational.

2.6. In November 2007, TfL took over the franchise of the North London Railway and commenced the operation of London Overground services, including a 4 trains per hour service from Gospel Oak – Barking.

2.7. In 2008, an application for the Transport and Works Act Order required to construct the DLR extension was submitted. However, prior to reaching a public enquiry, the emerging cost of the scheme resulted in the application being withdrawn. This was because it was not possible to provide sufficient evidence

[1] East London Transit is a part-segregated bus rapid transit scheme introduced in 2010 and expanded in stages to serve the Thames View estate and Barking Riverside site.

to demonstrate the likelihood of the £750 million cost of the scheme being funded.

2.8. In 2010, as construction of Phase 1 of the Barking Riverside site commenced, TfL began to investigate alternative opportunities to provide the transport infrastructure required to unlock the full development potential of the Barking Riverside site.

2.9. Different transport options were presented to key stakeholders in 2012. This followed the publication of the London Riverside Strategic Transport Study, which allowed an informed assessment of the alternative transport options to be made against the specific transport objectives for the site. These considerations led to the selection of the extension to the London Overground Gospel Oak to Barking line, to Barking Riverside as the preferred transport option to serve Barking Riverside.

2.10. Figure 1 overleaf sets out the timeline for the development of transport options to serve the Barking Riverside development.

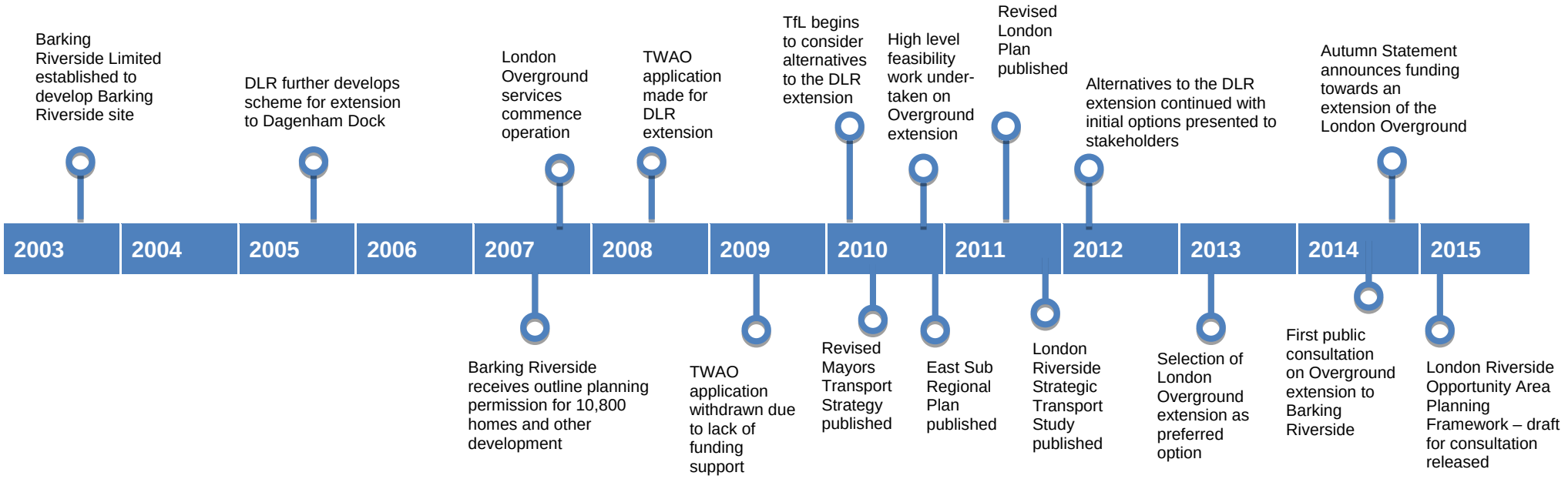


Figure 1 Transport modal options development timeline

3. Objectives for the Barking Riverside site and transport improvements

3.1. The objectives for the development of the Barking Riverside site are based on the targets set out in London's Housing Strategy and the London Plan. How these strategies are reflected in Barking Riverside is expressed in further detail by the London Riverside Opportunity Area Planning Framework[2].

3.2. The transport objectives for the site are based on the Mayor's Transport Strategy[3] (MTS) and London Riverside Strategic Transport Study[4].

3.3. The MTS and the London Riverside Strategic Transport Study were used to derive a set of objectives for improving transport infrastructure and services to the Barking Riverside site. The policy objectives for the transport works associated with the Barking Riverside site are to:

- Stimulate and enable housing development (up to 10,800 homes);
- Meet the planning requirement linking the construction of homes to the progress of the DLR extension to Dagenham Dock, or an agreed alternative;
- Increase land values;
- Provide regular and reliable links to Barking town centre and the city;
- Offer value for money.

3.4. As well as meeting these policy objectives, any project taken forward by Transport for London must have an approved business case that complies with the Department for Transport's guidance. The guidance recommends the five case model approach which shows whether proposed schemes are robust enough to demonstrate the following:

- Strategic case – the proposal is supported by a robust case for change that fits with wider public policy objectives.
- Economic case - the proposal demonstrates good value for money.
- Financial case – the proposal is financially affordable.
- Commercial case – the proposal is commercially viable.
- Management case – the proposal is engineering-wise feasible and achievable within the other controlling programme parameters.

[2] London Riverside Opportunity Area Planning Framework (draft for consultation 2015): https://www.london.gov.uk/priorities/planning/consultations/london-riverside-opportunity-area-planning-framework-0
[3] Mayor's Transport Strategy 2010: https://www.london.gov.uk/priorities/transport/vision-strategy
[4] London Riverside Strategic Transport Study 2011: http://www.london.gov.uk/sites/default/files/LROAPF_Transport_Study_0.pdf

4. Assessment process of options

4.1. A long list of proposals to improve access to the Barking Riverside site were identified and filtered through an assessment process, comprising of separate feasibility and strategic assessments.

4.2. The feasibility of the options was assessed using the following criteria:

i. Acceptability of risks with delivering the scheme,
ii. Complexity of operating the scheme,
iii. Value for money,
iv. How affordable and financially sustainable the scheme is, and
v. How long the scheme will take to deliver.

4.3. The strategic assessment process assessed the options against the MTS goals (which relate to all of Greater London), and the London Riverside Strategic Transport Study objectives, which are focussed on specific issues concerning the London Riverside Opportunity Area.

4.4. The policy goals of the MTS and the London Riverside Opportunity Area objectives are listed below in Table 1.

Table 1 Policy objectives used in strategic assessment process

Strategic objectives	
Mayor's Transport Strategy	**London Riverside OA Strategic Transport Study**
Support economic development and population growth	Improving local connectivity
Enhance the quality of life for all Londoners	Improving connectivity to radial rail routes
Improve the safety and security of all Londoners	Increasing capacity of radial routes
Improve transport opportunities for all Londoners	Improvements to the highway network to maintain an acceptable level of performance
Tackling deprivation and supporting growth	Support effective freight movement across all modes
Reduce transport's contribution to climate change and improve its resilience	Minimise effect of externalities caused by movement of goods and services (congestion, air quality and noise)

4.5. The final stage of the assessment process compared the business cases developed for each option. This assessment was informed by:

- Outline engineering assessments of each option;
- High level cost estimates;
- Likely forecast demand generated by the introduction of new services; and
- Journey time benefits resulting from the operation of the new services.

4.6. Options with a positive business case were reviewed against the Barking Riverside objectives, to inform the final recommendations.

5. Long list of options

5.1. The transport service options identified to unlock development at Barking Riverside are detailed below. The indicative routes of these transport options are also illustrated in Figure 2.

Full DLR extension to Dagenham Dock

5.1. This option, to extend the DLR from Gallions Reach to Dagenham Dock, was developed to a high level of detail in advance of the Transport and Works Act Order submission in 2008. However, insufficient funding was available to ensure the delivery of the scheme, which was estimated to cost £750 million in 2008.

DLR extension to Barking Riverside (DLR short)

5.2. This was a variation of the previously proposed DLR extension; however this alignment still required many of the full extensions high cost items, e.g. the construction of a tunnel or lifting bridge to cross the River Roding. The short extension would terminate at Barking Riverside and omit the intermediate stations proposed as part of the full DLR extension to Dagenham Dock.

DLR extension to Barking Riverside via northern alignment

5.3. This alignment would have avoided the need for either a tunnel or lifting bridge to cross the River Roding by using a route north of the safeguarded wharves. The route would have provided a connection between Gallions Reach and Barking Riverside only.

District or Hammersmith and City line extension (Grays)

5.4. This option would have extended the District and Hammersmith & City lines from Barking to Grays, via Dagenham Dock. However, technical differences between the rolling stock and London Underground (LU) and National Rail safety standards make it difficult for National Rail and LU trains to safely share sections of infrastructure without extensive changes being made to both the trains and tracks.

New Renwick Road station on the Tilbury line

5.5. This option would have required c2c passenger services to stop at Renwick Road and a shuttle bus to operate to the Barking Riverside development.

Multi-modal spine road and high frequency bus service

5.6. This option would have comprised of a lifting bridge over the River Roding to maintain shipping access to the safeguarded wharves. Feasibility issues meant this option was amended to a bus and cycle only link to the Royal Docks. The change was made to reduce the environmental impact of potentially drawing traffic from the congested A13 and to reduce the effect on the Thames foreshore.

Enhanced bus service for Barking Riverside site

5.7. This option would have enhanced the existing East London Transit bus services to the Barking Riverside site.

An extension of the London Overground Gospel Oak to Barking line

5.8. This option would use the existing Tilbury line between Barking station and the Renwick Road bridge, before branching off to Barking Riverside on a section of

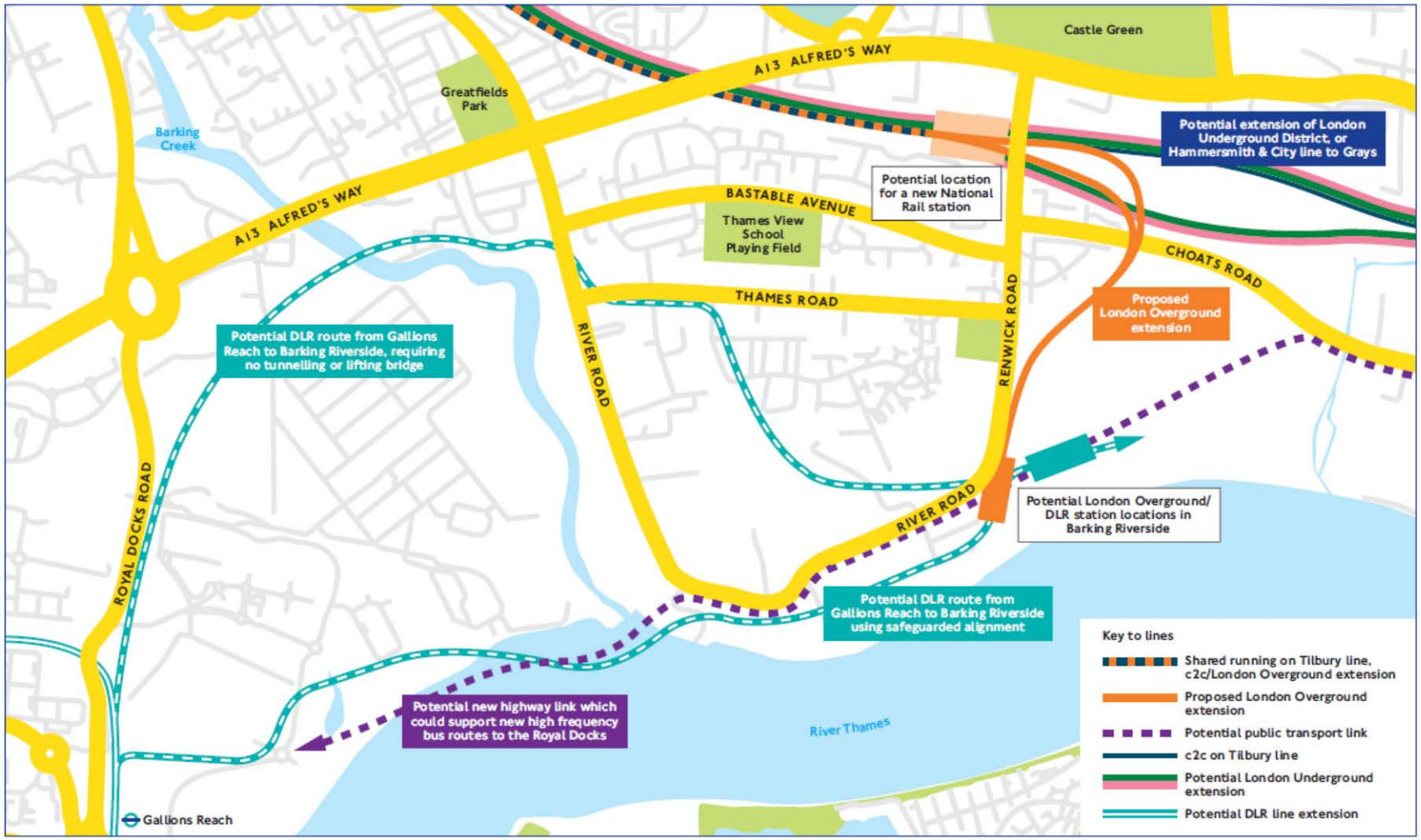
new track. Services operating on the extension would serve a terminus station located in the heart of the Barking Riverside site[5].

Do Nothing

5.9. An option to do nothing was not considered to be viable as it did not fulfil any of the policy options. This scenario was used only as a comparator when assessing the other options. Additionally, a decision to do nothing would prevent the realisation of the development potential at Barking Riverside because not discharging the planning permission obligations (set out in the Section 106 Agreement) would limit the development of the site to 1,500 units.

[5] For further detail on the development of the proposed London Overground extension, please refer to the Barking Riverside Extension- Route Option Assessment Report (May 2015).

Figure 2: Modal options considered for Barking Riverside site



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6. Option Assessment

6.1. The first stage of option assessment (as outlined in sections 3 & 4) ruled out the options to extend the DLR using the full alignment to Dagenham Dock, the short DLR extension along the same alignment, and the London Underground extension to Grays.

6.2. Both variations of the previously proposed DLR alignment were considered feasible in terms of engineering and operations, and would have supported the development of 10,800 homes on the Barking Riverside site. However neither option provided certainty of delivery, due to high costs and a lack of funding.

6.3. The feasibility assessment of the extension of the London Underground to Grays outlined significant technical and operational issues with the option. The engineering complexity associated with this option made it technically unfeasible, as well as expensive, to deliver and the option was not progressed beyond the feasibility assessment.

6.4. The option to enhance bus services was also ruled out as a single solution because in isolation the option would not be capable of providing the transport capacity required to support 10,800 homes. Nevertheless, the benefits of bus services in serving the area are recognised, and this option has been proposed for inclusion in a wider package of transport improvements, that will be implemented by BRL as progressive phases of the Barking Riverside site are developed.

7. Assessment of shortlisted options

7.1. Following the completion of the feasibility and strategic assessment, four options were shortlisted for business case analysis and comprised of:

i. High frequency bus corridor to Royal Docks,
ii. Station at Renwick Road,
iii. DLR extension to Barking Riverside via northern alignment, and
iv. Overground extension from Barking to Barking Riverside.

7.2. Option i (the high frequency bus corridor) produced a positive business case. However, in isolation, Option i could not support the full development of the Barking Riverside site to 10,800 homes. In isolation, a high frequency bus corridor would not provide sufficient capacity to serve the full development, and services would be prone to over crowding during peak periods. Option i was not progressed.

7.3. Option ii (a station at Renwick Road) produced a positive business case. However, a station at Renwick Road would not serve the heart of the new Barking Riverside site, requiring a shuttle bus service to operate between the new station and proposed District Centre. Option ii would not provide any additional train capacity, and therefore it is likely that existing c2c passenger services would experience over crowding during peak periods. Additionally, the capacity provided by the provision of a shuttle bus service would not be sufficient to serve the full development. Option ii was not progressed.

7.4. The two best performing options were the extension of the DLR via the northern alignment (Option iii) and the Overground extension from Barking to Barking Riverside (Option iv). As such both were assessed against the Barking Riverside objectives as listed in paragraph 3.3. During the assessment process it was demonstrated that both options were able to support the permitted level of housing and other development on the site, which would result in uplift of land values within a 10 minute walk of the new station. The operating cost difference between the Overground and DLR extensions did not significantly differ and the two options both performed well when assessed against the Mayor's Transport Strategy and London Riverside Strategic Transport Study.

7.5. Both options would reduce journey times to Canary Wharf, City and West End via an interchange at Custom House on the DLR option, and interchanges at Barking and West Ham for the London Overground option.

7.6. However, the DLR option would not satisfy the Barking Riverside policy objective of providing a regular and reliable link between Barking Riverside and Barking town centre. Whereas, the Overground extension would provide a regular and reliable service between the new community at Barking Riverside and the existing Barking town centre. Satisfying this objective is deemed crucial to enable the social and economic connections needed to integrate the development with the rest of the borough.

7.7. In terms of capital cost, the DLR option was approximately 60 per cent more expensive when compared with the Overground extension.

7.8. Therefore the DLR extension via the northern alignment was not progressed, because it performed less favourably than the Overground extension on two Barking Riverside objectives: value for money and links to Barking town centre.

8. Preferred option and conclusions

8.1. Both the short DLR extension and the London Overground extension to Barking Riverside could contribute to the full development of the Barking Riverside site. Although the DLR extension would link the Barking Riverside site with the Royal Docks, it would not provide a link between Barking Riverside and Barking town centre.

8.2. The London Overground extension would provide a direct link between the new Barking Riverside community and Barking town centre. It would also provide links to London Underground services to central London and the national rail network via an interchange at Barking station. The extension could also be delivered at a lower cost than the DLR extension. Therefore a London Overground extension from Barking to Barking Riverside was identified as the preferred transport option to serve the Barking Riverside development.

8.3. Following the identification of the London Overground as the preferred mode of transport to serve Baking Riverside, a number of Overground route alignment options were considered, and two shortlisted options are presented in the spring 2015 public consultation.

8.4. A package of funding to deliver an extension of the London Overground Gospel Oak – Barking line to Barking Riverside has been secured and subject to the application for a Transport and Works Act Order being successful, the extension could be delivered by 2020.