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say



Bakerloo line extension

Background to Consultation Summary Report

October 2019

MAYOR OF LONDON



**TRANSPORT
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EVERY JOURNEY MATTERS

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I Aims of the Background to Consultation Summary Report

1.1.1 The aims of this report are to set out TfL's proposals for the Bakerloo line extension and provide further information on those aspects of the proposals we are consulting on. We also provide a summary explanation of the conclusions we have reached in relation to those aspects we have previously consulted on. We have produced factsheets and supporting information on individual topics which are available on our website.

1.1.1. *To find out more*

1.1.2. Visit tfl.gov.uk/bakerloo-extension where you can view and download a range of factsheets, maps, and other information about the scheme.

1.1.3. Alternatively, come along to one of our exhibitions where you will have the opportunity to view our proposals and speak to members of the Bakerloo Line Extension team. More details about the exhibitions can be found on our website at tfl.gov.uk/bakerloo-extension.

1.1.4. Please contact us to request a copy of our material in hard copy, large print, audio or another language.

1.1.5. *Contact us*

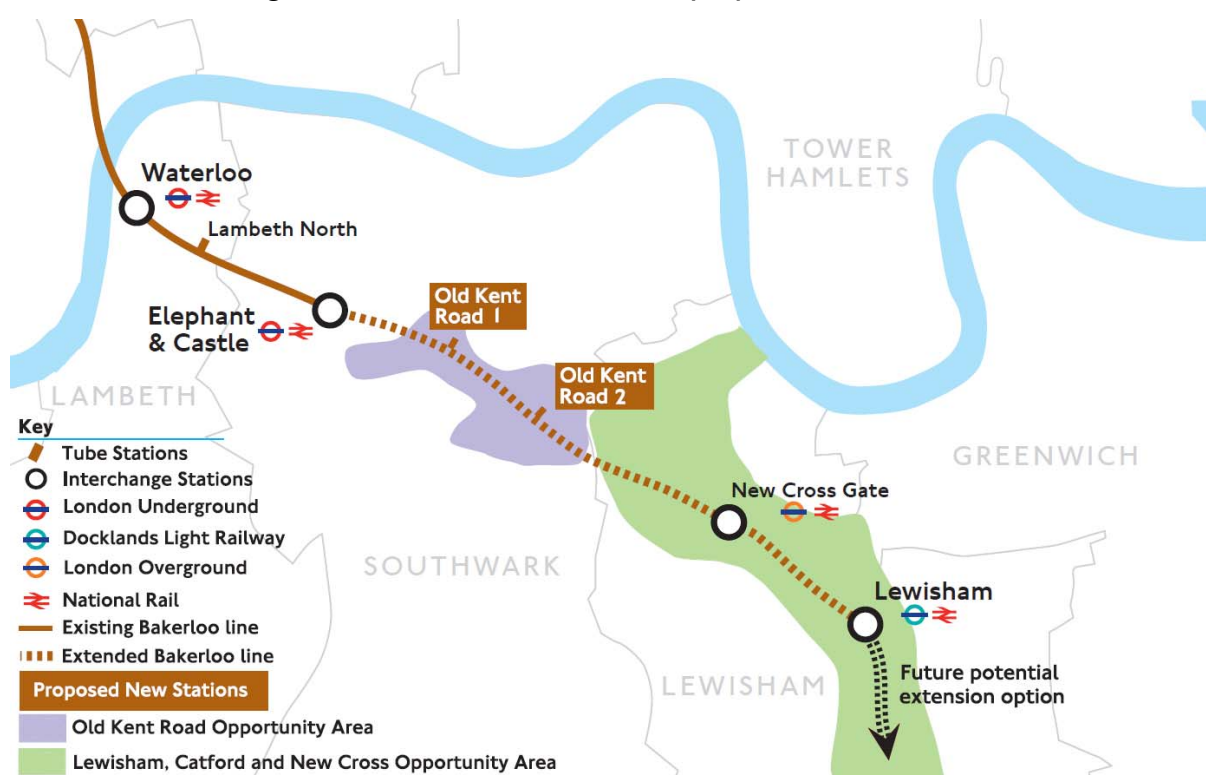
- Website: tfl.gov.uk/bakerloo-extension
- Email: ble@tfl.gov.uk
- Telephone: 0343 222 1155 (Note service and network details apply. Visit tfl.gov.uk/terms for details)
- Post: FREEPOST TFL CONSULTATIONS (BLE)

1.1.6. You can use these contact details to request paper copies of consultation materials in Braille, large text or another language, and a response form to provide feedback.

2. Introduction

2.1.1. A Bakerloo line extension (BLE) to Lewisham via Old Kent Road and New Cross Gate would provide new transport capacity to south east London and improve transport connections. This would help to enable development in south east London, support London's growth and improve journeys for existing communities. We are also considering a potential extension beyond Lewisham to Hayes and Beckenham Junction. The proposal to Lewisham and potential extension beyond Lewisham is a core scheme in the Mayor's Transport Strategy. A map of the current proposal is shown in Figure 1.

Figure 1 - Bakerloo line extension proposal to Lewisham



Previous consultations

2.1.2. In autumn 2014 we carried out a public consultation asking for views about an extension of the Bakerloo line, including options for the extension route. Following an assessment of each of the consulted route options, alongside options suggested by consultees, we concluded that an extension to Lewisham via Old Kent Road and New

Cross Gate was the best option for an initial extension. The 2014 consultation and our response to the issues raised can be viewed on our website¹.

2.1.3. In autumn 2017 we undertook further public consultation and asked for views about potential station and shaft locations as well as the possibilities for constructing an improved Bakerloo line and interchange at Elephant and Castle. The 2017 consultation and our response to the issues raised can be viewed on our website².

2.1.4. In September 2018, we published a Response to the Issues Raised report³ for our 2017 consultation, which considered location proposals for the new stations and ventilation and access shafts. Since then we have continued to develop our proposals for the extension to Lewisham.

What are we consulting on now?

2.1.5. We are now seeking views on our updated proposals for the extension to Lewisham, building on the outcomes of previous consultations. In particular, we are seeking views on the following aspects of the proposed extension:

- a new combined station entrance at Elephant & Castle station;
- the names of the two new Old Kent Road stations;
- the siting of a main tunnelling worksite at New Cross Gate;
- new infrastructure at the end of the line at Wearside Road council fleet depot; and
- the route of the new Bakerloo line tunnels.

2.1.6. We are also seeking views on the possibility of extending the Bakerloo line beyond Lewisham to Hayes and Beckenham Junction. In 2014 we consulted on options to extend to the Bakerloo line beyond Lewisham to Hayes, Beckenham Junction and Bromley town centre. Our focus has been on developing the extension to Lewisham but we have continued to consider destinations beyond Lewisham to ascertain whether a further extension could deliver the planned policy outcomes in the Mayor's Transport Strategy more effectively.

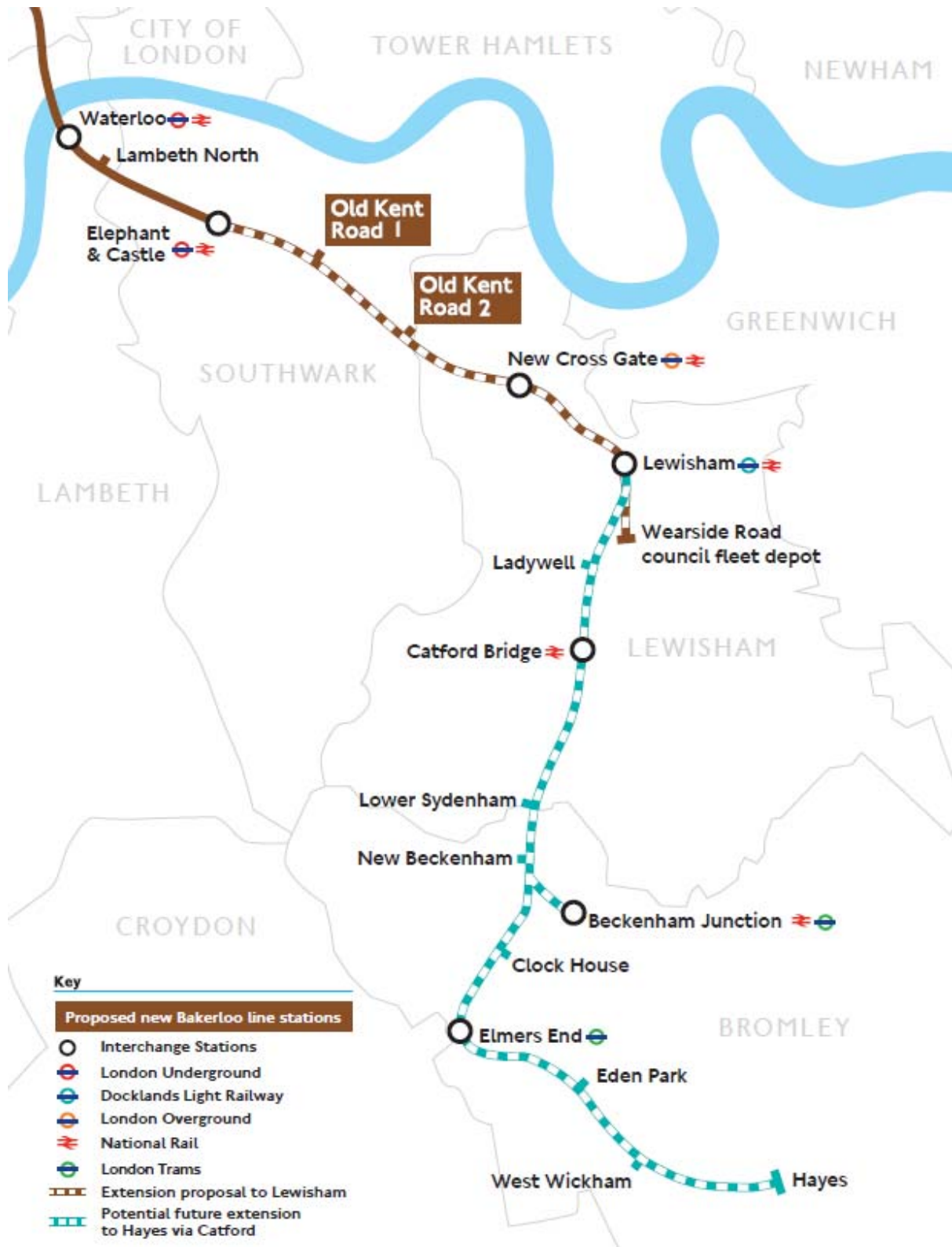
¹ The 2014 consultation can be viewed at <https://consultations.tfl.gov.uk/tube/bakerloo-extension-2014/>

² The 2017 consultation can be viewed at <https://consultations.tfl.gov.uk/tube/bakerloo-extension-2017/>

³ The 2018 Response to Issues Raised report can be viewed at https://consultations.tfl.gov.uk/tube/bakerloo-extension/user_uploads/ble-updated-response-to-issues-raised.pdf

- 2.1.7. We have determined that an extension to Hayes and Beckenham Junction is currently the preferred option for an extension of the line beyond Lewisham and we are now seeking feedback through this consultation on the principle of extending to those destinations. A summary of this proposal, its potential benefits and impacts, and alternatives we have considered is provide in the Further Extension to Hayes and Beckenham Junction Summary Report available on our website at tfl.gov.uk/Bakerloo-extension
- 2.1.8. The option of extending to Hayes would not necessitate the need to construct a new line; instead it would utilise the existing National Rail line to and convert it to a London Underground route – see Figure 2. An extension to Hayes could be delivered as an additional part of the initial extension from Elephant and Castle to Lewisham or as a future phase once an extension to Lewisham has been delivered.
- 2.1.9. Extending beyond Lewisham could impact: the train service frequency on the proposed extension to Lewisham, the length of the construction programme and the land required to build and operate the Bakerloo line extension. We are asking you for your views on our proposal to extend the Bakerloo line beyond Lewisham to Hayes and we will consider whether to further develop the proposals given the consultation feedback we receive.

Figure 2 - Option to extend beyond Lewisham to Hayes and Beckenham Junction



3. Benefits of the proposed Bakerloo line extension to Lewisham via Old Kent Road and New Cross Gate

- 3.1.1. Extending the Bakerloo line to Lewisham via Old Kent Road and New Cross Gate would deliver a range of benefits to London by improving passenger journeys and supporting the capital's growth. This section provides further details of the case for extending the Bakerloo line, and why we are progressing proposals for the route to Lewisham.
- 3.1.2. The Bakerloo line forms part of the London Underground network. The line runs from Harrow and Wealdstone in the north-west to Elephant & Castle at the southern edge of central London. It includes 12 central London stations including Paddington, Baker Street, Oxford Circus, Piccadilly Circus and Waterloo. It is the only major Underground line that has a route that terminates close to central London in fare zone 1.
- 3.1.3. There were c.114 million passenger journeys on the Bakerloo line in 2017, which is less than half the number carried on other major lines such as the Central, Northern, Jubilee and Victoria lines. Passenger numbers have remained steady at around this level despite other line's experiencing increases in passengers.
- 3.1.4. The Bakerloo line's relatively low level of demand is due to the poor connectivity provided by the reach of the existing line at its southern end, a lower frequency service compared to the parallel Tube routes across central London and the old assets such as the trains (the oldest on the Underground network) which have lower capability compared to more modern and upgraded lines.
- 3.1.5. Extending the line and replacing the trains with a new, modern fleet, as is planned with the wider upgrade of the existing line could provide a significant opportunity to improve journeys for current Bakerloo line passengers. Our plans would provide faster and more frequent services, which would also increase the attractiveness of the line to new customers. Extending the line to south east London would allow the line to reach new customers by providing new connectivity with the existing national rail services and bus network in south east London.
- 3.1.6. An extension to Lewisham would utilise the additional capacity created by the line upgrade, helping to support London's economic and population growth by ensuring impacts on the transport network from new development can be accommodated in a sustainable way. Further extending the line beyond Lewisham to Hayes would deliver additional benefits and these are covered in further detail in section 6.9.

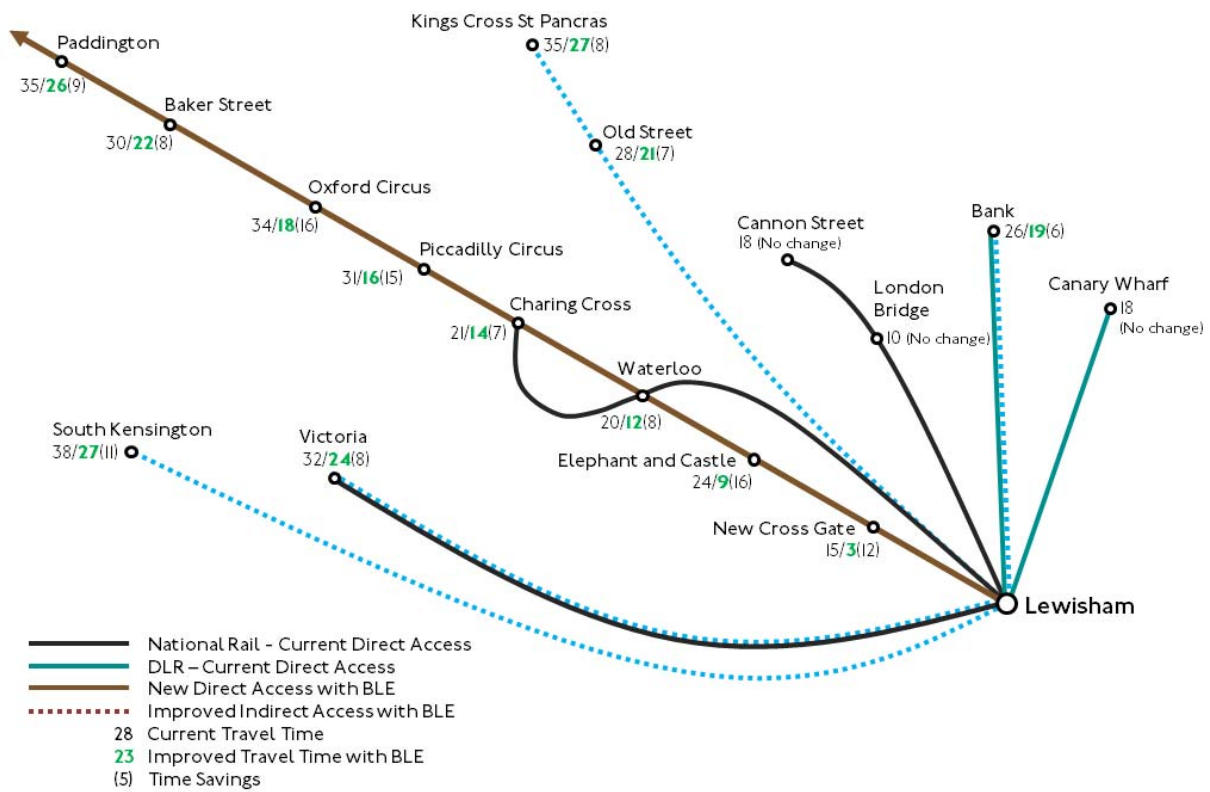
- 3.1.7. Extending the Bakerloo line to Lewisham would support London's growth by:
- Offering a new direct link into and across central London
 - Providing capacity for at least 60,000 extra journeys in both the morning and evening peak periods⁴
 - Relieving congestion on roads along the extension route, reducing CO2 emissions and air pollution
 - Reducing journey times from Lewisham to central London
 - Providing an Underground train every two to three minutes between Lewisham and central London
 - Supporting new homes and jobs in south east London
- 3.1.8. The extension would increase capacity by serving south east London with a high frequency and high capacity Underground service. This would also help to relieve pressure on the National Rail network by providing an alternative route for passengers.
- 3.1.9. Some areas of South east London experience economic and social deprivation. The extension would deliver improved access to employment, community services and leisure opportunities which would benefit local communities by driving improvements to the places people live and work.
- 3.1.10. The extension would make over 1.2 million jobs across London c10 minutes closer to Lewisham in travel time by 2031 – around the time an extension could be open. This would provide a major increase in the number of jobs that could be more readily accessed by residents and benefit businesses that would be able to access a significantly larger labour market when recruiting.
- 3.1.11. On the Underground network, there is currently high demand for the Jubilee line between the Docklands and West End, with large volumes of passengers changing with the East London Line at Canada Water. The Bakerloo line extension would provide a new route from the East London Line, enabling more direct journeys to the West End and helping to reduce crowding on the Overground and Jubilee lines.
- 3.1.12. By providing capacity for approximately 60,000 new journeys in each direction during peak times, the Bakerloo line extension would relieve congestion along the A2 road

⁴ This figure is based on 27 trains per hour to Lewisham and assumptions about the capacity of the trains that would operate on the Bakerloo line if it were extended and may change as we develop our proposals

corridor and the local bus network. Therefore, the Underground extension would help to contribute toward reducing air pollution and CO2 emissions.

3.1.13. The journey time between central London and south east London locations could reduce – with some destinations by up to 9 minutes such as Paddington and other destinations potentially by a larger amount as shown in Figure 3.

Figure 3 – Forecast journey time changes that an extension to Lewisham could provide⁵



3.1.14. The Bakerloo line extension would provide these benefits along the route through Opportunity Areas in Old Kent Road and Lewisham, Catford and New Cross. Opportunity areas are areas of London, defined in the Mayor’s Spatial Development Strategy, known as the London Plan, that have the capability to support significant

⁵ Journey times are based on 2018 rail timetables, TfL journey planner and TfL’s current forecast journey times on the proposed extension. Some routes shown are the result of the combined time of using different services and changing along the route to reach destination. All forecast journey times may be subject to change before the proposed extension is delivered.

new development to sustain London's population and employment growth. Opportunity Areas often require new transport capacity, accessibility and connectivity to enable those areas to grow.

- 3.1.15. Proposals for the Old Kent Road area have been developed by Southwark Council to deliver at least 20,000 new homes and 10,000 new jobs and for the regeneration and improvement of existing communities⁶. Much of this new development, around 10,500 homes, would be dependent on the delivery of the Bakerloo line extension. The Old Kent Road area currently has no direct rail access – the nearest stations are South Bermondsey and Queens Road Peckham. This has led to a reliance on the Bus network.
- 3.1.16. The bus network along Old Kent Road operates close to capacity with over 60 buses per hour. The bus network cannot expand to provide the same level of capacity as the Bakerloo line extension would provide due to the limited capacity of the highway. If the extension is delivered we would integrate it with our proposals for a Healthy Street⁷ on the Old Kent Road and would also consider changing local routes for pedestrians and cyclists. The extension would also help to increase the share of public transport trips and reduce the reliance on private vehicle trips.
- 3.1.17. Our work with the London Borough of Lewisham suggests extension could support an additional 5,000 new homes in the New Cross Gate to Lewisham areas by serving the New Cross-Lewisham-Catford Opportunity Area. There is the possibility that thousands more new homes and wider redevelopment and regeneration opportunities that could be realised in the London Borough of Lewisham if the Bakerloo line extends further beyond Lewisham to Hayes.
- 3.1.18. London's growing population would, more widely, benefit from new housing that would be supported by the extension. New housing sites would help to further support the productivity of London's Central Activities Zone (CAZ - the effective commercial heart of the capital which includes the West End and City). Delivery of the extension would mean the Old Kent Road corridor, which has the greatest opportunity to deliver new homes and jobs, would become much easier and quicker to travel to from central London, with significantly better public transport connections.

⁶Southwark Council proposals for Old Kent Road are available at <https://oldkentroad.org.uk/>

⁷ The Mayor's Transport Strategy provides more details about Healthy Streets and is available at <https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf>

- 3.1.19. South east London could have a large role in helping to house Londoners and provide vital housing for a growing population. The extension would provide an opportunity to support new homes on brownfield sites close to central London.
- 3.1.20. The extension would be a key part of an integrated package of transport improvements for London. While Crossrail, schemes such as Crossrail 2, HS2 and planned Underground line upgrades will not directly serve south east London, they will enhance the connectivity benefits that would arise from a Bakerloo line extension – for example the Bakerloo line would have an interchange with Crossrail at Paddington and has an interchange with every other London Underground line.

4. Delivering the proposed Bakerloo line extension – funding and timescales

- 4.1.1. We will need to secure funding and the necessary consents to build and operate the new line which we intend to secure by means of a Transport and Works Act Order. Subject to funding, we could apply for a Transport and Works Act Order by 2023. To reach this stage, we will need to develop our proposals further and this consultation will provide important feedback that we can use to progress the proposals.
- 4.1.2. Our proposal to extend the Bakerloo line would increase the benefits of the planned upgrade of the existing Bakerloo line. The upgrade could increase capacity, improve safety and reliability, improve customer journeys and reduce the long-term costs of the line. An extension to Lewisham would benefit from these new trains. The upgrade, like the proposed extension, is not currently funded.
- 4.1.3. Funding for the extension of the Bakerloo line to Lewisham, based on the current designs, is estimated at between £4.7bn to £7.9bn (in 2017 prices). This range of costs reflects the contingency and uncertainty that a major capital scheme such as the extension requires at this stage of its development. The estimate range will be refined as we further develop our proposals, including how we would construct and operate the extension.
- 4.1.4. The increases in the cost estimate for the extension proposal to Lewisham, since the 2017 consultation, are the result of the further design development and new elements our proposals now contain (e.g. the new section of tunnels between Elephant & Castle and Lambeth North is now proposed). We have also incorporated inflation and updated estimating inputs since 2015 when costs were last calculated.
- 4.1.5. If we were to progress an extension beyond Lewisham to Hayes the cost of the extension would increase further. We will be able to establish what the cost of an extension to Hayes could be if we undertake further work to develop that proposal following this consultation.

5. Background to our previously consulted proposals

5.1.1. This consultation builds upon two previous consultations undertaken in 2014 and 2017, following which we have been able to define certain key aspects of the proposed extension. These include plans to provide new infrastructure at locations along the route as follows:

- Old Kent Road 1 station
- Old Kent Road 2 station
- New Cross Gate station
- Lewisham station
- Shaft and head house off Lewisham Way between New Cross Gate and Lewisham

5.1.2. These aspects of the extension are all areas we previously consulted in 2017. Details of each of these scheme components, and the alternatives we considered, were presented as part of the 2017 consultation. Further information can be found on our website, along with our response to the issues raised during that consultation⁸.

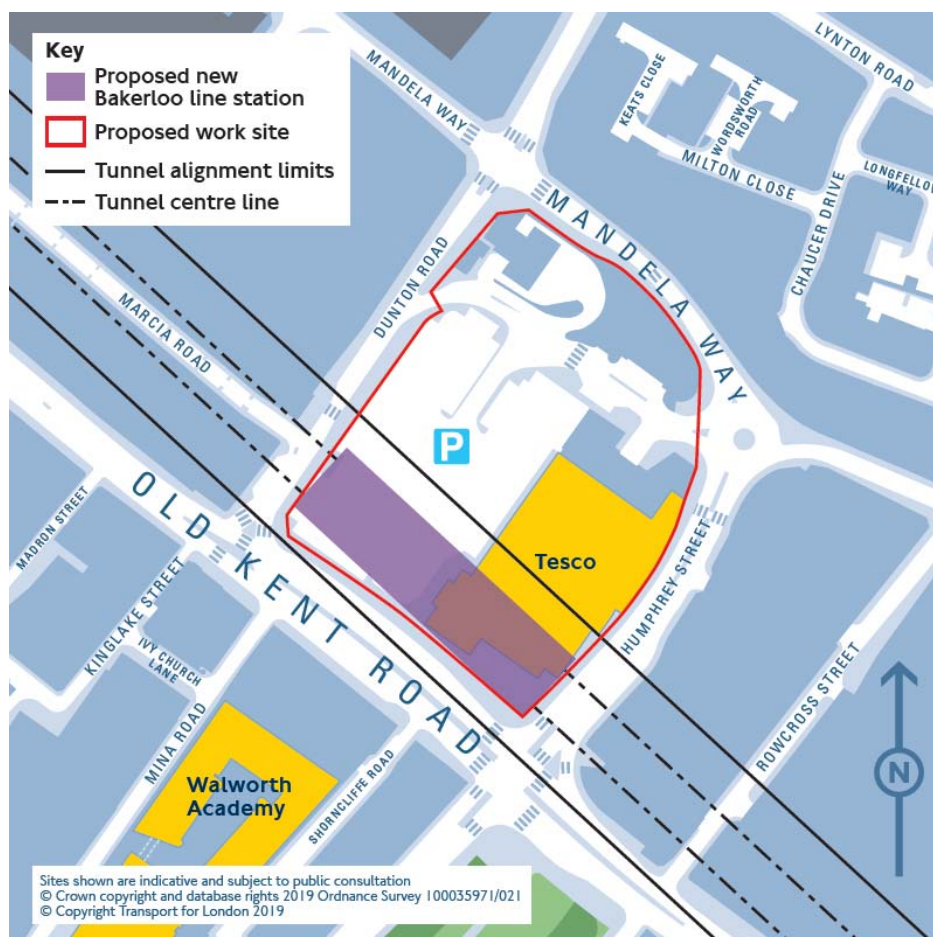
5.1.3. Although not the focus of this 2019 consultation, we have provided an opportunity for respondents to provide comments on the proposed extension, including those aspects of the proposals described above. The remainder of this chapter, provides a summary description of each of the aspects described above.

⁸ The 2017 consultation and our Response to the Issues Raised can be viewed at <https://consultations.tfl.gov.uk/tube/bakerloo-extension-2017/>

5.2. Old Kent Road I Station Proposal

5.2.1. The proposed extension would include two new Underground stations along the Old Kent Road. The first station, currently named Old Kent Road I, is proposed to be located between Dunton Road and Humphrey Street – see Figure 4.

Figure 4 - Proposed Old Kent Road I station



5.2.2. The identified site for Old Kent Road I station would enable it to serve both existing and planned new communities as well as fulfil Southwark Council's and the Mayor's ambitions for a revitalised high street on Old Kent Road. The proposed station site also enables a direct route and quick journey times between the next station stops at Elephant & Castle and Old Kent Road 2.

5.2.3. The site is sufficiently large with road access on all sides and enables a direct and fast alignment to the adjacent stations of Elephant and Castle and Old Kent Road 2. The station would enable existing and planned new communities to more easily access the Tube network as the station would be fully accessible, providing an easy and simple interchange from other means of travel such as buses, cycling and walking.

5.2.4. The proposed location of Old Kent Road I station has been developed alongside the proposed location of Old Kent Road 2 station. We have selected station sites which

would maximise the extent to which each station serves the local areas around the Old Kent Road.

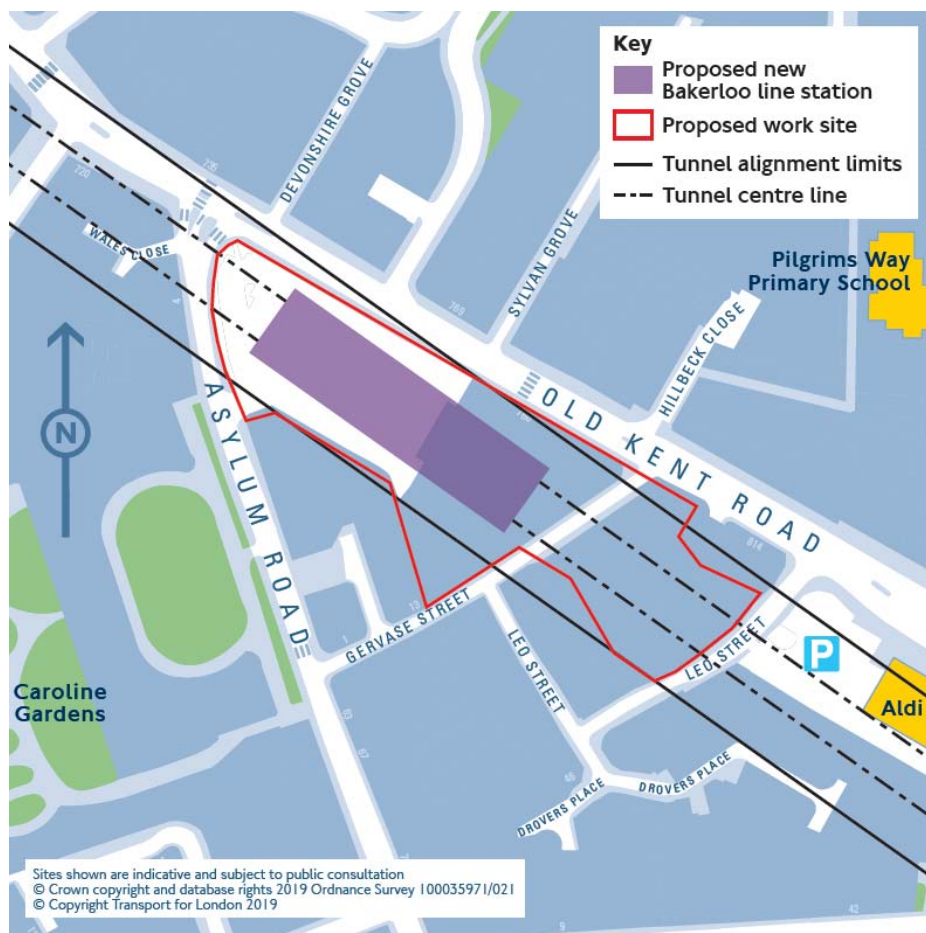
- 5.2.5. We have not yet decided on where the entrances and exits for the station would be positioned as this would be subject to the plans we are developing for the Healthy Streets⁹ changes to the Old Kent Road which forms part of the Transport for London Road Network. We are also working with Southwark Council and local developers to understand their proposals for the changes to land uses around the station, which would further inform the location of the station entrances and exits. Once developed, our proposals would be subject to further consultations.
- 5.2.6. We have developed the station design and determined that we can reduce the size of the station as compared to the proposal we consulted on in 2017. The design has evolved as we have developed the tunnel route alignment for the extension, to optimise its interface with the station. These changes mean we no longer propose to place station infrastructure in Humphrey Street which could reduce construction impacts on the highway.

⁹ The Mayor's Transport Strategy provides more details about Healthy Streets and is available at <https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf>

5.3. Old Kent Road 2 Station Proposal

5.3.1. We are proposing two new Underground stations along the Old Kent Road. The second station, currently named Old Kent Road 2, is proposed to be located between Asylum Road and Gervase Street – see Figure 5.

Figure 5 – Proposed Old Kent Road 2 station



5.3.2. We are proposing this site, part of which was formerly occupied by Toys R Us, as we consider that a station in this location would best serve both the existing community and new communities that would occupy the proposed developments opposite the station site and along the Old Kent Road towards Brimington Park and the Cantium retail park.

5.3.3. The station would enable existing and planned new communities to more easily access the Underground network as the station would be fully accessible and provide step-free access. The station would also provide an easy and simple interchange from other means of travel such as buses, cycling and walking. The location of the station enables a direct tunnel route alignment between the adjacent stations of Old Kent Road 1 and New Cross Gate. A direct tunnel route alignment between stations would

mean trains can run at high speeds, helping to reduce the time it would take for passengers to complete their journeys.

- 5.3.4. The proposed location of Old Kent Road 2 station has been developed alongside the proposed location of Old Kent Road 1 station. We have selected station sites which would maximise the extent to which each station serves the local areas around the Old Kent Road.
- 5.3.5. Part of the proposed site for Old Kent Road 2 has become vacant since it was first considered and consulted on in 2017. Although new development is planned for the site and allocated in draft local planning policy, there is no consented new use for the site. Assuming the site remains vacant until the Bakerloo line extension works are complete, using the site would minimise the impact of the works in terms of the land use change, impact on commerce, employment and on customers using those services in the local area.
- 5.3.6. We have not yet decided where the entrances and exits for the station would be positioned as this would be subject to the plans TfL is developing for the Healthy Streets¹⁰ changes to the Old Kent Road which forms part of the Transport for London Road Network. We are also working with Southwark Council and developers to understand their proposals for the changes to land uses around the station which would also inform the location of station entrances and exits.
- 5.3.7. As with Old Kent Road 1, we have further developed the proposed station design and consider that the size of the station can be reduced compared to the proposals we consulted on in 2017. The design has evolved as we have developed the tunnel route alignment and sought to optimise its interface with the station and platforms it would need to join with. The proposed changes mean we have reduced the size of the station and changed its orientation on the site. These developments to the station do not change the work site requirements for constructing the station that we consulted on in 2017.
- 5.3.8. Our proposals also continue to include the land at 812 Old Kent Road, which lies between Gervase Street and Leo Street. This is required to enable construction of the

¹⁰ The Mayor's Transport Strategy provides more details about Healthy Streets and is available at <https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf>

station. Without this site, the constraints of the available land the station is sited on would increase the risk, complexity and programme duration of the station works.

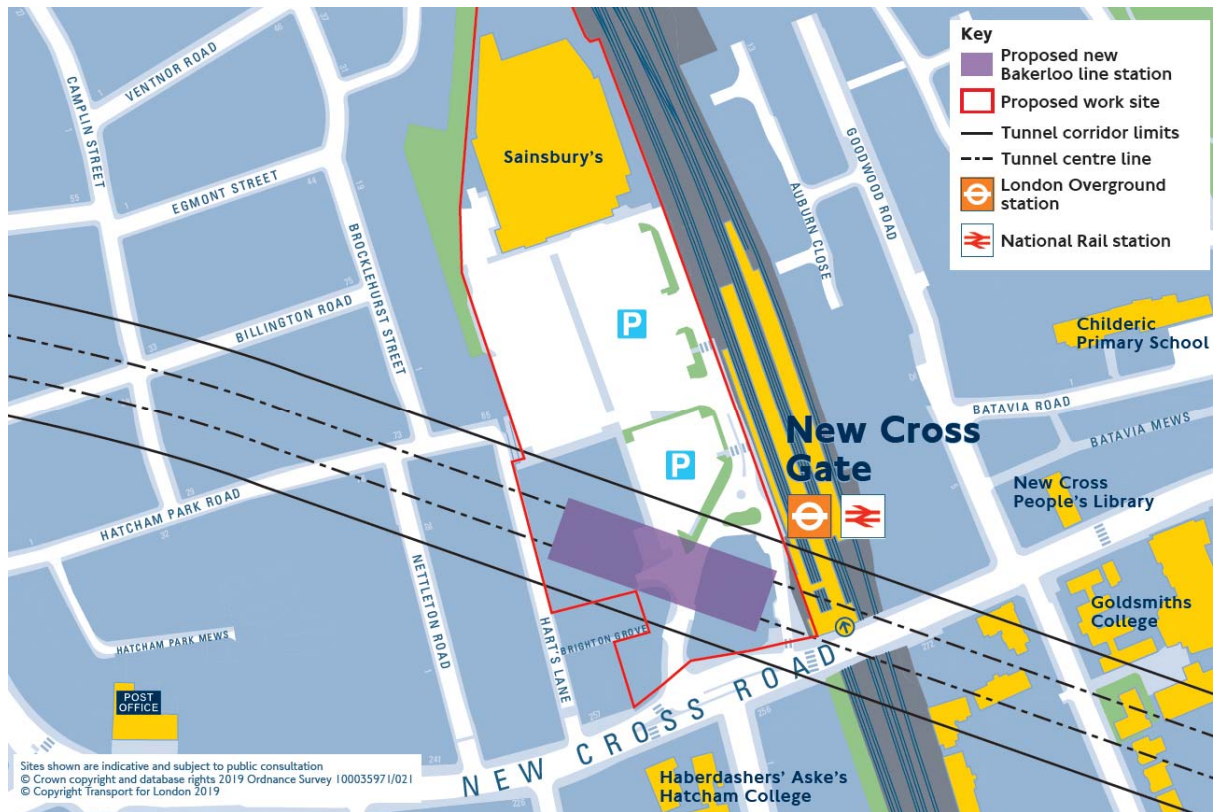
- 5.3.9. The station work site lies adjacent to a number of residential areas including the Burnhill Close Gypsy and Travellers site and the Harry Lambourn House retirement centre. The station works are likely to generate noise, air quality and visual impacts particularly during the station construction. We will set out how we plan to mitigate the impacts of the tunnel and station construction as we develop the scheme and the full impacts would be published in the Environmental Statement required for the Transport and Works Act Order we will submit.

5.4. New Cross Gate Station Proposal

- 5.4.1. The proposed extension route runs via New Cross Gate and we are proposing a new Underground station on the site of the existing retail park alongside the existing National Rail and Overground station. The new Underground station would provide a fast and easy interchange with the National Rail and London Overground station.
- 5.4.2. The retail park is currently occupied by Sainsbury's, their petrol filling station and their tenants, TK Maxx, Harveys and Dreams. The site has been selected for the New Cross Gate station because of its size, location and access from the A2. These factors would enable a station to be constructed at least impact, risk, complexity and cost.
- 5.4.3. We also considered the Borough of Lewisham's award winning New Cross Area Framework and Station Opportunity Study¹¹. The Borough study considered the impact of the station site options we considered from the perspective of the outcomes the Council seeks to achieve in the local area. Our consideration of those outcomes and the evidence in the Framework means we have concluded that our proposed site for New Cross Gate station has the best capability to deliver the outcomes the Framework seeks to achieve and is the only viable location.

¹¹ The London Borough of Lewisham's New Cross Area Framework and Station Opportunity Study is available from <https://consultation.lewisham.gov.uk/planning/new-cross-area-framework/>

Figure 6 – Proposed New Cross Gate station

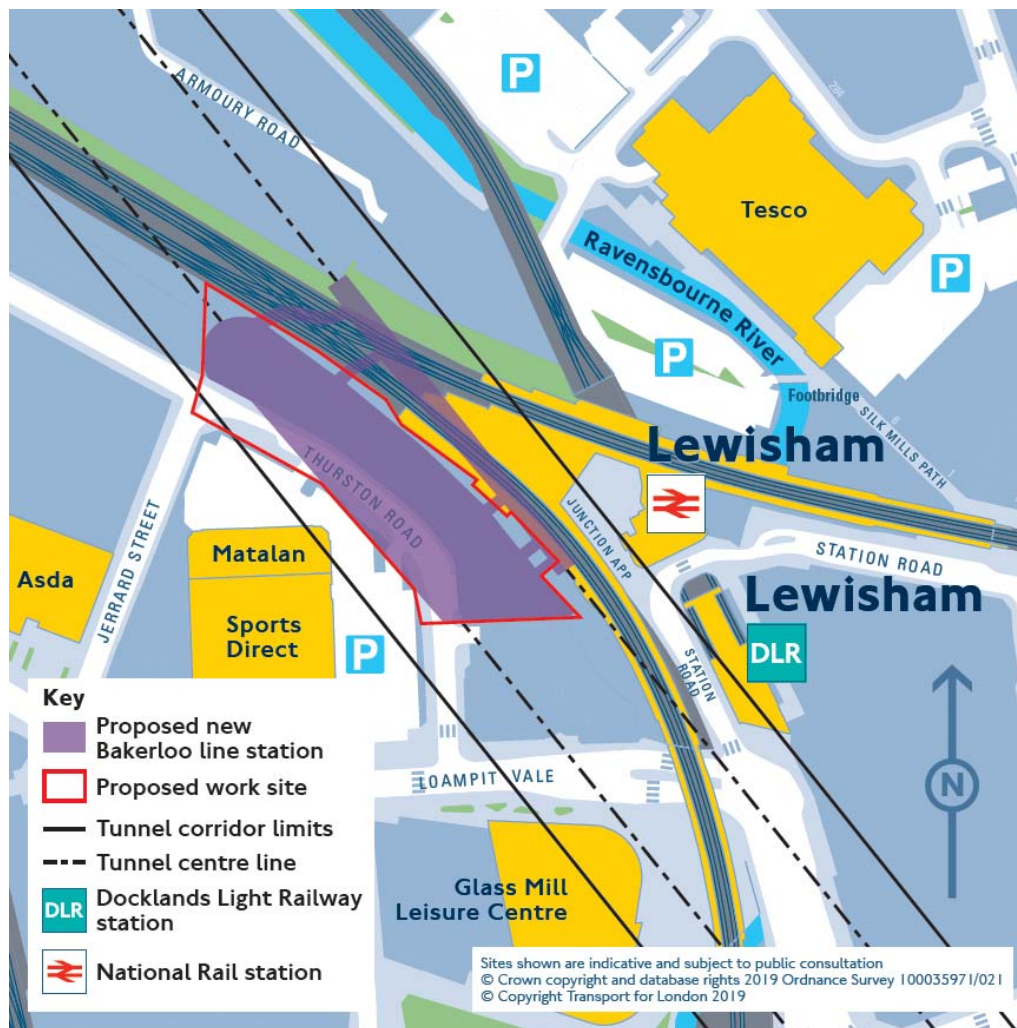


5.4.4. We have further developed the station design and determined that we can reposition the station as compared to the layout we consulted on in 2017. The design has been developed alongside the tunnel route alignment for the extension, to optimise its interface with the station. These changes also mean the station can lie closer to an east-west alignment across the site, reducing its proximity to identified utilities whilst still being well positioned to enable construction of an interchange that is easy and convenient for passengers to use and for TfL to operate.

5.5. Lewisham Station Proposal

5.5.1. The proposed extension would also include a new Bakerloo line station at Lewisham. This would be located on Thurston Road along the south western side of the existing National Rail station – see Figure 7. This station would provide interchange to National Rail and DLR services at the existing station and with buses and taxis. The new station would improve access to Lewisham town centre and would also support the development of Lewisham as a major south east London strategic interchange.

Figure 7 – Proposed Lewisham station



5.5.2. Lewisham would be the final station on the proposed new tunnelled section of route. However, tunnels running beyond Lewisham station would also be required. These 'overrun' tunnels would be necessary to avoid restrictions being placed on the speed of trains approaching the station and to allow empty trains to be stabled.

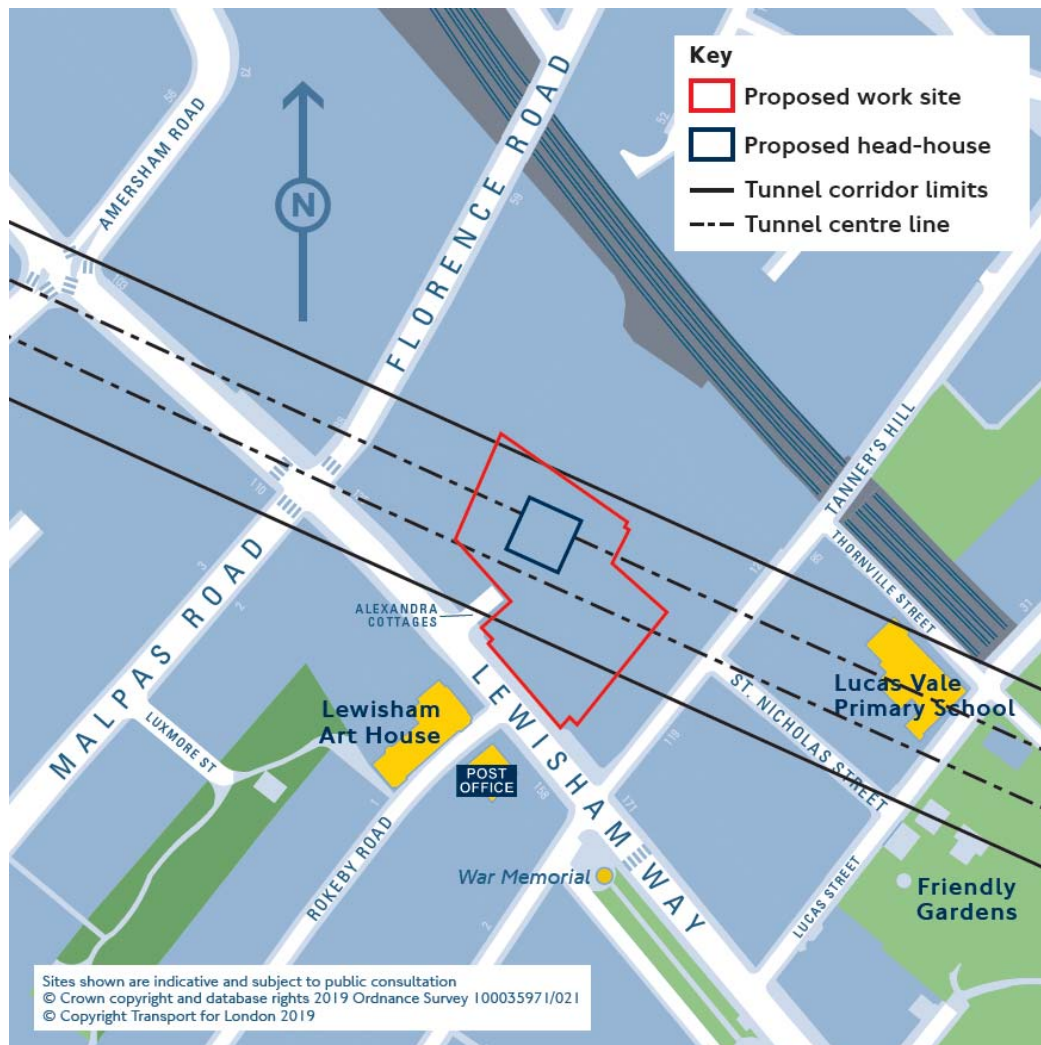
5.5.3. To construct the Underground station, we would need to relocate the current Bus Stand on Thurston Road. We would seek to identify a new site for the Bus Stand that minimise as far as practicable the impact on bus services for passengers and keep Bus operating costs as low as possible.

5.5.4. We have been working with Lewisham Council and Network Rail to understand the constraints and opportunities at the current National Rail and DLR station interchange. Any proposals developed to address the existing interchange will be considered as we develop our proposals for the Underground station so that we can ensure the whole interchange will continue to be safe and efficient to operate, enabling customers to make easy interchanges and the local area around the station able to easily access their rail services.

5.6. Proposed shaft between New Cross Gate and Lewisham

5.6.1. The extension proposals continue to include plans for a shaft and head house at a site off Lewisham Way at Alexandra Cottages. We initially consulted on this proposal in 2017 – see Figure 8.

Figure 8 - Proposed intermediate shaft and head house at Alexandra Cottages off Lewisham Way



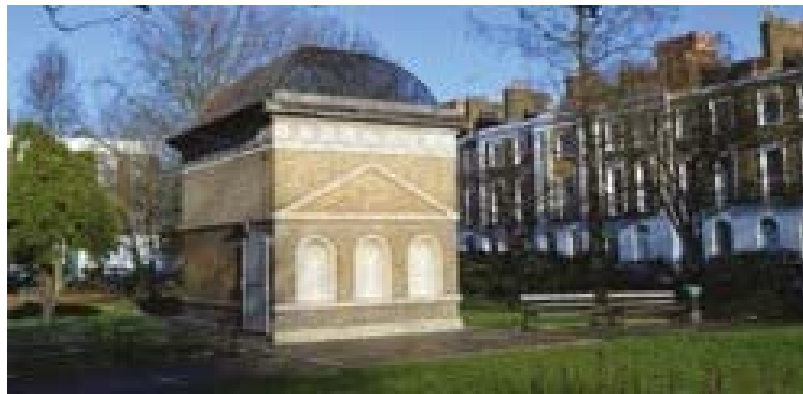
5.6.2. The Bakerloo line extension would require a shaft between New Cross Gate and Lewisham stations to connect the tunnels to the surface. The shaft would provide an emergency access and evacuation route in the unlikely event of a fire or other incident. The shaft would also provide access for maintenance of the line and enables ventilation of the tunnels without which the extension could not operate. Shafts are a common feature across all modern underground railway networks.

5.6.3. The site we are proposing would likely require demolition of the existing business premises occupying the site which would have an impact on local employment and

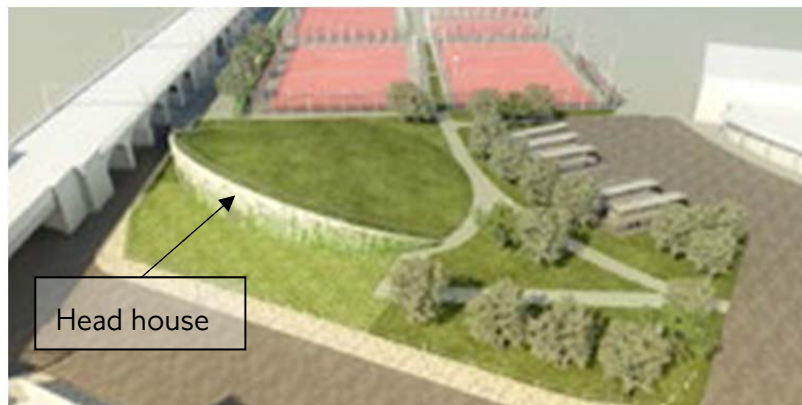
those customers using the services of the current businesses. The site could have the potential to accommodate new development following the construction of the BLE to avoid a permanent loss of employment space in this area.

- 5.6.4. A structure known as a head house would sit above the shaft at the surface following construction. Examples of head houses are shown in Figure 9. It is important to note that we have not yet designed the appearance of the head house and therefore the examples provided below cannot be taken as how the head house on Lewisham Way would necessarily look. The head house would typically be at least a two-storey structure and would house the necessary ventilation equipment. As well as this proposed shaft, stations would also act as access and ventilation points to the railway.

Figure 9 - Examples of head houses



Gibson Square - Heritage design London Borough of Islington Victoria Line



Mile End - 'Green design' London Borough of Tower Hamlets Crossrail Line 1 (post-construction, visualisation)

- 5.6.5. During everyday operations, the motion of trains would push air out of the tunnels and pull air into them from the atmosphere. As the air pushed out is usually warmer than the air pulled in, the shafts would help to provide a more comfortable temperature for passengers and staff. During periods of disrupted service, when trains could be held in the Bakerloo line extension tunnels for an extended period of time, the shaft's ventilation system could deliver cooler air from above ground to the

tunnels and to stationary trains. In the unlikely event of a fire, the shafts would assist with management of smoke in the tunnels, provide access for the fire and rescue services and provide a safe evacuation route for passengers and staff.

- 5.6.6. The site is close to exactly half way between Lewisham and New Cross stations, which is the optimal distance for the proposed shaft. This is because the location would minimize the distance for access to the furthest point on the line between the intermediate shaft and next station from where access to the tunnels is also available. Our consulted alignment passes directly underneath the proposed site whilst delivering direct and fast journeys between the proposed New Cross Gate and Lewisham Tube stations. The shaft would be built down to a position between the two tunnels, with the head house sat above the shaft.
- 5.6.7. Our proposal has developed the position of the shaft and head house within the consulted site given the new tunnel alignment proposal we are consulting on. The shaft position and its head house have moved from a position in the north west corner of the site to a more central position. This location sits directly above the proposed route alignment and in a position on the proposed work site that gives the most space around all parts of the infrastructure that needs construction.
- 5.6.8. The site is close to but outside of the local conservation areas but design of the shaft head house would need to be considerate to the local setting and surrounds. Further details of its scale and design will be set out in future proposals. The construction works would generate noise, air quality and visual impacts. Mitigations would be considered to ensure the impacts are minimised as far as practicable.
- 5.6.9. The site would provide good access for construction and operations vehicles which would need to access the site initially to construct the shaft down to the levels of the tunnels. Once the shaft is constructed, the ventilation equipment (such as the fans) would be installed. Finally the head house would then be built over the shaft.
- 5.6.10. The current owner of the site has asked us to consider a means of undertaking the shaft and head house construction works in such a way as to avoid impact on their business. Whilst we continue to consider those proposals, at the current time we are continuing to work on the basis of acquiring and using the site shown in Figure 8.

6. Overview of the 2019 Consultation

6.1. Key consultation matters

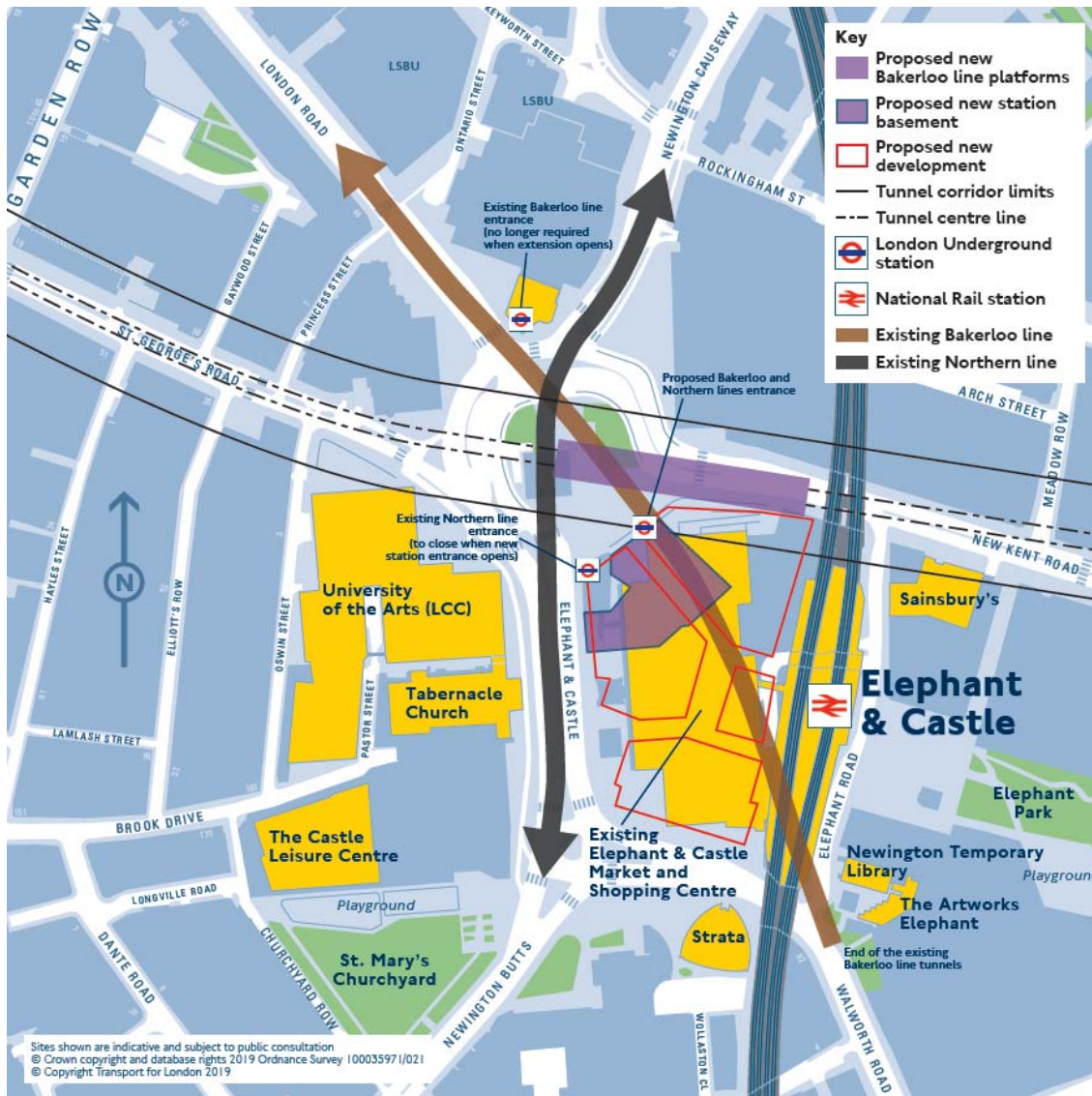
6.1.1. The 2019 consultation is seeking views on the new and updated aspects of our proposals as follows:

- The proposed combined station entrance at Elephant & Castle.
- The naming of the two proposed stations on Old Kent Road.
- The proposed primary tunnelling worksite at New Cross Gate and the alternatives considered.
- The proposed secondary tunnelling worksite at the Old Kent Road I station site.
- The line-end infrastructure proposed at Wearside Road council fleet depot.
- The route of the proposed tunnels from Lambeth North to Elephant & Castle.
- The route of the proposed tunnels from Elephant & Castle to Lewisham.
- A possible further extension of the route from Lewisham to Hayes and Beckenham Junction, involving a conversion of the existing Network Rail line.

6.2. Proposed new combined station entrance at Elephant & Castle station

- 6.2.1. The Bakerloo line extension would increase demand at Elephant & Castle station as more passengers are likely to enter and exit the station and interchange between the Bakerloo and Northern lines. To accommodate this increased demand, we would need to enlarge the ticket hall and platforms for the Bakerloo line, provide new lifts or escalators and improve the interchange to the Northern line. Without these improvements the station would become crowded and passengers would be less able to make their journeys without delays. The required works for the extension at Elephant & Castle are additional to existing plans to upgrade the Northern line ticket hall.
- 6.2.2. In the 2017 consultation we asked for views about where the Bakerloo line station should be located at Elephant & Castle, by setting out a shaded area on a consultation map within which we considered a station could be constructed. The feedback received supported an integrated Bakerloo line and Northern line station and / or around where the planned new shopping centre would be. Taking this feedback into account we are proposing to build a combined station entrance and ticket hall for the Bakerloo and Northern lines.
- 6.2.3. The combined ticket hall structure would be built as part of the proposed new shopping centre development. The new combined Underground station would be fully accessible and, as part of the delivery of the Bakerloo line extension, would provide step-free access and improved interchange to the Northern line. The proposed location of the combined station is shown in Figure 10.

Figure 10 – Proposed Elephant and Castle Bakerloo line station upgrade



6.2.4. For further details on how we have developed our proposals for the new combined station entrance at Elephant and Castle since the 2017 consultation please see the supporting report entitled Background to Elephant and Castle station proposal, available on the consultation website¹².

¹² tfl.gov.uk/bakerloo-extension

- 6.2.5. By combining the entrance, exit and ticket hall for the Northern and Bakerloo lines, we can create a single focal point for accessing the Underground that fits with the existing and planned changes to the wider town centre. The new entrance would:
- Shorten the interchange from the Thameslink station to the Bakerloo line
 - Improve the accessibility of the Underground by providing passengers with one entrance to access the Bakerloo and Northern lines
 - Simplify and improve passenger flows in the station.
- 6.2.6. Our proposals would mean that passengers would no longer access the Bakerloo line or Northern line at the Bakerloo line station entrance at the junction of London Road and Newington Causeway. Although it would no longer be required, we have not yet decided what would happen to the existing Bakerloo line station building once we have closed it to passenger use. We will consider this further as we develop our future proposals.
- 6.2.7. We are working with the shopping centre owner as they progress the design of their redevelopment. Having combined station works delivered as part of the shopping centre development could help to reduce construction impacts. This is because a lot of the work required to redevelop the shopping centre would be similar to the construction works required to build the new station entrance. Undertaking the construction of the shopping centre redevelopment and the new combined station ticket hall structure within its basement, on the same site at the same time, can therefore bring a range of efficiencies.
- 6.2.8. As the new Bakerloo line station would be built within new infrastructure that is apart from the existing station this should also reduce the impact on the existing Bakerloo line station and interchanges with the Northern line during construction.
- 6.2.9. The new station entrance for the Bakerloo line is proposed to connect to a new set of Bakerloo line platforms on a new tunnel route between Elephant and Castle and Lambeth North. We are also seeking views on this new section of tunnel route as part of this consultation and more information is available in section 6.7 of this report. Our proposal for the combined station entrance provides the benefit of being closely located to the proposed new alignment of the tunnels and where the new platforms could be constructed. This means we should be able to minimise walking times through the station for passengers travelling to the Bakerloo line platforms.
- 6.2.10. The combined station entrance and new tunnel route and platforms have been designed to enable passengers to continue to interchange between the Northern and Bakerloo lines. We will develop proposals for how passengers will interchange between the lines as part of our future planning for the station following this consultation. We would seek to deliver an interchange that would provide step free

access between the lines and reduce congestion compared to the current station interchange.

6.2.11. Once we have further developed our proposals for the new combined station at Elephant and Castle, including the proposals for the new platforms and interchange layout, we will be able to determine if we require land to construct those parts of the station that would not be delivered as part of the planned shopping centre development. We will also determine whether we need to temporarily remove access to the Bakerloo line at Elephant & Castle to facilitate our construction works.

6.2.12. Further consultation will be undertaken once designs for the station have been developed.

6.3. Old Kent Road 1 and Old Kent Road 2 station names

Old Kent Road 1 station name

6.3.1. We are seeking views on the name for the proposed Old Kent Road 1 station. Since we first consulted on the station site proposals in 2017, suggestions for the station name have included Old Kent Road or Burgess Park. The site we have identified is situated across from Burgess Park, a popular, large green open space that holds events throughout the year and will continue to serve the existing and new communities that will be established in the Old Kent Road area. Stations on the Tube network have a history of naming based on the local park they serve (Green Park, St James's Park, Regents Park etc). For more information about the history of the Old Kent Road area that the proposed new station will serve, please visit <https://oldkentroad.org.uk/history/>.

6.3.2. Alternatively, the 'Old Kent Road' is a widely recognised place name and could also be used for one of the proposed new stations in this location.

Old Kent Road 2 station name

6.3.3. We are also seeking views on the possible name for the proposed Old Kent Road 2 station. Since we first consulted on the station site proposals in 2017, suggestions have included Old Kent Road and Asylum. London Underground stations have a long history of being named after local landmarks (e.g. Mansion House, Bank, Marble Arch). The station would sit on the junction of Asylum Road and nearby London's largest complex of alms houses originally known as the Licensed Victuallers' Benevolent Institution Asylum and now more commonly known as Caroline Gardens. The alms houses are Grade II listed buildings with a history dating to early 19th Century and were established to provide care and housing to retired publicans. For more information about the history of the Old Kent Road area that the proposed new station will serve, please visit <https://oldkentroad.org.uk/history/>.

6.4. Proposed primary tunnelling works site at New Cross Gate

- 6.4.1. To construct the Bakerloo line extension we are proposing to build new tunnels between Lambeth North and Lewisham. The tunnels would be built by tunnel boring machines which would produce spoil and need to be supplied with materials to enable construction of the tunnels. To assist with the transport of the spoil and delivery of materials, we are proposing to construct new rail sidings. We are proposing to undertake these works from New Cross Gate, as shown in Figure 11.

Primary tunnelling worksite proposal

- 6.4.2. The station site identified at New Cross Gate has the capability to host major construction works for the delivery of the extension tunnels. As we are now proposing to use this site as the primary tunnelling worksite, our proposals will require more land than we originally consulted on in 2017 and now include Network Rail land to the north of the retail park for construction of rail sidings.
- 6.4.3. The overall site includes part of the New Cross and New Cross Gate Railsides Site of Importance for Nature Conservation and is adjacent to the Hatcham Park Road Conservation Area. The size is sufficient for the delivery of rail sidings and the logistics and facilities launching and servicing tunnel boring machines. The location enables access to the rail network and the pathing of freight trains for the transport of spoil away from the tunnel works, as well as direct access from the trunk road network (the A2). Located on the route of the extension, the site also means we can avoid constructing excess tunnels compared to the two alternative primary tunnelling worksites we have considered.
- 6.4.4. The sidings would enable us to use trains to unload materials and load spoil for transport out of London on the rail network. This proposal would substantially reduce the environmental impact of the Bakerloo line extension construction works. Other recent schemes such as the Northern line extension have undertaken works close to the river Thames, enabling transport by barge. The Bakerloo line extension does not have access to waterways that can enable this and therefore our proposals have focused on finding tunnelling worksites where rail transport could be feasible.
- 6.4.5. Given the proposed activities at the site, we do not envisage that the current supermarket, other retailers and petrol filling station can remain operational during the construction works for the Bakerloo line extension. This would result in the loss of these services for the local community.
- 6.4.6. For staff employed at the site, their roles would be lost at this location, but there may be options to transfer to alternative supermarkets or be recruited elsewhere in the grocery industry due to diverted trade from the supermarket closure. The proposed station and tunnelling works at the site will generate their own employment. Furthermore, once works are complete the site could be redeveloped according to local planning policy and site allocations which would include commercial uses such as a supermarket.
- 6.4.7. There are a range of alternative retailers in the local area along the Old Kent Road, in the Lewisham town centre area, and more widely in the Deptford to Surrey Quays area. These alternatives can provide many customers with comparable retail services.

- 6.4.8. We have therefore concluded that using the New Cross Gate site (and working on the basis of the impacted Tesco store at Old Kent Road – see section 6.6) for the tunnelling works is likely to provide sufficient benefit in the public interest to justify the impacts that could arise from closure of the existing retail facilities and petrol filling station.
- 6.4.9. We are also aware that there may be changes in land uses in the local area around New Cross Gate and towards Old Kent Road. These land use changes may increase population before the delivery of the Bakerloo line extension which may lead to changes in grocery provision. We will continue to monitor any market changes and the impact these changes may have on the final proposals for the extension.
- 6.4.10. The current site owner has proposals for the redevelopment of the retail park. The plans shared with TfL and the public do not make an allowance for the proposed Bakerloo line extension station or the wider tunnelling works which we have made the land owner aware of prior to launching this consultation.
- 6.4.11. We have registered our concerns with the owner about the effect their redevelopment proposals could have on our plans for the extension. There is a risk that redevelopment of the site before the extension is delivered could preclude delivery of the proposed Bakerloo line station and prevent us from using the site to construct the tunnels for the extension. This could risk delivery of our proposed extension to Lewisham and potentially beyond to Hayes and Beckenham Junction. Should an application for planning permission be made, we will consider and respond to those proposals at the relevant time.
- 6.4.12. The station and tunnelling works will require 24 hour operation and are likely to generate temporary noise, dust and visual impacts that we will work to mitigate. We will set out how we plan to mitigate the impacts of the tunnel and station construction works as we develop the scheme, and the full impacts will be published in an Environmental Statement that would be required for the Transport and Works Act Order we would submit and would be consulted upon.
- 6.4.13. For more information about the primary tunnelling work site proposal at New Cross Gate please see the Tunnelling Work Sites Summary Report available on our website¹³.

¹³ Available to view and download from tfl.gov.uk/Bakerloo-extension

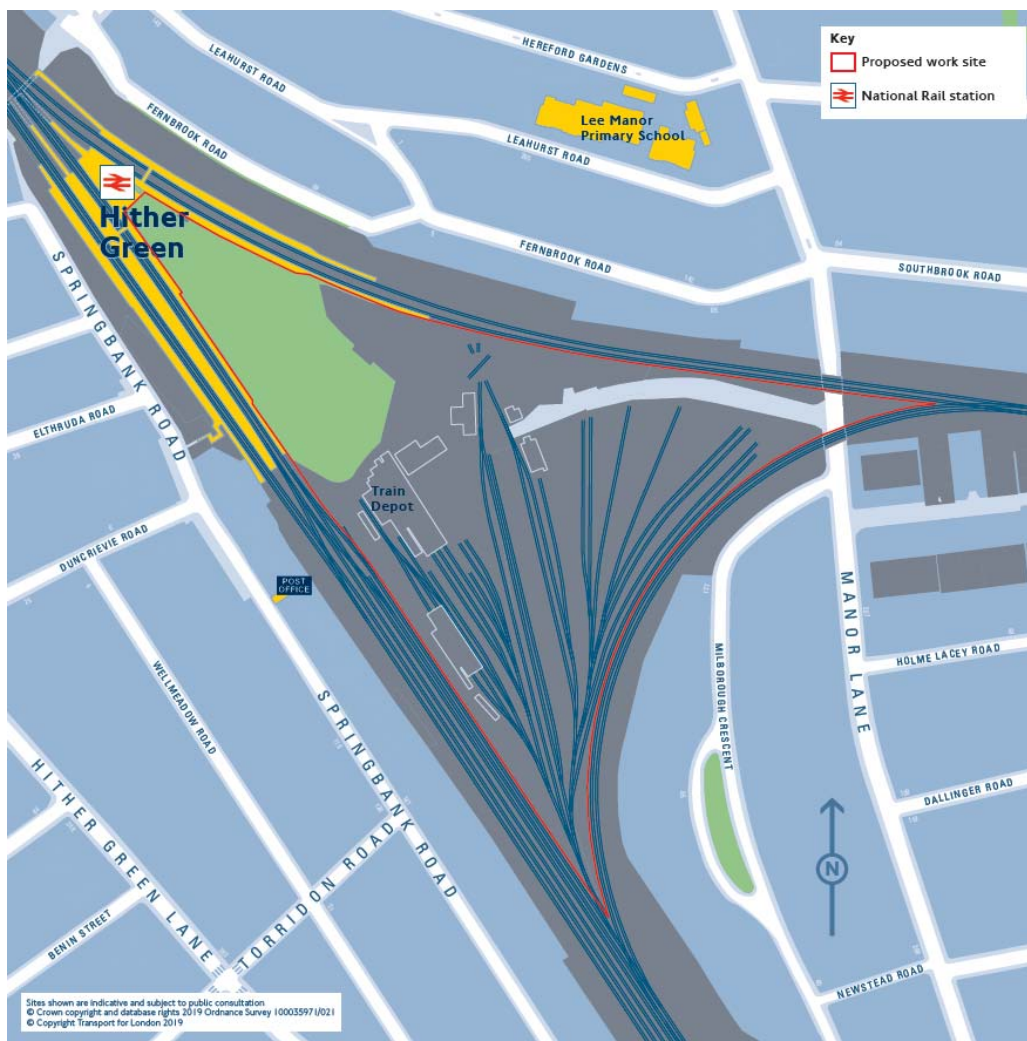
6.5. Alternative sites considered for the primary tunnelling worksite

6.5.1. In considering where to locate our primary tunnelling worksite, we looked at a number of possible sites and considered three shortlisted sites in detail. In addition to the proposed site within the retail park at New Cross Gate, we also considered locating the worksite at an existing rail freight site at Hither Green and a new site at Catford town centre.

Hither Green

6.5.2. The site we have considered at Hither Green is an existing rail freight operations site that is located between the Sidcup and Orpington lines as they run into Hither Green station – see Figure 12. These lines are on embankments above the level of the proposed site, which could provide separation and screening for local residents.

Figure 12 - Tunnelling site considered at Hither Green



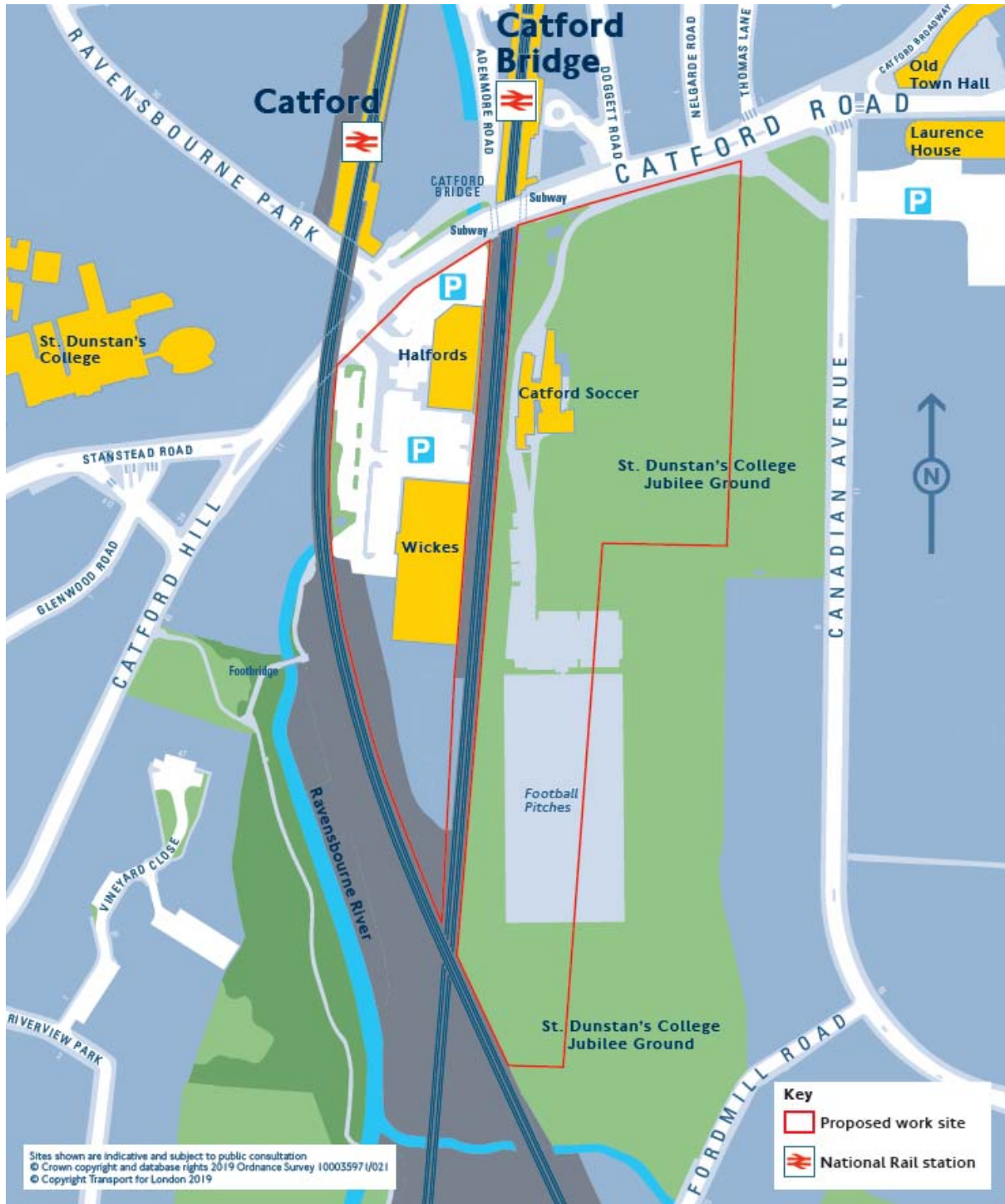
- 6.5.3. The site is accessed via Manor Lane – a residential road with height restrictions caused by the rail viaduct serving the station. The site has rail sidings to facilitate the maintenance of the south east rail network and the movement of rail freight. If we used the site for the primary tunnelling works for the extension, the current uses of the site could not continue and would need to be relocated.
- 6.5.4. The length of the sidings is below our preferred length of 300 metres which means more freight train movements would be required per day to transport the same amount of spoil as could be transported on the rail network from New Cross Gate or Catford.
- 6.5.5. The site would require 1.6 km of additional tunnelling beyond the current planned end point for the extension to Lewisham, compared to our proposed site at New Cross Gate. As such, the use of this site would significantly increase the scale of construction, cost and resources required to build the extension. It could also increase the cost and complexity of extending the Bakerloo line beyond Lewisham on the Hayes line.
- 6.5.6. Due to direct access from the main road network and the excess tunnelling the site requires compared to the proposed site at New Cross Gate, we have concluded that the site at Hither Green is less preferred and is not proposed for further consideration. Further details on our consideration of this alternative site are available in the Tunnelling Work Sites Summary Report¹⁴.

¹⁴ Available to view and download from tfl.gov.uk/Bakerloo-extension

Catford Hill Retail Park and the Jubilee Grounds

6.5.7. The site we have considered at Catford comprises the Catford Hill retail park site and adjacent St Dunstan's School playing fields known as the Jubilee Grounds. The sites are to the south of Catford Bridge station in Catford town centre – see Figure 13.

Figure 13 – Alternative tunnelling work site option considered at Catford Hill Retail Park and Jubilee Playing Grounds



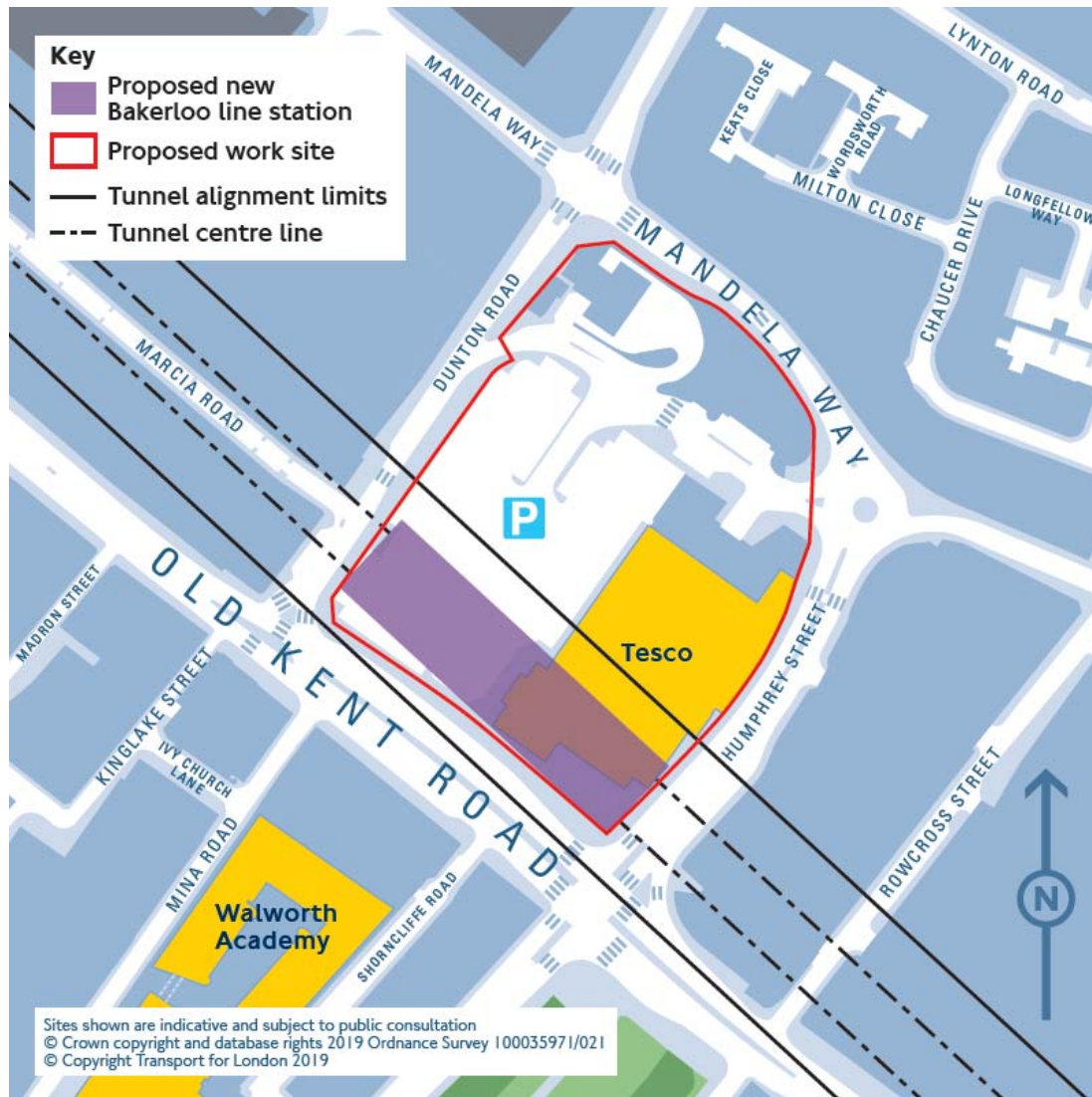
- 6.5.8. The sites are accessed directly from the trunk road network off the A205. The Jubilee Grounds playing field site would be required for the tunnelling works as this site runs along the Hayes line for a long enough stretch to enable us to build new rail freight sidings and their junctions on and off the Hayes line. The Catford Hill retail park would be required for the launch of the tunnelling machines towards Lewisham.
- 6.5.9. Using the Catford site would require up to 1.7 km of additional tunnelling beyond the current planned end point for the extension to Lewisham, compared to the proposed site at New Cross Gate.
- 6.5.10. The existing properties on the retail park, except for a Network Rail substation, and playing fields sites would be demolished to enable the works which could result in a loss of jobs and a Nursery to the local community. The Jubilee Grounds (St Dunstan's School playing fields) sports facilities would be occupied by construction activities and therefore there could be a temporary loss of recreational facilities for the School and wider community. The school playing fields are also designated Metropolitan Open Land and Urban Green Space.
- 6.5.11. The Catford Hill retail park is built over the Ravensbourne River in a culvert. For the tunnelling machines to be launched from this site the River would need to be diverted. The current access from both Catford stations and the town centre to the Pool River Linear Park which runs along the Ravensbourne River is likely to require a diversionary route. Construction works in this ground would be challenging. The site is also in a flood zone – an area at risk of flooding. Additionally, the Waterlink Way section of the National Cycle Network runs across the Catford Hill Retail Park and would need to be diverted during our works.
- 6.5.12. The Catford site would generate several environmental impacts. Due to the length of the extra tunnelling works required to reach the site, more construction activity would be required increasing the carbon footprint of the extension delivery.
- 6.5.13. Due to the impact on the natural environment associated with the river, the playing fields and additional excess 1.7 km of tunnelling, we have concluded that the site at Catford is much less preferred and is not proposed for further consideration. Further details on our consideration of this alternative site are available in the Tunnelling Work Sites Summary Report¹⁵.

¹⁵ Available to view and download from tfl.gov.uk/Bakerloo-extension

6.6. Proposed Old Kent Road I tunnelling works site

6.6.1. In addition to building a station, we are proposing to use the Old Kent Road I site as a secondary tunnelling worksite – see Figure 14. The proposed tunnelling works from this site would be for construction of the tunnels between Old Kent Road I and Lambeth North – where we will connect the new tunnels to the existing Bakerloo line.

Figure 14 - Proposed tunnelling work site at Old Kent Road I station site



6.6.2. Undertaking tunnelling works from the Old Kent Road I site will mean we can build the new Elephant and Castle Bakerloo line station, and connect into the existing Bakerloo line tunnels much sooner than we could if we undertook all the tunnelling works from a single worksite.

6.6.3. At Old Kent Road I we have determined that the work site we consulted on in 2017 should be retained because it is able to accommodate both construction of the

station and launching the tunnel boring machines. Land requirements for the station and tunnel construction will be further developed to confirm the land required on a permanent and temporary basis.

- 6.6.4. More details about the proposed tunnel works from the site are available in the Tunnelling Work Sites Summary Report¹⁶.
- 6.6.5. Given our proposed station and tunnelling works at the Old Kent Road I site, we do not envisage that the current Tesco supermarket and its petrol filling station could remain operational during our works. This would result in the loss of the supermarket for the local community, its car parking and potentially the employment it generates until our works are complete.
- 6.6.6. For staff employed at the site, their roles would be lost at this location, but there may be options to transfer to alternative supermarkets or be recruited elsewhere in the grocery industry due to diverted trade from the supermarket closure. The proposed station and tunnelling works at the site will generate their own employment. Furthermore, once works are complete the site could be redeveloped according to local planning policy and site allocations which would include commercial uses such as a supermarket.
- 6.6.7. There are a range of alternative retailers in the local area along the Old Kent Road and towards Elephant and Castle and Surrey Quays which can provide many customers with the same retail services.
- 6.6.8. We have concluded that using the proposed Old Kent I station site for both station construction and the additional tunnelling works provides sufficient benefit in the public interest to justify the impacts that could arise from closure of the existing retail facilities and petrol filling station.
- 6.6.9. We are also aware that there may be changes in land uses along the Old Kent Road and increases in population before the delivery of the Bakerloo line extension which may lead to changes in grocery provision. We will continue to monitor any market changes and the impact these changes may have on the final proposals for the extension.

¹⁶ Available from tfl.gov.uk/bakerloo-extension

6.6.10. The station and tunnelling works will require 24 hour operation and, although the site has a natural buffer from the road network which reduces the proximity of the works to the surrounding community, they are still likely to generate temporary noise, dust and visual impacts that we will work to mitigate. We will set out how we plan to mitigate the impacts of the tunnel and station construction works as we develop the scheme, and the full impacts will be published in an Environmental Statement that would be required for the Transport and Works Act Order we would submit and would be consulted upon.

6.7. Proposed line-end infrastructure at Wearside Road council fleet depot

6.7.1. We are proposing to end the tunnelled route for the extension to Lewisham at a Lewisham Council-owned fleet depot located at Wearside Road – see Figure 15.

6.7.2. We consulted on proposed infrastructure for the site in 2017, and our current proposals retain a requirement for the site. The requirement has changed to include train stabling for operations and the recovery of tunnel boring machines during tunnel construction works. These requirements have increased the extent of the site required by our proposals. These tunnels would rise into a basement level structure which would require a head-house for access and ventilation. A head-house is typically at least a two-storey structure. We estimate that the majority of the site would remain in our possession following construction; however the proposals could be designed so as to accommodate alternative uses over some of the railway infrastructure.

Figure 15 - Proposed line-end infrastructure site in Lewisham



- 6.7.3. The existing operations of the Council depot would need to cease for the site to be used for the extension construction and operations. We will work with the Council to understand these impacts.
- 6.7.4. Although the site is bounded by existing rail lines and the Ravensbourne River which help to isolate the site and could help to reduce potential impacts, during construction, noise, dust, vibration and light sources may be generated and we will consider if any mitigations are required given these impacts.
- 6.7.5. The site would be designed to enable a future potential extension to Hayes and Beckenham Junction. The site is required as part of the extension to Lewisham, regardless of the different site options we have considered for where the extension tunnels could be constructed from, as covered in section 6.4.
- 6.7.6. The site has an existing access that is used by Heavy Goods Vehicles, however our proposals would be likely to increase movements during the construction period. We recognise the impact construction in the local area could have and we will consider how we could reduce these impacts and develop measures to mitigate any effects.
- 6.7.7. The Ravensbourne River runs alongside the site and therefore we will consider how our construction works and the operation of the site can avoid impacting the water course. We will also work to ensure that flood risk generated by the presence of the river can be managed in so far as possible to avoid affecting train services once operational.

6.8. Proposed route of new tunnels

6.8.1. We have designed our proposed tunnel alignment to deliver the following objectives:

- Facilitate the delivery of a new Bakerloo line station at Elephant and Castle;
- Enable the existing Bakerloo line to remain operational as much as practicable during our works;
- Minimise passenger journey times on the existing Bakerloo line and extension;
- Deliver a good quality of journey (e.g. reducing in-car noise);
- Optimise the sustainability of the extension by minimising the resources required to operate the service;
- Improve value for money through minimising capital and operational cost to operate the train service on the extension, such as enabling the removal of the former proposal for an intermediate shaft at Bricklayers Arms; and
- Where possible position the new stations to enable a quick and easy interchange with National Rail, Overground, DLR and local bus networks.

6.8.2. To achieve this, the alignment has been developed to:

- Reduce the overall length of tunnel that needs to be constructed and maintained;
- Reduce curvature along the route to maximise the speed at which trains can travel to reduce passenger journey times, and provide good quality journeys;
- Avoid tall buildings and their foundations; and
- Reduce the depth of stations to reduce excavation requirements and in-station journey times.

6.8.3. As well as a new tunnelled route from Elephant & Castle, our proposals also include a new section of tunnel route between Elephant and Castle and Lambeth North stations which would replace the existing Bakerloo line between those stations.

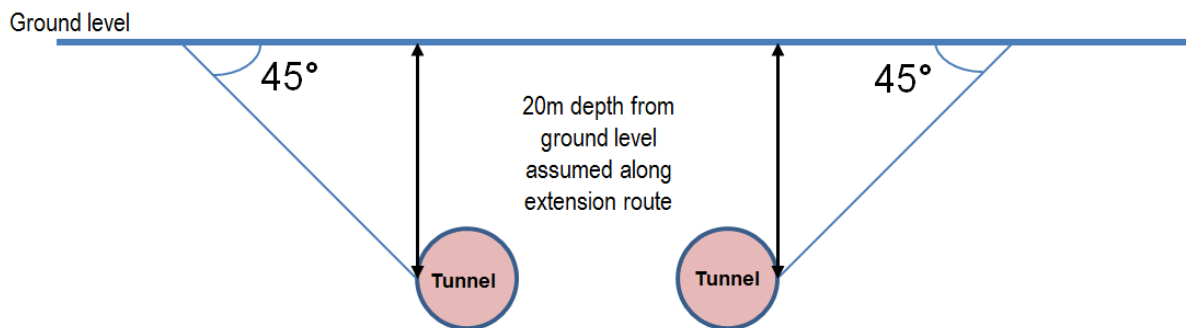
6.8.4. In general, other than at stations and as the line approaches the station, the tunnels would be located at a minimum of 15 metres - and on average 20 metres – below ground, measured from the top of the tunnel. Experience from the construction of similar tunnels, including the Jubilee line extension, High Speed 1 and Crossrail, is that the occupiers of properties above are unlikely to experience disturbance during construction or from the operation of the railway.

6.8.5. As we develop our alignment proposals and further investigate the geology and characteristics of buildings along the route, we will be able to forecast whether any specific mitigation may be required to properties and work with those owners as

mitigations are considered. This information will be explained in the Environmental Statement when we apply for the necessary powers to construct and operate the line.

- 6.8.6. The route alignment we are consulting on may change as we develop our proposals and increase our understanding about the ground conditions, possible obstructions and any impacts that could occur. To ensure that potential properties that do not lie above the tunnel locations in the current consulted alignment but may be in sufficient proximity that they could be affected by possible future revisions to the alignment, we have included estimated limits of the tunnels' impacts and route. The limits are estimated based on an assumption of the tunnels being an average of 20 metres from surface as shown in Figure 16.

Figure 16 - Principle applied for estimating limits of the proposed tunnels' impacts

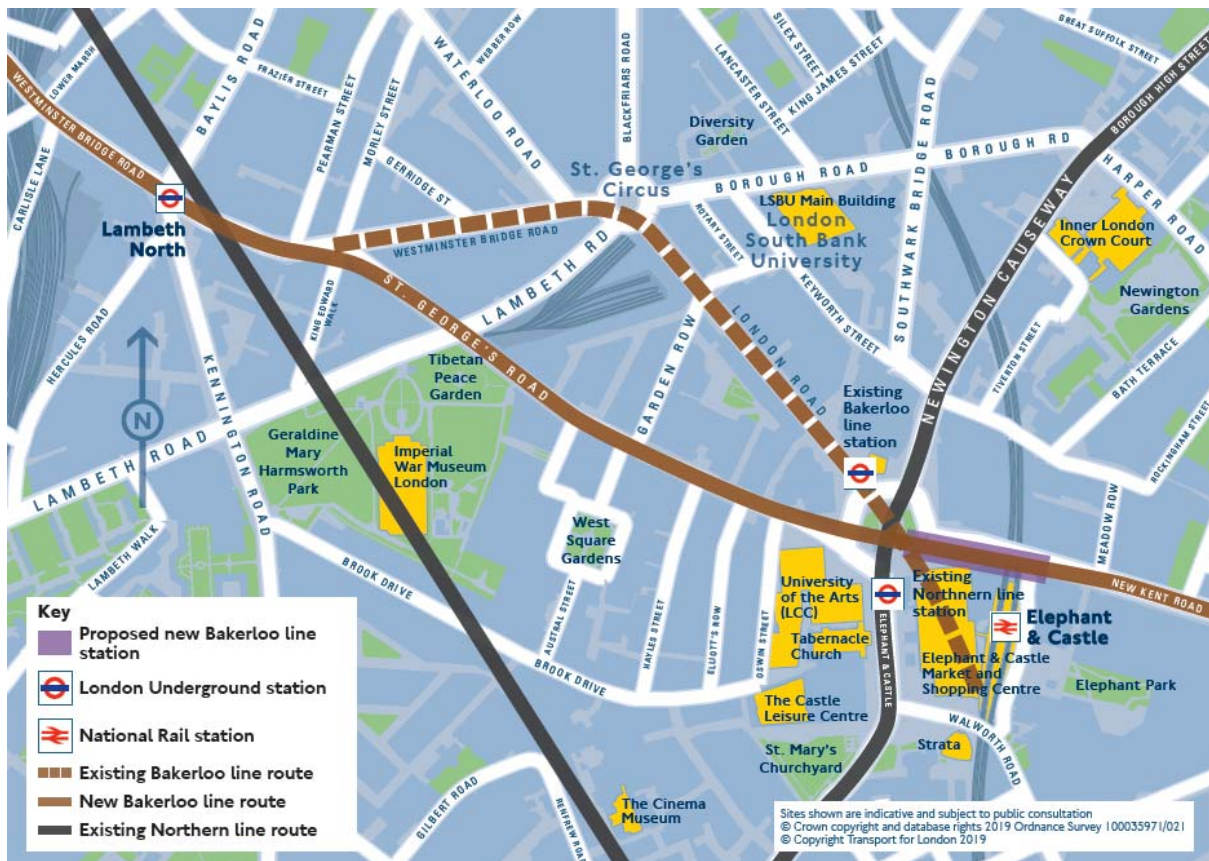


- 6.8.7. The distance between the tunnels and the ground level will most likely change along the route alignment. As we develop our proposals we will complete detailed topographical surveys and refine the area that we estimate may be impacted by the alignment we progress. We will ensure that any properties no longer within the area or that may be newly captured by the area would be notified.
- 6.8.8. To check if a specific property could be affected by the BLE proposals, please see the TfL Bakerloo line consultation web page (tfl.gov.uk/bakerloo-extension) where we have provided maps that can be downloaded or provided via an email request to ble@tfl.gov.uk with the address and postcode.

Proposed new tunnel route for the Bakerloo line between Lambeth North and Elephant and Castle

6.8.9. We are proposing to construct new tunnels between Lambeth North station and Elephant and Castle, creating a new section of route for the existing Bakerloo line, as shown in Figure 17.

Figure 17 - Proposed new route for Bakerloo line between Lambeth North and Elephant and Castle



6.8.10. We are proposing this new section of tunnelled route for the Bakerloo line because we propose to build new Bakerloo line platforms for a new Elephant and Castle Bakerloo line station. The approximate position of these new platforms is currently in an area under New Kent Road in the town centre.

6.8.11. These would be connected underground to the proposed combined Northern and Bakerloo line station ticket hall – more details are in section 6.2. The new platforms would have new connections underground to the existing Northern line platforms. We intend to further develop our designs for Elephant and Castle station and will consult further on our proposals in future.

6.8.12. Whilst the new tunnels would be built in the most part by tunnel boring machines, to connect them to the existing tunnels at Lambeth North we will need to undertake complex work around the existing line. It is possible that to complete these

connection works the train services running on the Bakerloo line between Waterloo and Elephant and Castle may need to be suspended. We will consult further once we have further developed this part of our proposals.

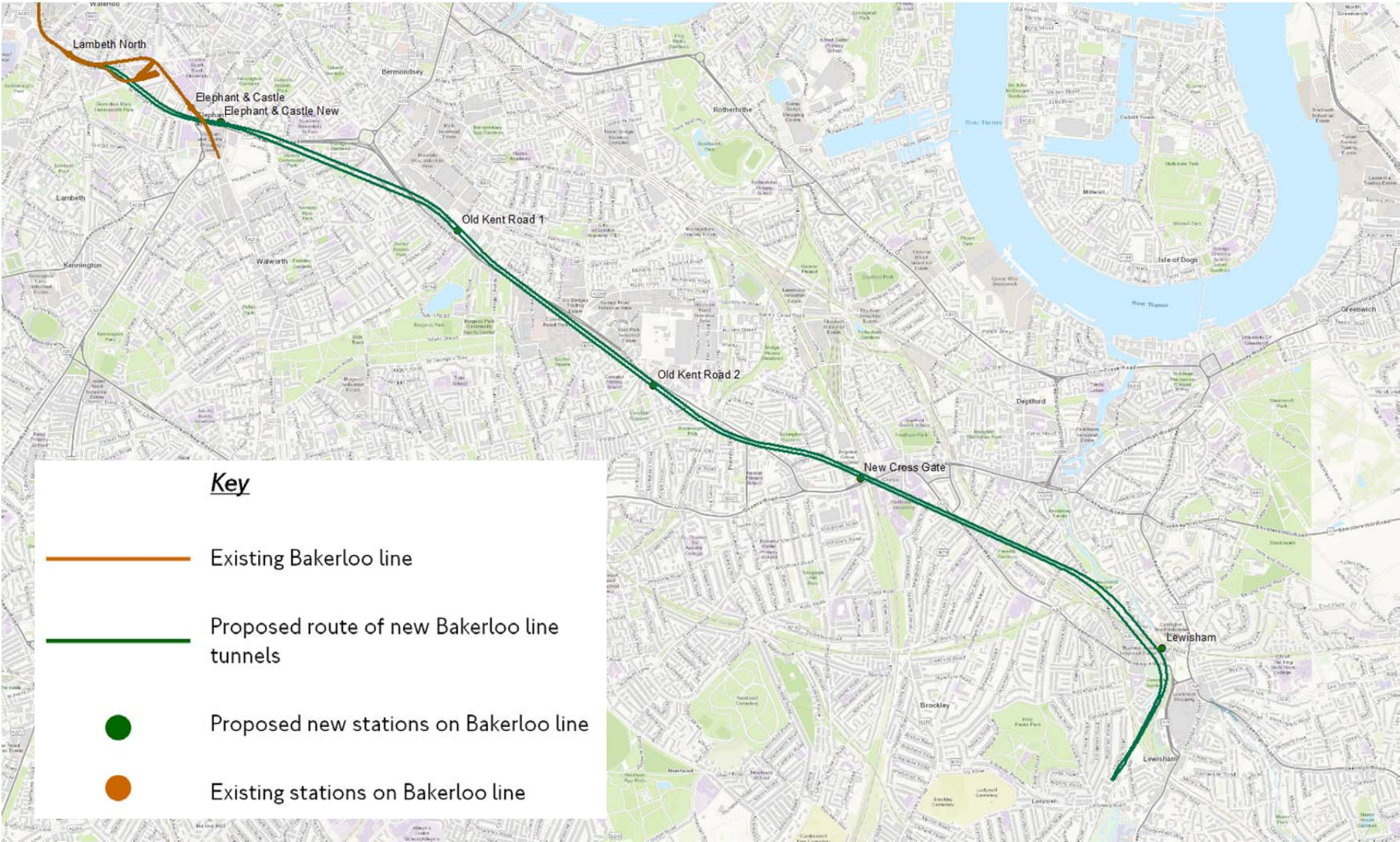
6.8.13. The proposed route runs along New Kent Road, underneath the Northern line and Michael Faraday Memorial on the town centre peninsula and then northwards under St George's Road. We have tried to keep the tunnel alignment under the highway as far as possible to avoid running under tall buildings – including the current University of Arts London campus and future tall buildings that will be built on the campus or along St George's Road.

6.8.14. We are planning to connect to the existing line without impacting upon the London Road Bakerloo line train stabling site shown in Figure 17 (the site lies between London Road, Lambeth Road, Gladstone Street and St George's Road and is where trains are parked when out of service). We are aiming to connect just to the east of Lambeth North station near the junction of St George's Road and Westminster Bridge Road. The precise location and any worksite requirements are in development and will be subject to future consultation.

Proposed route of extension tunnels from Elephant and Castle to Lewisham

6.8.15. To deliver an extension of the Bakerloo line to Lewisham, we need to construct new tunnels connecting our proposed stations along the route. A map of the route of the proposed tunnels is shown in Figure 18. More detailed maps are available to view and download on our website at tfl.gov.uk/bakerloo-extension.

Figure 18 - Route of proposed new extension tunnels between Elephant and Castle and Lewisham



- 6.8.16. The new tunnels from Elephant & Castle to Lewisham would begin at the proposed new station at Elephant and Castle, which would lie under New Kent Road – this means that the new tunnels for the extension would not be able to connect to the existing overrun tunnels that stop under Walworth Road which are far from the optimal route for the extension that we have now developed.
- 6.8.17. The alignment from Elephant and Castle runs east along New Kent Road. The route is limited by how soon it can turn towards the proposed Old Kent Road 1 station by the redevelopment of the former Heygate estate (now known as Elephant Park). The route therefore diverts across the area around Salisbury Row Park where buildings are typically smaller scale with shallower foundations. The alignment then straightens to face down the Old Kent Road and run straight to the proposed station at Old Kent Road 1.
- 6.8.18. From the proposed Old Kent Road 1 station to the proposed Old Kent Road 2 station, the alignment has been designed to avoid a large tower block at Astley House on Coopers Road (south east of the Old Kent Road 1 site). The alignment then routes under a range of low height industrial / commercial premises, terrace housing and sites that are planned new developments. We are working with the London Borough of Southwark and the GLA to ensure that the foundations for any new development makes active provision for the Bakerloo line extension.
- 6.8.19. As the route approaches the site of the proposed station at Old Kent Road 2, the alignment is designed to avoid the foundations of the residential blocks on Commercial Way. We have positioned the proposed stations to create the most direct tunnel alignment between the two stations, whilst taking account of the potential obstructions from existing and planned future development.
- 6.8.20. As the alignment runs from the proposed Old Kent Road 2 station to New Cross Gate, the route has been designed to avoid the tall buildings in the Reaston Street and Hatfield Close areas. The route then runs across the Hatcham Park Road area cutting across the southern end of the Sainsbury's Retail Park, to serving the existing New Cross Gate station and then on a relatively direct route onwards to the proposed intermediate shaft site at Alexandra Cottages off Lewisham Way. The land rises after the alignment departs New Cross Gate and therefore although there are taller buildings as part of the Goldsmiths University campus, the depth the tunnels means there is unlikely to be any conflict with the University campus.
- 6.8.21. In Lewisham town centre there has been substantial development over the last 15 years with further sites consented and set to be delivered soon. This has created a constrained corridor for the tunnels to reach the proposed Lewisham station site.

The constraints mean that part of the station and route alignment would lie under the existing National Rail infrastructure.

6.8.22. As the alignment runs to the end of the line, TfL and Lewisham Council have secured active provision for the tunnels underneath the site of the former Carpetright store on Lewisham Way.

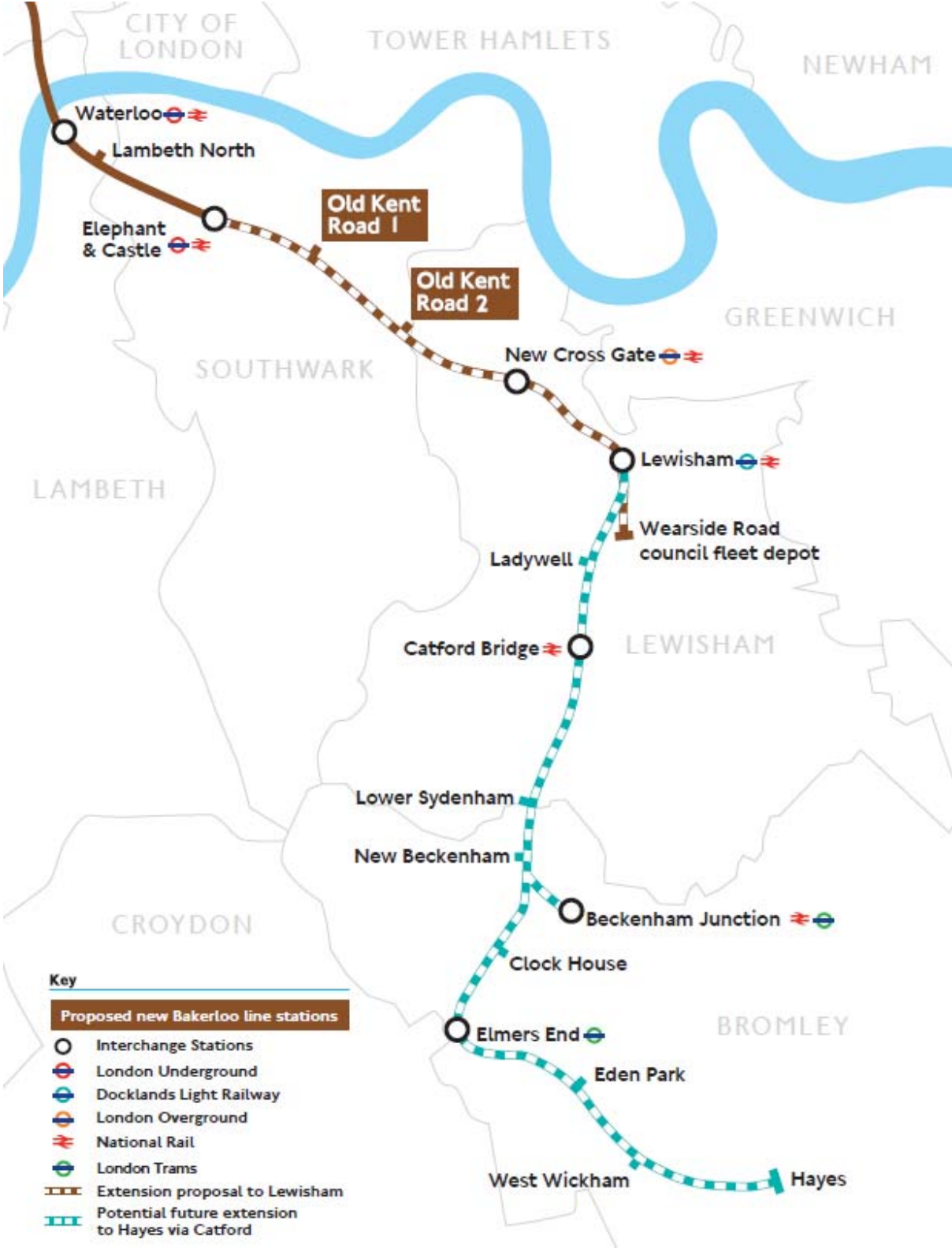
6.8.23. The tunnels then continue to Wearside Road council fleet depot broadly following under the existing rail corridor to avoid the deeper foundations associated with tall buildings along Lewisham Way. The tunnels would rise slightly in order to serve a proposed train stabling facility at the Wearside Road council fleet depot. This is also the point at which the train tracks could connect to the Hayes line, should a further extension be delivered.

6.9. Extending beyond Lewisham to Hayes and Beckenham Junction

- 6.9.1. As we have developed our proposals for the extension to Lewisham, we have ensured that the designs we consulted on in 2017, and now in 2019, allow for a further extension. Furthermore, as we have developed these proposals, we have been able to increase our understanding of how an extension beyond Lewisham could support operational and construction requirements as well as helping to achieve the objectives of the Mayor's Transport Strategy.

- 6.9.2. We are now consulting on a proposal to extend the Bakerloo line beyond Lewisham to Hayes and Beckenham Junction, shown in Figure 19, which would be in addition to our planned extension to Lewisham. We are consulting on this proposal as we have concluded that the opportunities and benefits that would arise from converting the Hayes National Rail line to Underground operations could justify the costs and impacts of the conversion. If we were to progress an extension beyond Lewisham to Hayes the cost of the extension would increase further. We will be able to establish what the cost of an extension to Hayes could be if we undertake further work to develop that proposal following this consultation.

Figure 19 - Map of proposed extension option to Hayes and Beckenham Junction



- 6.9.3. When we consulted on the proposed Bakerloo line extension in 2014, the consultation included a possible option for a route to Hayes and Beckenham Junction, which would involve converting the existing National Rail route from Ladywell to Hayes to London Underground operation and providing a new link to Beckenham Junction. These results, along with our responses to the consultation, can be found on our website¹⁷ - in summary there was a majority of support for the proposal alongside concerns about the impact on existing National Rail routes from stations on the Hayes line to Cannon Street and London Bridge stations.
- 6.9.4. If delivered, a Bakerloo line extension to Hayes and Beckenham Junction could provide a range of benefits to passengers making journeys to, from and across south east London. More information on why we think Hayes and Beckenham Junction offers the best opportunity for an extension beyond Lewisham can be found in our Further Extension to Hayes and Beckenham Junction Summary Report available on our website¹⁸.

Improving public transport access across south east London to support growth

- 6.9.5. The option to extend Bakerloo line from Lewisham to Hayes and Beckenham Junction could deliver substantial benefits for south east London. By converting the Hayes line to Underground operations, we could deliver a fast, reliable and more frequent train service to users of the Hayes line.
- 6.9.6. Furthermore, the extension of the Bakerloo line to Hayes could enable the recasting of existing National Rail paths that are currently used by the Hayes line into central London to alternate National Rail lines through south east London and into Kent. These additional services could improve journeys for many thousands of existing rail passengers and add capacity to support wider regeneration.
- 6.9.7. The final set of proposals for any recasting of the timetable would be subject to the service specification for rail services in London and into Kent. This is currently set by the Department for Transport with Network Rail; however TfL has proposed that Government should devolve the southeast rail services to its operation in its Metroisation Strategic Case¹⁹.

¹⁷ Available from <https://consultations.tfl.gov.uk/tube/bakerloo-extension-2014/>

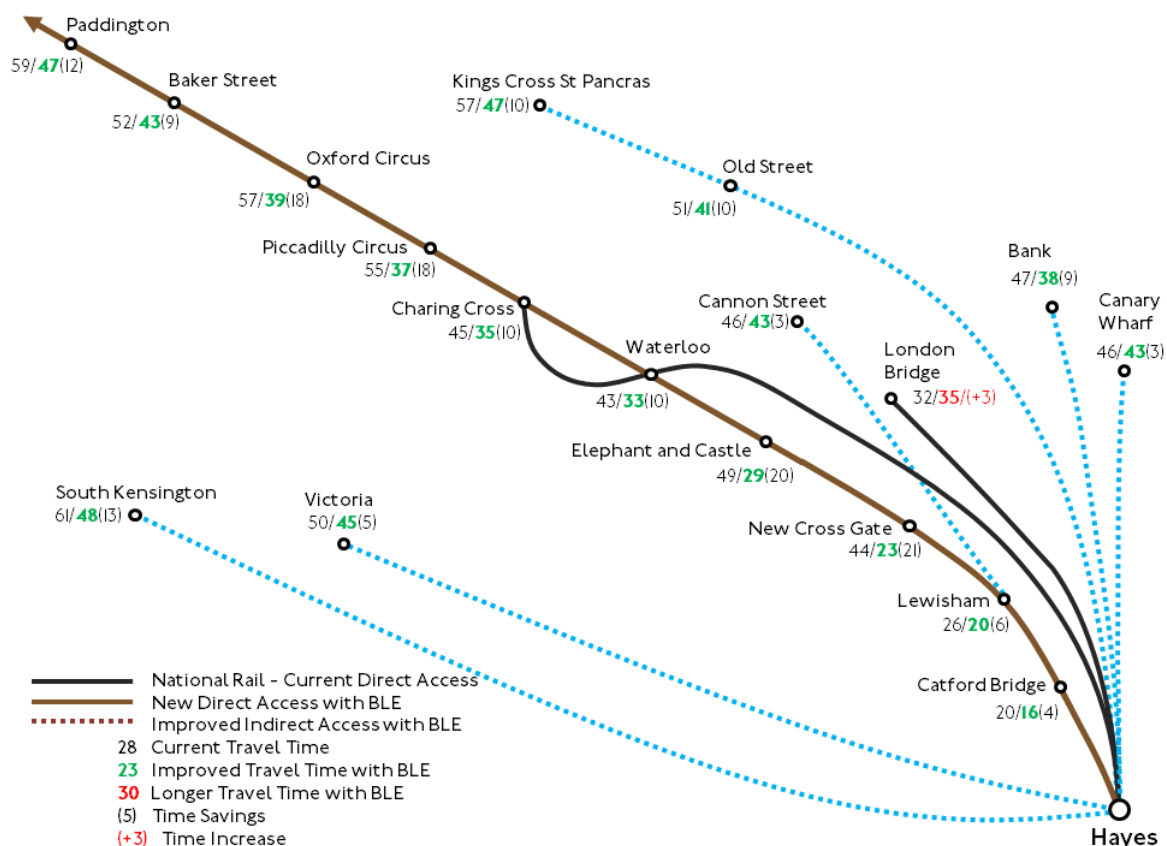
¹⁸ Please see tfl.gov.uk/bakerloo-extension.

¹⁹ More details can be found here: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/developing-the-rail-network>

6.9.8. Although London Underground trains are smaller than National Rail trains, as we would operate the service at a higher frequency, that could provide a train up to every 2-3 minutes, in almost all cases they would also provide a higher overall capacity service.

6.9.9. Our work has indicated that the extension of Bakerloo line services to Hayes and Beckenham Junction would be expected to reduce existing journey times to the majority of destinations in central London and further afield – see Figure 20. These benefits would be enabled by a direct service to more locations, including key central London interchanges and the faster acceleration and braking capabilities of modern Bakerloo line trains that would operate on the Bakerloo line once it is upgraded, as well as the frequency benefits delivered by a more frequent service. Journey times to London Bridge however would be expected to be slightly longer than they are with the present service.

Figure 20 - Journey times for current Hayes services compared to times if the Bakerloo line is extended to Hayes



A fully accessible railway

6.9.10. As part of any works to convert the Hayes line to London Underground operation, we would introduce TfL's modern standards and services. This would include making all stations fully step free both within the station and from street to train. This would significantly improve the number and range of accessible travel options for passengers who rely on step free travel to make easy journeys.

What do we intend to investigate?

6.9.11. Subject to the outcome from the public consultation, we plan to further develop the proposals for an extension to Hayes and Beckenham Junction. We anticipate that this work could involve:

- Understanding how an extension of the tunnel beyond Lewisham station could connect with the current National Rail line north of Ladywell station
- Developing how we could convert the current National Rail line serving Ladywell and all stations south to Beckenham Junction and Hayes to accommodate more frequent Bakerloo line services
- Establishing if a new depot for trains is required and where this could be located
- Working with Network Rail and the Department for Transport on how current services could be re-allocated to improve services for other communities in south east London

7. What we will do following this consultation

- 7.1.1. We are continuing to develop and consult on the proposed extension to Lewisham as the extension could deliver a range of benefits to south east London, including supporting new homes by improving accessibility and connectivity, and can also make journeys faster and relieve pressure on the existing rail, bus and road network along the route.
- 7.1.2. We are consulting on new proposals for how we construct the extension, where the route of the new tunnels are proposed to go and the planned new Bakerloo line station at Elephant and Castle. We are also consulting on changed requirements for the line end infrastructure at Wearside Road council fleet depot. We are inviting views on the names that could be given to the two new proposed stations on the Old Kent Road.
- 7.1.3. We are also considering the case for a further extension beyond Lewisham, as supported by the Mayor's Transport Strategy. We have concluded that a further extension to Hayes and Beckenham Junction is currently our preferred option and we are consulting on that proposal.
- 7.1.4. We will use the public consultation responses to help us develop our proposals for the extension. We will analyse the feedback we receive and publish the results once the consultation has closed. Subject to the volume of responses and the issues that are raised, we plan to analyse and respond to the key issues raised during 2020.
- 7.1.5. There will be further opportunities to provide feedback on the Bakerloo line extension as the scheme develops.
- 7.1.6. You can have your say on our proposals for the extension by visiting tfl.gov.uk/bakerloo-extension to provide a response to the consultation questions. The consultation will close on 22nd December 2019.