

# Northern line extension

## Background paper: limits of deviation

**This paper explains how the proposed limits of deviation for the works intended to be authorised by the Northern line extension (NLE) Transport and Works Act Order will operate.**

It will be of particular relevance to those close to the proposed NLE works.

This summary is not intended to replace or alter the text of the paper itself or any commitments contained in it, and it is important that you read the paper in order to have a full understanding of the subject. If you have any queries about this paper or about how it might apply to you, please contact [nle@tfl.gov.uk](mailto:nle@tfl.gov.uk)



## Limits of deviation

### 1 Introduction

- 1.1 This paper explains how the proposed limits of deviation for the works intended to be authorised by the NLE Transport and Works Act (TWA) Order (the Order) will operate.
- 1.2 The lateral limits of deviation shown on the Order plans will define the maximum extent within which the railway and ancillary works listed in the Order can be built. In addition, there will be vertical limits of deviation for the same purpose. These are generally standard: not exceeding three metres upwards and to any extent downwards, except in relation to specified aspects of the project.
- 1.3 The Order will have to contain sufficient lateral and vertical limits of deviation to allow for refinement of the preliminary design, on which the Order plans are based, during the detailed design stage.

- 1.4 Providing lateral and vertical limits of deviation is normal practice for TWA Orders for railway projects.

### 2 Vertical limits of deviation

- 2.1 Railways legislation has usually provided for vertical limits of deviation and a three metre upwards limit of deviation is included in the Department for Transport's model clauses for railways to be authorised by TWA Orders. This three metre limit was included in the following TWA railway orders affecting London:
  - DLR Stratford International Extension;
  - DLR Silvertown and London City Airport Extension; and
  - Victoria Station Upgrade (although for certain works an upwards deviation to any extent was permitted provided the work remained more than 4.5 metres below the surface).

The Channel Tunnel Rail Link Act 1996 also included this standard three metre limit as did the Crossrail Act 2008 although the latter allowed an increase to six metres in certain circumstances.

In contrast, the TWA Orders for the two East London Line Extensions and DLR's Woolwich Arsenal Extension authorised a 5 metre upwards vertical limit of deviation and the Heathrow Express and Piccadilly Line Extension TWA Orders allowed 6 metres.

2.2 The vertical limits of deviation for the NLE will be contained in the draft Order submitted as part of the TWA application.

### **3 Lateral limits of deviation**

3.1 The centre lines of the running tunnels of the NLE are drawn to match engineering requirements for the tunnels in question, and the lateral limits of deviation are generally drawn to provide a standard outer corridor width in relation to that centre line.

3.2 The width of the corridor would allow for a minimal amount of deviation when the detailed design is carried out, with the benefit of more comprehensive ground investigation data.

3.3 There is no intention to acquire permanently any surface land above bored tunnels (with the exception of ventilation and intervention shaft sites and stations). The land required to construct, operate and maintain the tunnels and the railway within them would be restricted to a subsurface stratum.

3.4 Further design work will take place for the construction phase of the scheme, utilising additional surveys, ground investigations and other relevant additional information. It will need to take account of undertakings and assurances given during the Order application process, as well as discussions with third parties.

3.5 The alignment of a modern railway is relatively inflexible as far as localised changes are concerned. Safety standards related to the speed of the train limit the minimum acceptable radius of curves and the rate at which gradients can change. Consequently a small change at one location can produce a significant effect over a long length of railway and so the scope for deviation of the railway within the limits of deviation is limited.

3.6 The lateral limits of deviation for the NLE will be set out in the draft Order submitted as part of the TWA application.

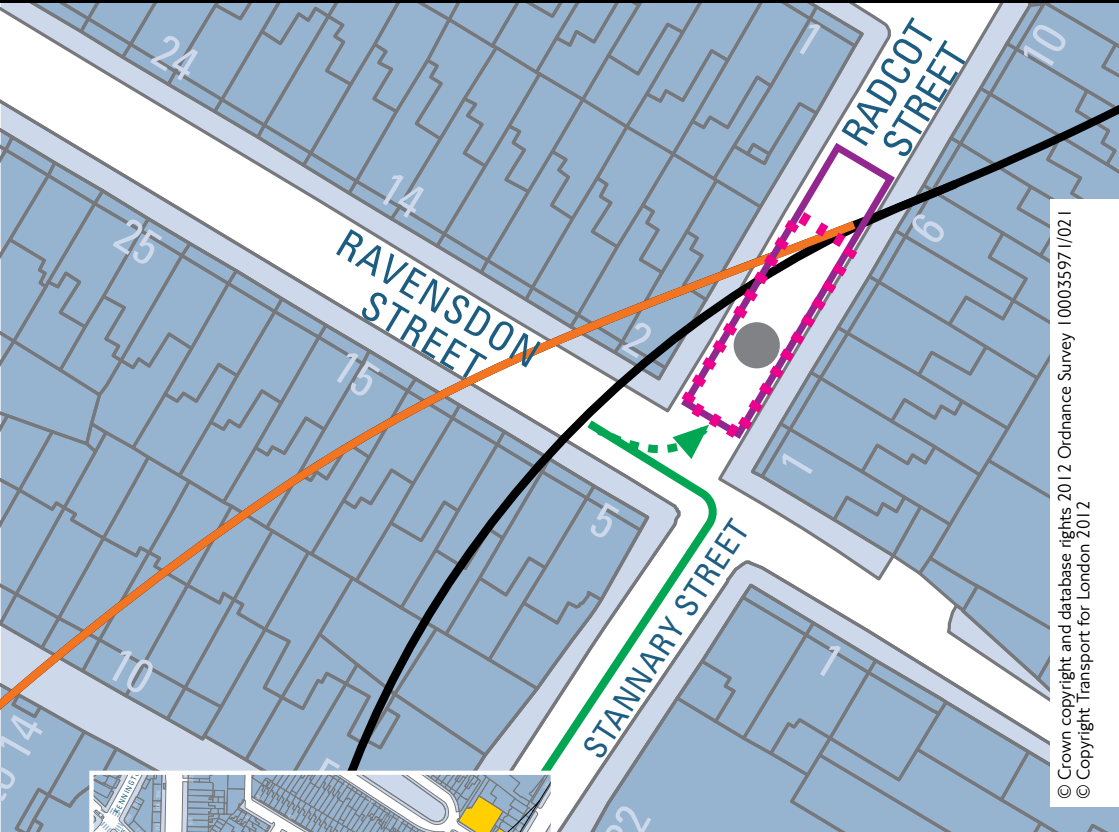
#### **4 Exercise of Order powers**

4.1 The powers in the Order will only be able to be used for authorised purposes. Accordingly, land can only be acquired within the limits and then used for the purpose for which acquisition is authorised by the Order.

4.2 The Environmental Statement submitted as part of the TWA application will identify the likely significant impacts that will arise from the construction and operation of the NLE. It will take into account the practicable scope for variation within the limits of deviation.

# Northern line extension

## Factsheet 1: Temporary shaft site at Radcot Street



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### Key

- Northern line
- Proposed Northern line extension
- Construction traffic access
- Construction site perimeter - first 2-3 months
- Construction site perimeter during grout treatment
- Shaft



# Northern line extension

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It will be of particular relevance to those close to the proposed NLE works.

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## 1. Background

To build the Northern line extension (NLE) the new tunnels would be connected to the existing ones along the line, which are approximately 300m from Kennington station.

To build these connections (known as step plate junctions) it is anticipated that as the tunnel work is progressing there will be a need for ground treatment works to stabilise the ground, and reduce ground movements and the risk of settlement damage on adjacent properties.

Our current approach is to carry out these works from two temporary grout shafts (see factsheet 7 Temporary shafts and ground treatment works). We recognise this could impact on local residents and we continue to investigate how these impacts may be minimised.

To ensure the ground treatment works are most effective, the proposed temporary shafts must be located at sites as close as possible to junctions where the new tunnels would join the existing Tube lines.

Radcot Street and Harmsworth Street are the two sites along the proposed route of the NLE where a temporary grout shaft would be best located. These sites were chosen following consultation in 2011 and further technical work to assess

engineering and building options, traffic impacts and the potential disruption for each of the sites.

The proposed sites have been selected and endorsed in consultation with Southwark and Lambeth Councils.

## 2. Location

The map illustrates the location of the proposed temporary shaft at Radcot Street and the likely construction site required to carry out the works.

## 3. Construction impacts

The first phase of work would last between two and three months and a construction site would be required of around 30-35 metres long by six metres wide for machinery, storage and general works use. The site would be screened by a protective hoarding.

After this phase, the size of the construction site would be reduced to around 15-20 metres long by six metres wide for the duration of the works (approximately 18 months) while ground treatment is carried out.

Throughout the works, Radcot Street would be closed to traffic. Pedestrian access would be retained.

During the first phase of work to excavate the shaft, it's anticipated there may be up to 10 lorry loads a day. For the rest of the period (approximately 18 months) and while ground treatment works are

carried out, traffic to and from the site would be minimal (perhaps between one and two vehicles a day).

Detailed traffic assessments are still under way, however early indications suggest that up to 15 car parking spaces could be temporarily suspended at Radcot Street.

There may also be the occasional requirement for additional spaces on Ravensdon Street to allow access for the larger vehicles required to deliver one-off pieces of engineering equipment. We would work with the local authority to find alternative parking options.

A full environmental statement is being prepared which will include detailed analysis of the temporary impacts during construction including noise and air pollution, traffic movements, impacts on trees and other disruption to local residents. We will minimise these impacts as far as practicable by working closely with the local authority and residents.

We will be required to adhere to a strict code of construction practice which will be agreed with the local authorities and include provisions on construction noise, vibration, dust, dirt on highways, working hours and noise limits.

The detail of the code has yet to be defined but normal working hours are likely to be between 08:00 and 18:00 on weekdays, and between

08:00 and 13:00 on Saturdays.

Working at other times would be by exception, but this might include working when the Tube is not running when it is absolutely necessary to do so.

#### **4. Permanent impacts**

On completion of works, the site would be restored to its original state. There would be no permanent impacts.

#### **5. Compensation, blight and hardship**

Owners of land directly affected by construction or operation of the NLE may be entitled to claim compensation. Entitlement to compensation is governed by legislation known as the Compensation Code. In some cases, landowners whose property is directly blighted by the prospect of the NLE may be entitled to require their property to be acquired from them early. Further information both on the Code and on blight is available at [www.communities.gov.uk](http://www.communities.gov.uk)

The construction of the NLE will cause noise and vibration in some areas. This will be controlled as far as possible by implementing measures to limit noise and vibration on the construction site itself. Levels will be regulated through the code of construction practice agreed with the relevant local authorities.



However, there may be circumstances in which noise impacts arise which need to be alleviated further. For those who may be affected by this, TfL will have a Noise and Vibration Policy in place. This will cover aspects such as potential mitigation measures (such as secondary glazing) or in certain circumstances an offer of re-housing on a temporary basis where noise thresholds are likely to be reached for extended periods.

TfL is also developing a Hardship Policy where owners of eligible properties who have a compelling reason to sell their property and are unable to do so owing to the NLE, could have their property purchased by TfL. These policies will be published on the NLE website as soon as they are available.

## 6. What's next

Feedback from this consultation will be considered before an application is submitted to Government in spring 2013 for permission to build and operate the extension.

We will also write to the owners and occupiers of properties directly affected by the construction of the NLE.

Subject to permission being granted, a contractor would be appointed to carry out the works.

We and our contractors will engage with local residents and businesses throughout the proposed building works. This could include establishing community liaison groups, providing newsletter updates and holding drop-in and feedback sessions. We'd welcome any other ideas from local residents on how they would like to be kept informed during this period.

Work to build the extension and new stations could start by 2015.

## 7. Have your say

This consultation gives you the opportunity to comment before we submit our application for the Transport and Works Act Order needed to start construction. Visit [tfl.gov.uk/nle](http://tfl.gov.uk/nle) to leave a comment or complete the feedback form. Alternatively, if you wish to receive a paper version of the feedback form please call **0843 222 1234** or email **[nle@tfl.gov.uk](mailto:nle@tfl.gov.uk)** and we can arrange for one to be posted to you.

The consultation period will close at 17:00 on 16 December 2012.

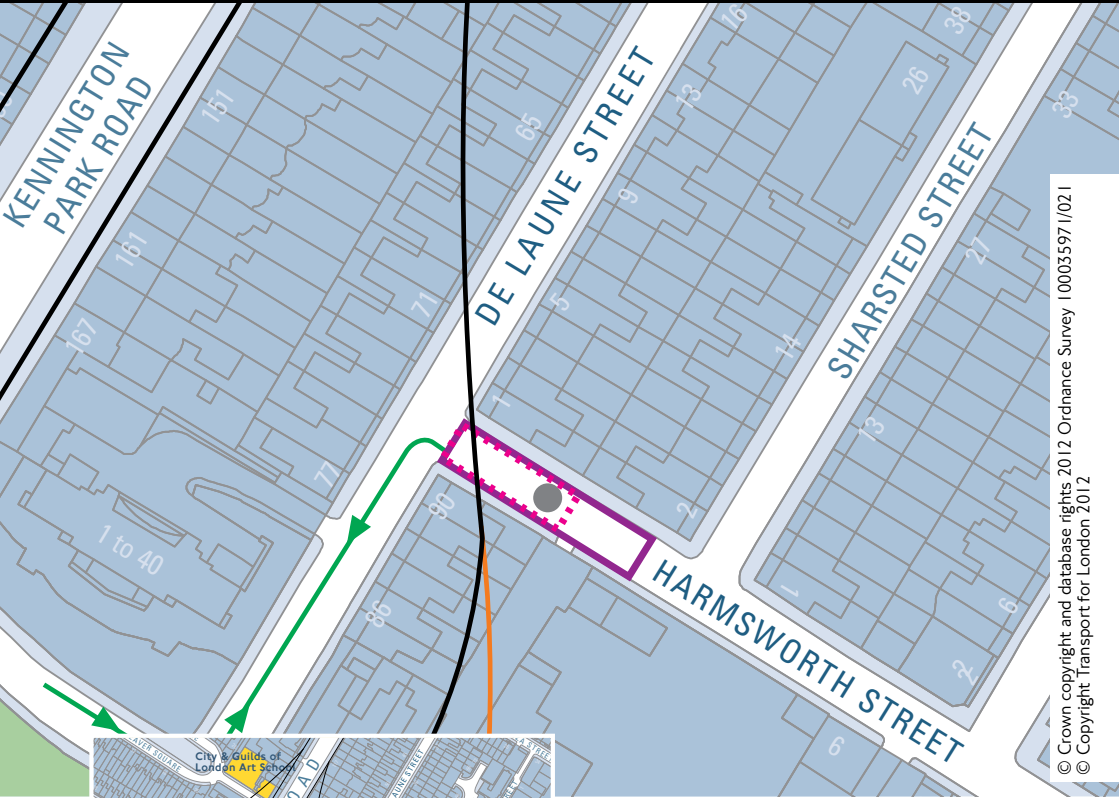
## 8. Further information

More information about key sites, a consultation feedback form and other details about the scheme can be found at **[tfl.gov.uk/nle](http://tfl.gov.uk/nle)**

To receive this document in large print, audio or another language, please call **0800 298 3009**.

# Northern line extension

## Factsheet 2: Temporary shaft site at Harmsworth Street



### Key

- Northern line
- Proposed Northern line extension
- Construction traffic access
- Construction site perimeter - first 2-3 months
- ▬ Construction site perimeter during grout treatment
- Shaft

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## 1. Background

To build the Northern line extension (NLE) the new tunnels would be connected to the existing ones along the line, which are approximately 300m from Kennington station.

To build these connections (known as step plate junctions) it is anticipated that as the tunnel work is progressing there will be a need for ground treatment works to stabilise the ground, and reduce ground movements and the risk of settlement damage on adjacent properties (see factsheet 7 Temporary shafts and ground treatment works). Our current approach is to carry out these works from two temporary grout shafts. We recognise this could impact on local residents and we continue to investigate how these impacts may be minimised.

To ensure the ground treatment works are most effective, the proposed temporary shafts must be located at sites as close as possible to the junctions where the new tunnels would join the existing Tube lines.

Harmsworth Street and Radcot Street are the two sites along the proposed route of the NLE where a temporary grout shaft would be best located. These sites were chosen following a consultation in 2011 and further technical work to assess engineering and building options,

traffic impacts and the potential disruption for each of the sites.

The proposed sites have been selected and endorsed in consultation with Southwark and Lambeth Councils.

## 2. Location

The map illustrates the location of the proposed temporary shaft at Harmsworth Street and the likely construction site required to carry out the works.

## 3. Construction impacts

The first phase of work would last between two and three months and a construction site would be required of around 30-35 metres long by six metres wide for machinery, storage and general works use. The site would be screened by a protective hoarding.

After this initial phase, the size of the construction site would be reduced to around 15-20 metres long by six metres wide for the duration of the works (approximately 18 months) while ground treatment is carried out.

Throughout the works, Harmsworth Street would be closed to traffic and access to the construction site will be via De Laune Street. Pedestrian access would be retained.

During the first phase of work to excavate the shaft, it's anticipated there maybe up to 10 lorry loads a day. For the rest of the period

(approximately 18 months) and while ground treatment is carried out, traffic to and from the site would be minimal (perhaps between one and two vehicles a day).

Detailed traffic assessments are still under way, however early indications suggest that up to 15 car parking spaces could be temporarily suspended at Harmsworth Street. We would work with the local authority to find alternative parking options.

A full environmental statement is being prepared which will include detailed analysis of the temporary impacts during construction including noise and air pollution, traffic movements, impacts on trees and other disruption to local residents. We will minimise these impacts as far as practicable by working closely with the local authority and residents.

We will be required to adhere to a strict code of construction practice which will be agreed with the local authorities and include provisions on construction noise, vibration, dust, dirt on highways, working hours and noise limits.

The detail of the code has yet to be defined but normal working hours are likely to be between 08:00 and 18:00 on weekdays, and between 08:00 and 13:00 on Saturdays.

Working at other times would

be by exception, but this might include working at times the Tube is not running when it is absolutely necessary to do so.

#### **4. Permanent impacts**

On completion of the works, the site would be restored to its original state. There would be no permanent impacts.

#### **5. Compensation, blight and hardship**

Owners of land directly affected by construction or operation of the NLE may be entitled to claim compensation. Entitlement to compensation is governed by legislation known as the Compensation Code. In some cases, landowners whose property is directly blighted by the prospect of the NLE may be entitled to require their property to be acquired from them early. Further information both on the code and on blight is available at [www.communities.gov.uk](http://www.communities.gov.uk)

The construction of the NLE will cause noise and vibration in some areas. This will be controlled as far as possible by implementing measures to limit noise and vibration on the construction site itself. Levels will be regulated through the code of construction practice agreed with the relevant local authorities.

However, there may be

circumstances in which noise impacts arise which need to be alleviated further. For those who may be affected by this, TfL will have a Noise and Vibration Policy in place. This will cover aspects such as potential mitigation measures (such as secondary glazing) or in certain circumstances an offer of re-housing on a temporary basis where noise thresholds are likely to be reached for extended periods.

TfL is also developing a Hardship Policy where owners of eligible properties who have a compelling reason to sell their property and are unable to do so owing to the NLE, could have their property purchased by TfL. These policies will be published on the NLE website as soon as they are available.

## 6. What's next

Feedback from this consultation will be considered before an application is submitted in spring 2013 to Government for permission to build and operate the extension.

We will also write to the owners and occupiers of properties directly affected by the construction of the NLE.

Subject to permission being granted, a contractor would be appointed to carry out the works. We and our contractors will engage with local residents and businesses

throughout the proposed building works. This could include establishing community liaison groups, providing newsletter updates and holding drop-in information and feedback sessions. We'd welcome any other ideas from local residents on how they would like to be kept informed and engaged during this period.

Work to build the extension and new stations could start by 2015.

## 7. Have your say

This consultation gives you the opportunity to comment before we submit our application for the Transport and Works Act Order needed to start construction. Visit [tfl.gov.uk/nle](http://tfl.gov.uk/nle) to leave a comment or complete the feedback form. Alternatively, if you wish to receive a paper version of the feedback form please call **0843 222 1234** or email [nle@tfl.gov.uk](mailto:nle@tfl.gov.uk) and we can arrange for one to be posted to you. The consultation period will close at 17:00 on 16 December 2012.

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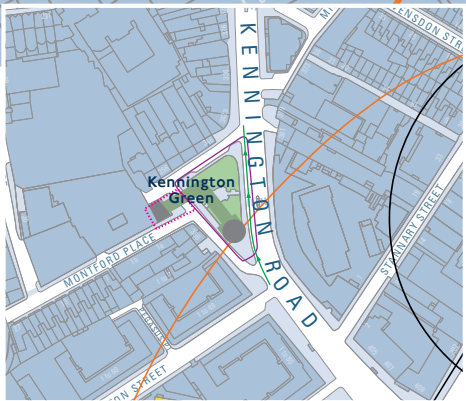
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# Northern line extension

## Factsheet 3: Permanent shaft at Kennington Green



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### Key

- Northern line
- Proposed Northern line extension
- Construction traffic access
- Construction site perimeter for shaft
- Construction site perimeter for head house (3-4 months)
- Passageway (underground)



## 1. Background

Permanent shafts will be needed to allow air in and out of the underground tunnels, help cool the Tube, extract smoke in the unlikely event of a fire and provide emergency access.

The shafts would need to be constructed as close as is practicable to the junction where the existing and new railway will meet. They must also be directly above the tunnels to allow for the removal of the machines used to dig them.

Following design and technical appraisals, Kennington Green and Kennington Park were identified as optimum locations for the permanent shafts.

The shaft at Kennington Green is underground but requires a structure on the surface, known as a head house, to provide access and to house ventilation fans and other equipment. The shaft itself would be constructed above the tunnel. However, as it's not essential for the head house to be situated directly above the shaft, in a public consultation in the summer of 2011 we asked local people where they would prefer it to be. There was an overwhelming preference for locating it in the grounds of the Beefeater distillery. This option has been endorsed by Lambeth Council

and we have worked closely with them on the proposed design and construction plans.

The proposal is for the construction of a shaft measuring approximately 13.5m in diameter and 25m deep within the Green. The top of the shaft would be flush to the ground and covered by an access hatch (3m x 3.4m) using materials in keeping with the surroundings (such as grass, stone and other materials). The head house would be built within the Beefeater Distillery and integrated with its existing structures. A link passage would be built beneath the Green, between the shaft and the head house.

## 2. Location

The map shows the proposed location of the shaft, head house, and underground passageway and the likely construction site required to carry out the works.

## 3. Design

We have engaged with local residents, Lambeth Council and heritage, conservation and design experts to develop ideas for how Kennington Green could be restored and improved once the shaft and head house have been built.

The image below reflects features local residents have told us are important to them and we'd like

your views before we develop more detailed designs.

The new design for the Green could create a simple and high quality space, providing an attractive setting to the surrounding housing and buildings. The green space could be maximised and trees planted to provide a buffer from traffic noise and reinforce the tree lined nature of Kennington Road. The Green's boundary could be defined and enclosed with a simple post and chain fencing.

Seating could be provided at the southern tip, with the opportunity of installing public art to reflect the heritage of the area.

The boundary roads would offer convenient pedestrian access. A crossing at the entrances to these roads would make it clear to drivers that these are residential roads.

#### 4. Construction impacts

The map shows the construction site that is likely to be required to build the shaft, head house and



Illustration shows potential design for Kennington Green



passageways. The site includes the entire Green and would be required for approximately two years. For the last 3-4 months of building the site would be extended across the road to the distillery to allow for the construction of the head house.

During this time there would be construction activity around the site, including additional traffic to remove excavated material and deliver site supplies. Over a two to three month period, around 40 lorries a day could be required to remove excavated

matter from the site. During the rest of the construction period, there would be one-off deliveries of large equipment and building supplies. Excavated material and supplies delivered to the site would be limited to those required to construct the shaft, head house, passageway and the tunnel to the junction with the existing and new tunnels.

Detailed traffic assessments are still under way but we would work to keep traffic obstruction to a minimum on Kennington Road. However, there could be an impact on on-street parking in the area during construction. We will work closely with the local authority to identify alternative parking provision if required.

A full environmental statement is being prepared which will include detailed analysis of the temporary impacts during construction, including noise and air pollution, traffic movements, impacts on trees and other disruption to local residents. Working closely with the local authority and residents, we will keep these to a minimum.

We will be required to adhere to a strict code of construction practice which will be agreed with the local authorities. It will include provisions on construction noise, vibration, dust, dirt on highways, working hours and noise limits.



The detail of the code has yet to be defined but normal working hours are likely to be between 08:00 and 18:00 on weekdays, and between 08:00 and 13:00 on Saturdays. It is necessary for the tunnelling work to be a continuous process and 24-hour working will be required. TfL will endeavour to ensure that work at surface level outside normal working hours and likely to cause disturbance is kept to a minimum.

Working at other times for work other than tunnelling would be by exception and only where it is absolutely necessary to do so.

## **5. Permanent impacts**

Once construction is complete the Green would be restored and improved. With the exception of access doors and ventilation grilles, it's unlikely the head house would be seen from the Green itself. We will continue to work with Lambeth Council on the design of the head house. Access to the shaft would occasionally be required for maintenance of the fans.

While every effort will be taken to minimise the impacts, some trees could be lost as a result of the works and this will be assessed in the environmental statement. Plans for reinstatement will be agreed with the local authority.

## **6. Compensation, blight and hardship**

Owners of land directly affected by construction or operation of the NLE may be entitled to claim compensation. Entitlement to compensation is governed by legislation known as the Compensation Code. In some cases, landowners whose property is directly blighted by the prospect of the NLE may be entitled to require their property to be acquired from them early. Further information both on the code and on blight is available at [www.communities.gov.uk](http://www.communities.gov.uk)

The construction of the NLE will cause noise and vibration in some areas. This will be controlled as far as possible by implementing measures to limit noise and vibration on the construction site itself. Levels will be regulated through the code of construction practice agreed with the relevant local authorities. However, there may be circumstances in which noise impacts arise which need to be alleviated further.

For those who may be affected by this, TfL will have a Noise and Vibration Policy in place. This will cover aspects such as potential mitigation measures (such as secondary glazing) or in certain circumstances an offer of re-

housing on a temporary basis where noise thresholds are likely to be reached for extended periods. TfL is also developing a Hardship Policy where owners of eligible properties who have a compelling reason to sell their property and are unable to do so owing to the NLE, could have their property purchased by TfL. These policies will be published on the NLE website as soon as they are available

## 7. What's next?

Feedback from this consultation will be considered before an application is submitted to Government in spring 2013 for permission to build and operate the extension.

We will also write to the owners and occupiers of properties that may be directly affected by the construction of the NLE.

Subject to permission being granted, a contractor would be appointed to carry out the works. Together with our contractor, we will engage with local residents and businesses throughout the proposed building works. This could include establishing community liaison groups, providing newsletter updates and holding drop-in and feedback sessions. We'd welcome other ideas from local residents about

how they would like to be kept informed during this period.

Work to build the extension and new stations could start by 2015.

## 8. Have your say

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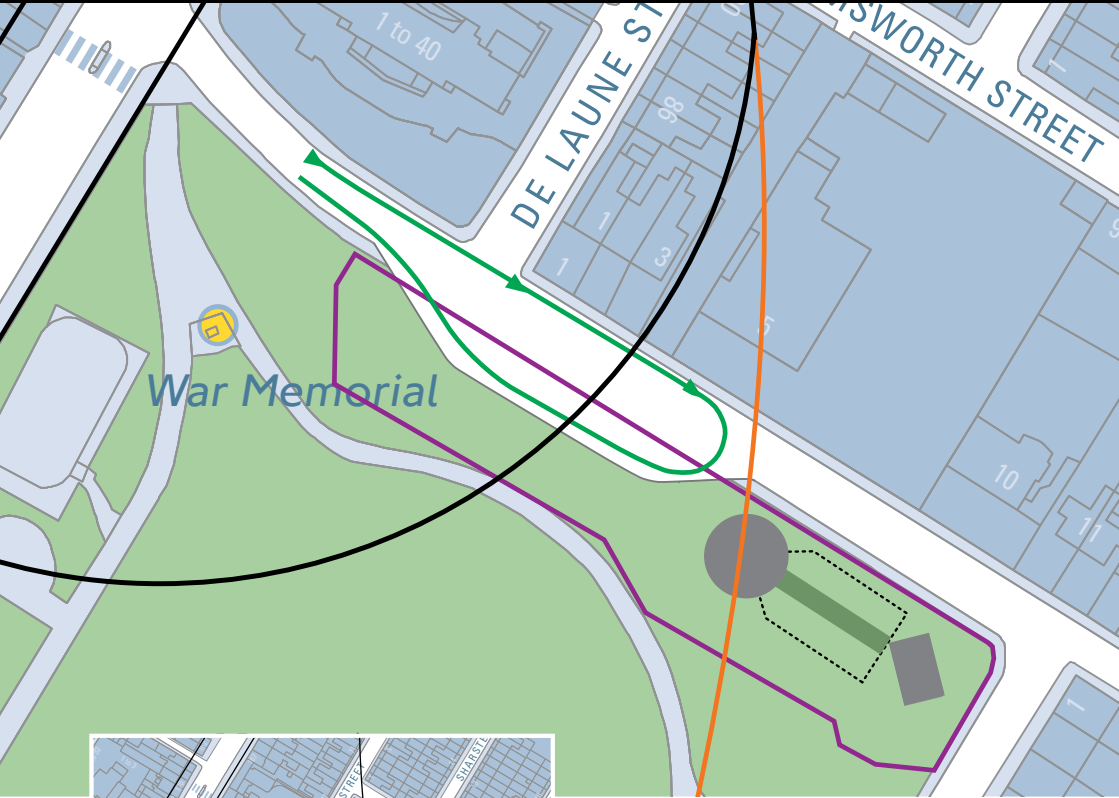
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# Northern line extension

## Factsheet 4: Permanent shaft at Kennington Park



### Key

- Northern line
- Proposed Northern line extension
- Construction traffic access
- Construction site perimeter
- - - Electricity substation
- Shaft
- Old lodge
- Passageway underground



## 1. Introduction

Permanent shafts are needed to allow air in and out of the underground tunnels help cool the Tube, extract smoke in the unlikely event of a fire and provide emergency access.

The shafts would need to be constructed as close as is practicable to the junction where the existing and new railway will meet. They must also be directly above the tunnels to allow for the removal of the machines used to dig the tunnels to the surface.

Following design and technical appraisals, Kennington Park and Kennington Green were identified as optimum locations for the permanent shafts.

The shaft at Kennington Park is underground but requires a structure on the surface, known as a head house, to provide access and to house ventilation fans and other equipment. The shaft itself would be constructed above the tunnel. However, as it's not essential for the head house to be situated directly above the shaft, in a public consultation in the summer of 2011 we asked local people where they would prefer it to be. There was an overwhelming preference for locating it at the Old Lodge within Kennington Park. This option has been endorsed by Lambeth Council

and we have worked closely with them on the proposed design and construction plans.

The proposal is for the construction of a shaft measuring approximately 13.5m in diameter and 25m deep. The top of the shaft will be flush to the ground, covered with materials in keeping with the surroundings (including grass, stone and other materials). The head house would be built on the site of the Old Lodge, which would be demolished.

Between the head house and the shaft an underground electricity substation to power the trains and a passage to link the shaft and the head house is proposed. These will be beneath the surface and measure approximately 17m long by 8m wide and 17m deep.

## 2. Location

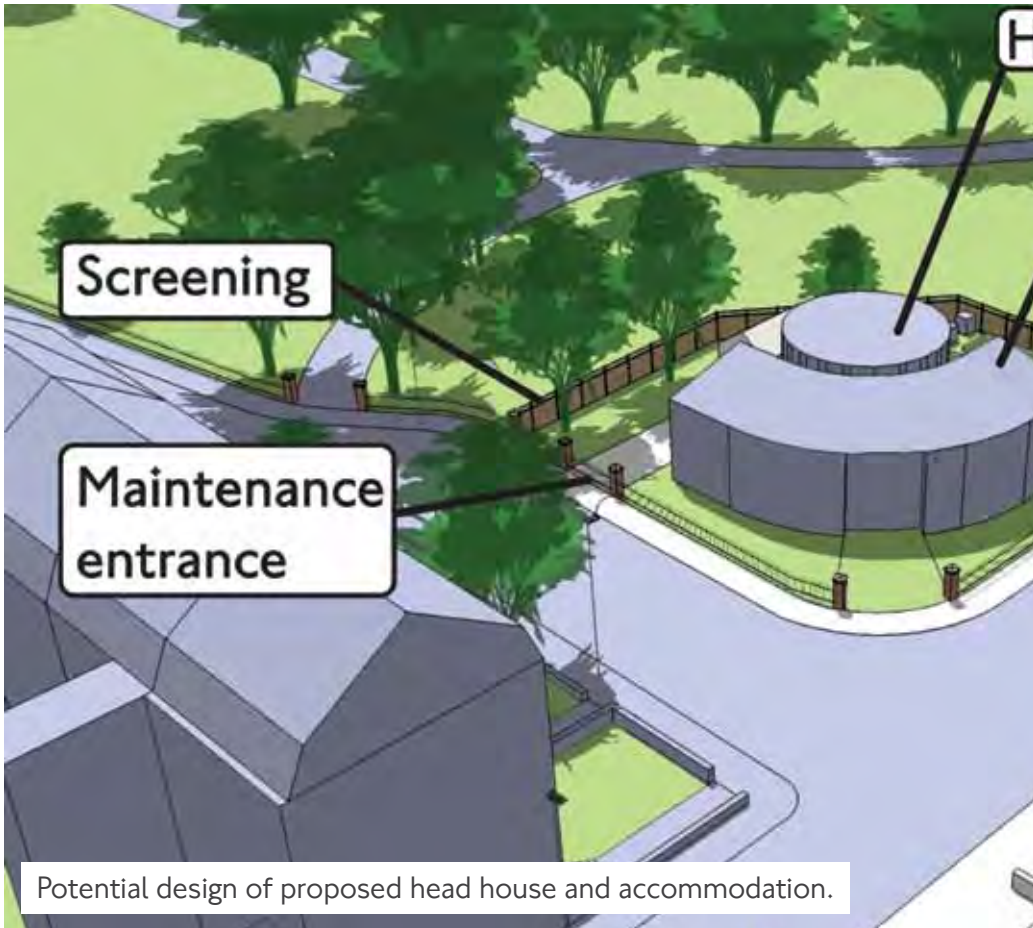
The map shows the proposed location of the shaft, head house and underground passageway and the likely construction site required to carry out the works.

### 3. Design

We have engaged with local resident groups, Lambeth Council and heritage, conservation and design experts to develop ideas for how Kennington Park could be restored once the shaft and head house have been built.

The image below reflects the features local residents groups told us were important to them. We'd like your views before more detailed designs are developed.

The head house would be located where the lodge is, in the north-west corner of the park. The building wrapped around it could be designed to be used for activities related to the park. It could be surrounded by a screening of trees and plants to ensure it is in keeping with the rest of the park. The materials used could be timber, brick and glazing which would all be appropriate to a park setting.



#### 4. Construction impacts

The construction site is likely to be required for approximately two years.

We will engage with the existing users of the lodge and the local authority to discuss how the works are likely to affect them.

During this time, there would be construction activity around the site, including traffic to remove excavated material and deliver site supplies. Over a two to three

month period, around 40 lorry loads a day could be required to remove excavated matter from the site.

During the rest of the construction period, there would be one-off deliveries of equipment and building supplies. Excavated material and supplies delivered to the site would be limited to those required to construct the shaft, head house, substation, passageway and the tunnel to the junction with the existing and new tunnels.

Access to the site would be from Kennington Park Road. To keep traffic obstruction to a minimum and avoid the need for construction traffic to park on the road, the site will be designed so as lorries can turn on the site. There could also be some impact on the provision of on-street parking in the area during the construction phase. We would work closely with the local authority to identify alternative parking provision should this be required.

A full environmental statement is being prepared which will include detailed analysis of the temporary impacts during construction, including noise and air pollution, traffic movements, impacts on trees and other disruption to local residents. Working closely with the local authority and residents, we will keep these to a minimum.

We will be required to adhere to a strict code of construction practice



which will be agreed with the local authority. It will include provisions on construction noise, vibration, dust, dirt on highways, working hours and noise limits.

The detail of the code has yet to be defined but normal working hours are likely to be between 08:00 and 18:00 on weekdays, and between 08:00 and 13:00 on Saturdays. It is necessary for the tunnelling work to be a continuous process and 24-hour working will be required. TfL will endeavour to ensure that work at surface level outside normal working hours and likely to cause disturbance is kept to a minimum.

Working at other times for work other than tunnelling would be by exception and only where it is absolutely necessary to do so.

## **5. Permanent impacts**

Once work is complete, the park area used for the construction site will be fully restored and we will work closely with local residents and Lambeth Council to agree a restoration plan. This is likely to be subject to a separate consultation by Lambeth Council as part of the planning approvals for the reinstatement of the park.

The head house will be visible to park users and from the roadside on the corner of Kennington Park Road and St Agnes Place.

Some trees may be lost as a result of

the works and this will be assessed in the environmental statement. Plans for reinstatement will be agreed with the local authority.

## **6. Compensation, blight and hardship**

Owners of land directly affected by construction or operation of the NLE may be entitled to claim compensation. Entitlement to compensation is governed by legislation known as the Compensation Code. In some cases, landowners whose property is directly blighted by the prospect of the NLE may be entitled to require their property to be acquired from them early. Further information both on the code and on blight is available at [www.communities.gov.uk](http://www.communities.gov.uk).

The construction of the NLE would cause noise and vibration in some areas. This would be controlled as far as possible by implementing measures to limit noise and vibration on the construction site itself. Levels will be regulated through the code of construction practice agreed with the relevant local authorities.

However, there may be circumstances in which noise impacts arise which need to be alleviated further. For those who may be affected by this, TfL will have a Noise and Vibration Policy in place. This will cover aspects such as potential mitigation measures



(such as secondary glazing) or in certain circumstances an offer of re-housing on a temporary basis where noise thresholds are likely to be reached for extended periods.

TfL is also developing a Hardship Policy where owners of eligible properties who have a compelling reason to sell their property and are unable to do so owing to the NLE, could have their property purchased by TfL. These policies will be published on the NLE website as soon as they are available.

## **7. What's next?**

Feedback from this consultation will be considered before an application is submitted to Government in spring 2013 for permission to build and operate the extension.

We will also write to the owners and occupiers of properties that may be directly affected by the construction of the NLE.

Subject to permission being granted, a contractor would be appointed to carry out the works. Together with our contractors, we would engage with local residents and businesses throughout the proposed building works. This could include establishing community liaison groups, providing newsletter updates and holding drop-in and feedback sessions. We'd welcome other ideas from local residents about how they would like to be

kept informed and engaged during this period.

Work to build the extension and new stations could start by 2015.

## **8. Have your say**

This consultation gives you the opportunity to comment before we submit our application for the Transport and Works Act Order needed to start construction. Visit [tfl.gov.uk/nle](http://tfl.gov.uk/nle) to leave a comment or complete the feedback form. Alternatively, if you wish to receive a paper version of the feedback form please call **0843 222 1234** or email **[nle@tfl.gov.uk](mailto:nle@tfl.gov.uk)** to request one be sent to you.

The consultation period will close at 17:00 on 16 December 2012.

## **9. Further information**

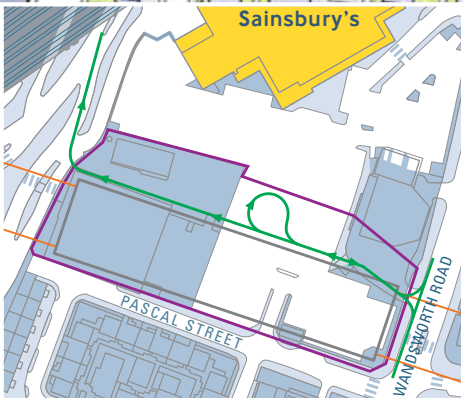
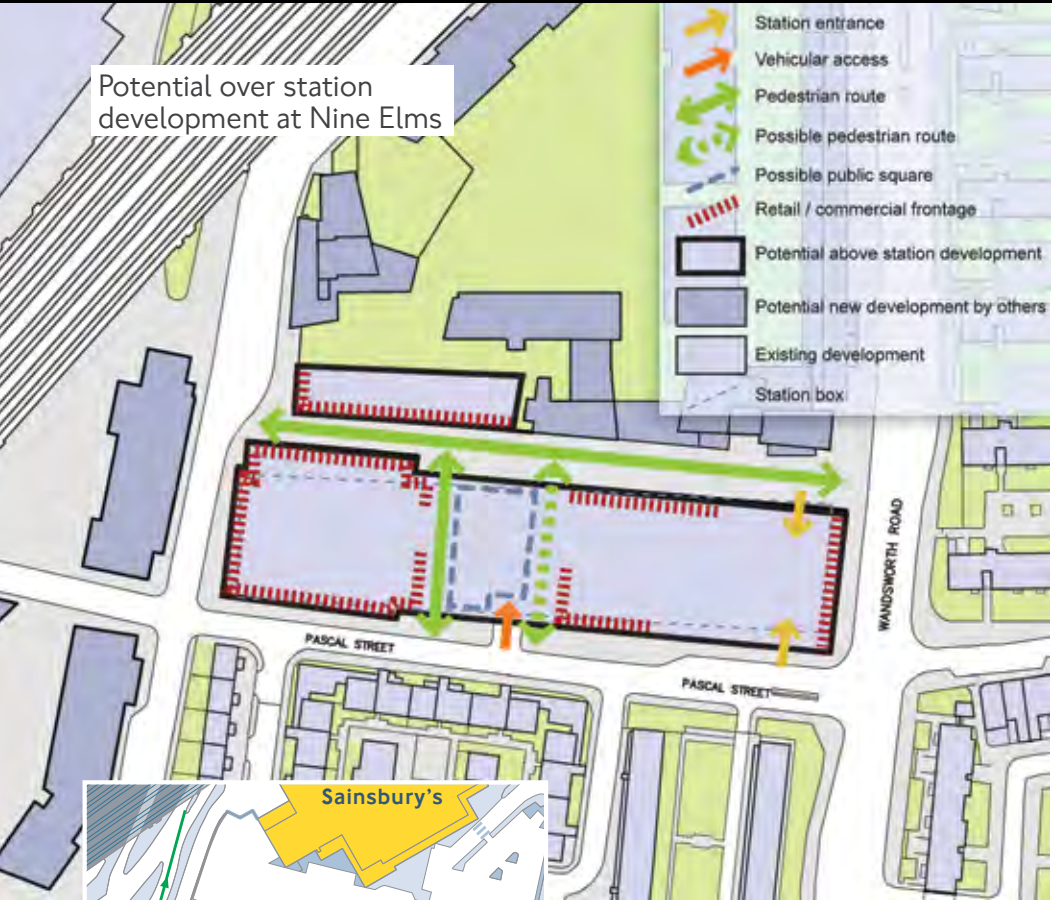
Go to [tfl.gov.uk/nle](http://tfl.gov.uk/nle) for more information about key sites, a consultation feedback form and other details about the scheme.

To receive this document in large print, audio or another language, please call 0800 298 3009.

# Northern line extension

## Factsheet 5: New station at Nine Elms

Potential over station development at Nine Elms



### Key

- Proposed Northern line extension
- Construction traffic access
- Construction site perimeter
- Proposed station box

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## 1. Background

As part of the Northern line extension (NLE) a new Tube station is proposed at Nine Elms. The station would serve the development sites on the eastern side of the Nine Elms Opportunity Area as well as the existing local communities.

The new station would put thousands more people within easy walking distance of the Tube network and reduce journey times to the West End and the City to less than 15 minutes. It would significantly increase transport accessibility, providing a new interchange with local bus services and an alternative to the existing, but busy, station and interchange at Vauxhall.

The station entrance would be located towards the corner of Sainsbury's' car park, at the corner of Wandsworth Road and Pascal Street. It would provide access to those roads as well as to new residential and office developments in the Nine Elms Opportunity Area.

## 2. Location and design

The station would be integrated with the surrounding local area. It would benefit from:

- Entrances at the corner of Wandsworth Road and Pascal Street
- A lift providing step-free access to trains
- A ground-level ticket hall

- Three escalators giving access to two spacious platforms
- Links to pedestrian and cycle networks proposed for the area, including through the railway arches to the north

The diagram shows an outline of potential future development over the station.

## 3. Construction impacts

The map shows the likely construction site that would be required for up to four years to build the station. Access to the site would be via Wandsworth Road to the south and from the Covent Garden Market Authority's private road to the north.

Detailed traffic assessments are under way. However, there would be significant construction activity around the site. During the peak of the works (a six-month period early on in the construction) around 80 lorries a day could enter and exit the site to remove excavated material and deliver supplies. For the remainder of the time, there could be between two and 10 lorries a day, depending on the phase of activity.

A full environmental statement is being prepared. This will include a detailed analysis of temporary impacts during construction including noise and air pollution, traffic movements, effects on trees and other disruption to local residents.

We would minimise disruption as far as practicable through working closely with the local authority, residents and others. For example, we are working with the Port of London Authority and others to ensure that as much of the construction material as practicable could be taken to and from the site by river to minimise deliveries by lorry.

We will be required to adhere to a strict code of construction practice which will be agreed with the local authorities. It will include provisions on construction noise, vibration, dust, dirt on highways, working hours and noise limits.

The detail of the code has yet to be defined but normal working hours are likely to be from 08:00 to 18:00 on weekdays (Mon-Fri excluding Bank Holidays) and 0800 to 1300 on Saturdays. Where feasible, operations likely to cause disturbance and/or disruption will be limited to these hours. Working at other times would be by exception, but this might include work in connection with tunnelling, the operation of certain types of equipment (e.g. for safety reasons) and non disruptive work.

Working outside these hours would be by exception, but it may include times when the Underground network is not running or where it is absolutely necessary to do so.

#### **4. Permanent impacts**

The new station would provide an attractive and safe place, and form part of an easy-to-follow north/south route between the river Thames and Nine Elms.

#### **5. Compensation, blight and hardship**

Owners of land directly affected by construction or operation of the NLE may be entitled to claim compensation. Entitlement to compensation is governed by legislation known as the Compensation Code. In some cases, landowners whose property is directly blighted by the prospect of the NLE may be entitled to require their property to be acquired from them early. Further information both on the code and on blight is available at [www.communities.gov.uk](http://www.communities.gov.uk).

The construction of the NLE would cause noise and vibration in some areas. This would be controlled as far as possible by implementing measures to limit noise and vibration on the construction site itself. Levels will be regulated through the code of construction practice agreed with the relevant local authorities.

However, there may be circumstances in which noise impacts arise which need to be alleviated further. For those who

may be affected by this, TfL will have a Noise and Vibration Policy in place. This will cover aspects such as potential mitigation measures (such as secondary glazing) or in certain circumstances an offer of re-housing on a temporary basis where noise thresholds are likely to be reached for extended periods. TfL is also developing a Hardship Policy where owners of eligible properties who have a compelling reason to sell their property and are unable to do so owing to the NLE, could have their property purchased by TfL. These policies will be published on the NLE website as soon as they are available.

## 6. What's next

Feedback from this consultation will be considered before an application is submitted to Government in spring 2013 for permission to build and operate the extension.

We will write to the owners and occupiers of properties that may be directly affected by construction of the NLE.

Subject to permission being granted, a contractor would be appointed to carry out the works.

Along with our contractors we will engage with local residents and businesses throughout the proposed building works. This

could range from establishing community liaison groups, and providing newsletter updates to holding drop-in information and feedback sessions. We'd also welcome any other ideas from local residents on how they would like to be kept informed during this period.

Work to build the extension and new station could start by 2015.

## 7. Have your say

This consultation gives you the opportunity to comment before we submit our application for the Transport and Works Act Order needed to start construction. Visit [tfl.gov.uk/nle](http://tfl.gov.uk/nle) to leave a comment or complete the feedback form. Alternatively, if you wish to receive a paper version of the feedback form, please call **0843 222 1234** or email [nle@tfl.gov.uk](mailto:nle@tfl.gov.uk)

The consultation period will close at 17:00 on 16 December 2012.

## 8. Further information

Further information about key sites, a consultation feedback form and other details can be found at [tfl.gov.uk/nle](http://tfl.gov.uk/nle)

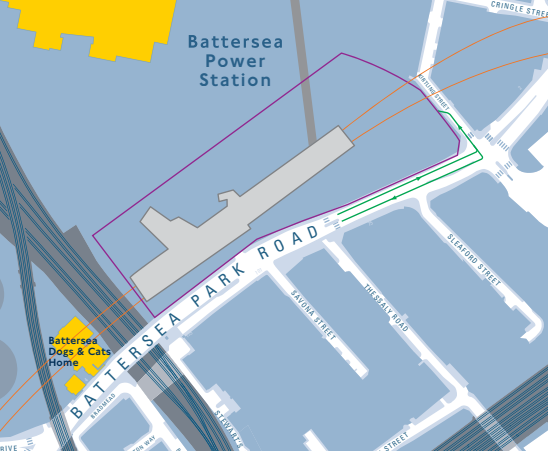
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# Northern line extension

## Factsheet 6: New station at Battersea Power Station



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### Key

- Proposed Northern line extension
- Construction traffic access
- Construction site perimeter
- Proposed station box
- Temporary conveyor belt to remove excavated material



## 1. Background

A proposed new Tube station at Battersea would serve the office, shopping and residential developments proposed for the Battersea Power Station site. It would be fully integrated with the proposed new development and provide easy access from Battersea Park Road and local bus services.

It would significantly improve access to public transport in the area, putting thousands more people within easy walking distance of the Tube network and reducing journey times to the West End and City to less than 15 minutes.

Battersea would become the new southern terminus of the Charing Cross branch of the Northern line.

## 2. Location and design

The station would provide:

- Escalator access to a spacious below-ground ticket hall
- Step-free access to trains via lifts

- Escalator access from ticket hall to platforms
- Two spacious platforms
- Cycle parking

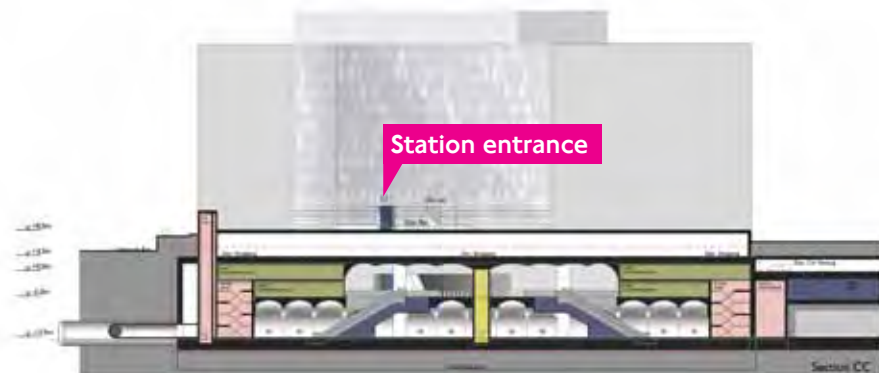
## 3. Construction impacts

Access to the construction site is currently proposed via Kirtling Street from Battersea Park Road.

The station would take approximately four years to build.

Detailed traffic assessments are still under way. However, there would be significant construction activity around the site. During the peak of construction (around a six-month period at the start), there could be around 70 lorries a day entering and exiting the site. During the rest of the construction period, there could be between two and 15 lorries a day.

The main tunnels for the NLE would be constructed from the power station site towards Kennington using tunnelling



Design proposals for the new station at Battersea

machines. It is proposed that excavated material from tunnel boring and construction of the station would be removed from the jetty at the power station by barge.

A full environmental statement is being prepared which will include detailed analysis of the temporary impacts during construction, including noise and air pollution, traffic movements, impacts on trees and other disruption to local residents. Working closely with the local authority and residents, we will keep these to a minimum.

We will be required to adhere to a strict code of construction practice which will be agreed with the local authorities. It will include provisions on construction noise, vibration, dust, dirt on highways, working hours and noise limits.

The detail of the code has yet to be defined but normal working hours are likely to be between 08:00 and 1800 on weekdays, and between 08:00 and 13:00 on Saturdays.

Twenty-four hour working would be required as tunnelling is a continuous process. We would ensure that work outside normal working hours that is likely to cause disturbance is kept to a minimum.

#### **4. Permanent impacts**

The station would be located within the wider planned development of the Battersea Power Station site.

#### **5. Compensation, blight and hardship**

Owners of land directly affected by construction or operation of the NLE may be entitled to claim compensation. Entitlement to compensation is governed by legislation known as the Compensation Code. In some cases, landowners whose property is directly blighted by the prospect of the NLE may be entitled to require their property to be acquired from them early. Further information both on the code and on blight is available at [www.communities.gov.uk](http://www.communities.gov.uk).

The construction of the NLE would cause noise and vibration in some areas. This would be controlled as far as possible by implementing measures to limit noise and vibration on the construction site itself. Levels will be regulated through the code of construction practice agreed with the relevant local authorities.

However, there may be circumstances in which noise impacts arise which need to be alleviated further. For those who may be affected by this, TfL would have a Noise and Vibration Policy in place. This would cover aspects such as potential mitigation measures (such as secondary glazing) or in certain circumstances an offer of re-housing on a



temporary basis where noise thresholds are likely to be reached for extended periods.

TfL is also developing a Hardship Policy where owners of eligible properties who have a compelling reason to sell their property and are unable to do so due to the NLE, could have their property purchased by TfL. These policies will be published on the [tfl.gov.uk/nle](http://tfl.gov.uk/nle) website as soon as they are available.

## 6. What's next?

Feedback from this consultation will be considered before an application is submitted to Government in spring 2013 for permission to build and operate the extension.

We will also be writing to the owners and occupiers of properties that may be directly affected by the construction of the NLE.

Subject to permission being granted, a contractor would be appointed to carry out the works.

Together with our contractors, we would engage with local residents and businesses throughout the proposed building works. This could include establishing

community liaison groups, providing newsletter updates and holding drop-in and feedback sessions. We'd welcome any other ideas from local residents on how they would like to be kept informed during this period.

Work to build the extension and new stations could start by 2015.

## 7. Have your say

This consultation gives you the opportunity to comment before we submit our application for the Transport and Works Act Order needed to start construction. Visit [tfl.gov.uk/nle](http://tfl.gov.uk/nle) to leave a comment or complete the feedback form. Alternatively, to receive a paper version of the feedback form please call **0843 222 1234** or email **[nle@tfl.gov.uk](mailto:nle@tfl.gov.uk)** to request one be sent to you.

The consultation period will close at 17:00 on 16 December 2012.

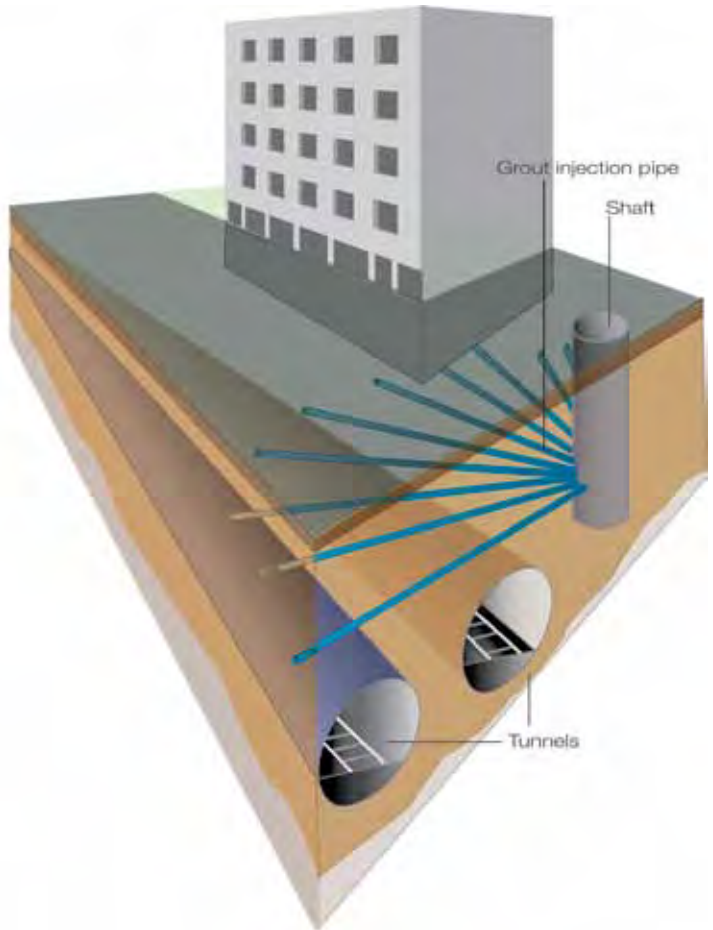
## 8. Further information

More information about key sites, a consultation feedback form and other details about the scheme can be found at [tfl.gov.uk/nle](http://tfl.gov.uk/nle)

To receive this document in large print, audio or another language, please call 0800 298 3009.

# Northern line extension

## Factsheet 7: Temporary shafts and ground treatment works



## 1. Introduction

This temporary shafts and ground treatment factsheet will explain:

- Why ground treatment is necessary
- What grout shafts are
- How grout shafts will be used on the construction of the Northern line extension

## 2. Why is ground treatment necessary?

Digging tunnels and shafts that will be required during the construction of the Northern line extension may cause small movements in the ground. This is called 'settlement'. In most cases you would not be able to see the effects of settlement, but sometimes there may be small cracks in plaster, and in a few cases doors or windows may stick. Settlement can, very rarely, affect the structure of a building.

Ground treatment works can minimise settlement and its impact on a property.

## 3. How will Transport for London minimise settlement?

We know a lot about how settlement works from projects such as the Heathrow Express railway, the Jubilee line extension, tunnels for the Docklands Light Railway, the Channel Tunnel Rail Link and the Thames Water Ring Main. We have also learned a lot about how best to minimise it.

Settlement will be minimised by the tunnelling and excavation techniques used to build the Northern line extension. For example, by using tunnelling machines that will exert a continuous pressure on the surrounding earth.

If necessary, we will also treat the ground so that it is less likely to move. The most effective means of doing this is by using 'compensation grouting'.

#### **4. What is compensation grouting?**

Compensation grouting is a well-established technique employed on tunnelling projects around the world to minimise settlement.

It works by injecting a cement-like grout into the ground to firm up the area where settlement is expected to occur. This is injected via small-diameter underground pipes which spread out from a central 'grout shaft'. This method can be employed very precisely and is an effective way of minimising settlement and damage to buildings.

#### **5. What are grout shafts?**

Grout shafts are holes in the ground from which grout can be pumped.

They will be operated from worksites of approximately 30–35m by 6m.

The worksites will be surrounded by hoardings to limit dust and noise. Much of the equipment that will be used will be located within the shafts, further limiting noise and dust.

#### **6. Where and when will grout shafts be used on the Northern line extension?**

Radcot Street and Harmsworth Street in Kennington have been identified as proposed locations for grout shafts. These will be at the point where the new tunnels for the Northern line extension will connect to the existing tunnels via junctions close to Kennington station.

#### **7. Further information**

For more information about the Northern line extension, visit [tfl.gov.uk/nle](https://tfl.gov.uk/nle)

To receive this document in large print, audio or another language, call 0800 298 3009.

# Northern line extension

## Factsheet 8: Previous consultation on the Northern line extension (NLE) and our response to issues raised

### Background

Consultations on the possible routes for the extension of the Northern line were held in the summers of 2010 and 2011. The purpose of the consultations was to get feedback and understand views on the proposed route and the locations for the stations, and temporary and permanent shafts required as part of the extension. Subsequently, we have also met with local residents and community groups on request to provide more information about the proposals and understand their concerns in more detail.

This factsheet is a summary of our response to the key issues raised during these previous consultations.

Full details are available at [tfl.gov.uk/nle](http://tfl.gov.uk/nle)

### Key issue 1

#### How the proposed route options outlined in the consultations were developed

The options for the four possible routes were developed by Treasury Holdings (the former developers of the Battersea Power Station site) and Transport for London (TfL) over an extensive period of time from the route options identified in the GLA's 2009 Vauxhall Nine Elms Battersea Opportunity Area Transport Study. Following public consultation in summer 2011, TfL undertook a detailed assessment of the various route options. This concluded that route 2 was the best option to take forward.

## Key issue 2

### **The location of the permanent ventilation and access shafts at or near Claylands Road, Kennington Green and Kennington Park**

The proposals to extend the Northern line originally included plans for three permanent shafts along the route of the extension at or near Claylands Road, Kennington Green and Kennington Park. These shafts would be required to provide ventilation for the tunnels, smoke control in the event of a fire and access for the emergency services.

The reason for locating shafts at Kennington Green and Kennington Park is that they need to be constructed as close as practicable to the junction where the existing and new railways will meet. They must also be above the tunnels to allow for the removal of the machines used to construct the tunnels themselves.

The intermediate shaft was proposed at Claylands Road because of safety requirements to position it at the midway point between Kennington and Nine Elms.

In response to concerns from residents about the proposed shaft in the Claylands Road area, a decision has been made to remove the shaft from the proposals. This follows considerable further engineering and feasibility work to review alternative options, including different ways of providing access and intervention to the tunnels at this point.

### Key issue 3

## Concerns about the construction impacts on the extension

We understand residents' concerns about potential disruption during construction and we will seek to keep this to a minimum. TfL adopts a best practice approach to managing its construction impacts based on our significant experience of delivering major transport projects across London. We will be required to adhere to a strict code of construction practice which will be agreed with the local authorities. It would include provisions on construction noise and vibration, dust, dirt on highways and working hours and noise limits.

For some construction (around Radcot Street and Harmsworth Street) we may need to temporarily close a road or divert traffic. There could also be some impact on the provision of on-street parking during the construction phase. We will work closely with the local authorities to identify alternative parking provision, should this be required.

A full environmental statement on the proposals is being prepared which will include detailed analysis of the temporary impacts during construction, including noise and air pollution, traffic movements, impacts on trees and other disruption to local residents. Working closely with the local authorities, we will seek to keep these impacts to a minimum.

Subject to permission to build the extension being granted, a contractor will be appointed to carry out the works. Together with our contractors, we will engage with local residents and businesses throughout the proposed building works. This could include establishing community liaison groups, providing newsletter updates and holding drop-in and feedback sessions. We'd welcome other ideas from local residents about how they would like to be kept informed and engaged during this period.

However, there may be circumstances in which noise impacts arise during construction which need to be alleviated further. For those who may be affected by this, TfL will work with local authorities to agree suitable mitigation measures and will put in place a Noise and Vibration Policy for the NLE. This will cover aspects

such as potential mitigation measures (such as secondary glazing) or in certain circumstances an offer of re-housing on a temporary basis where noise thresholds are likely to be reached for extended periods.

TfL is also developing a Hardship Policy where owners of eligible properties who have a compelling reason to sell their property and are unable to do so owing to the NLE could have their property purchased by TfL. These policies will be published on the NLE website as soon as they are available.

#### Key issue 4

### **Noise and vibration impacts of operating the extension**

We understand the concerns of some residents about the potential impact noise and vibration could have once the extension is operational. We take these concerns seriously and we are committed to ensuring that the proposed extension will meet levels defined in TfL's London Underground Noise and Vibration Guidance. This is at least equivalent to, and in some cases more stringent than, those of most other new underground railways in Europe, USA and Australia.

The environmental assessment will assess the future operational noise and vibration impacts of the extension. Where operational noise levels are forecast to exceed those set out in our guidelines, mitigation measures would be put in place.

#### Key issue 5

### **The impact of the NLE on Kennington station and the Northern line, and the inclusion of a possible interchange at Vauxhall**

Around 80 per cent of additional passengers as a consequence of the NLE are forecast to use the Charing Cross branch rather than the Bank branch. This will lessen the impact on Kennington station and the most crowded sections of the Northern line.

Separate to the NLE, work is already under way to upgrade the Northern line with a new signalling system by 2014, increasing capacity by 20 per cent for both branches of the line (from 20 trains per hour to 24). Looking further ahead, phase 2 of the Northern line upgrade (anticipated following completion of the Northern line extension) will further increase capacity by around 30 per cent on the Bank branch, and 15 per cent on the Charing Cross branch.



Further work is under way to assess the impacts of the NLE on the rest of the Northern line prior to our application for a Transport and Works Act Order (TWAO) for permission to build and operate the extension.

Our passenger forecasts tell us that Vauxhall station is already operating close to capacity. An interchange with the Northern line at Vauxhall would exacerbate this issue, whereas a new station at Nine Elms would provide relief.

An interchange at Vauxhall would increase demand on the Victoria line, which is already one of London's busiest lines, and would be significantly more expensive than the option we are proposing.

### Key issue 6

## **Extending the Northern line from Battersea**

Consultation responses raised some interest in the possibility of the Northern line being extended beyond Battersea as far as Clapham Junction. The proposals allow for the potential for a future extension beyond Battersea.

### Key issue 7

## **The decision to propose a Tube over other transport solutions**

Some consultation responses questioned whether a Tube extension is the right solution for the future transport needs of the area. The extension of the Northern line is considered essential to support the transformation of Vauxhall Nine Elms and Battersea, a designated regeneration area on the South bank, and part of wider plans to improve public transport in the area. Such an extension is the only solution that can realistically provide the required transport capacity and connectivity to achieve the Mayor's vision for development of the area of around 16,000 new homes and 20,000–25,000 jobs. This vision is detailed in the Vauxhall Nine Elms Battersea Opportunity Area Planning Framework, the approved planning policy for the area.

The Northern line extension is an integral part of wider plans to improve transport in the area. These include passenger piers at Vauxhall and Battersea Power Station, pedestrian and cycle walkways, and Barclays Cycle Hire. There will also be improvements made to the existing transport infrastructure, such as renovations of Battersea Park Station.

## Key issue 8

### The 2010 consultation and consultation methodology

Some concerns were raised about the first phase of public consultation conducted in summer 2010 by Treasury Holdings, who were working for the former owners of Battersea Power Station on the initial development of the NLE scheme. Some people in the area said they had not been made aware of the first stage of consultation on the proposed route options owing to problems with the distribution of the leaflets. Following feedback received in response to the 2011 consultation, TfL and Treasury Holdings repeated the 2010 route options consultation and distributed leaflets to 40,000 homes and businesses along the proposed route of the extension.

Consultation is not designed to be a referendum or a decision-making tool in its own right – rather it is one of many tools used to inform decisions on large-scale infrastructure projects. Consultations are used to help make better and more informed decisions and focus on issues as much as on numbers; they are designed to help understand

people's views, provide the opportunity for people to comment and ask questions, and to raise matters that might not have already been thought of so that proposals might be improved. For example, the 2011 route options consultation told us that 61 per cent of respondents' preferred route was from Kennington to Battersea, with new stations at Nine Elms and Battersea. However, it also gave us a raft of other information. It elicited a number of suggestions for alternative routes that have since been explored by the design team and it told us that people have concerns about noise that we have since explored further. Following the outputs from the consultation, we also focused on work to explore alternative options for the proposed shaft in the Claylands Road area, which has now been removed from the proposals for the scheme.

The typical length of time for infrastructure consultation processes is around six weeks, but the 2011 consultation process lasted for just over 13 weeks. The 2012 consultation currently under way will be open for six weeks, until 16 December.

## Key issue 9

### **The funding of the proposed extension and the relationship between TfL, the Mayor and Treasury Holdings**

Since the consultation in 2011, TfL is now leading the project on behalf of the Mayor.

TfL, along with the Mayor's office, is in discussion with all relevant parties, including the new owners of the Battersea Power Station site, London Boroughs of Wandsworth and Lambeth, and HM Treasury about the funding and finance arrangements for the NLE. These will need to be finalised before a TWAO application is submitted.

A funding statement will be submitted as part of our TWAO submission in spring 2013.

## Key issue 10

### **Accessibility at new stations and links to other transport opportunities**

Nine Elms and Battersea will be fully accessible from street to train, creating step-free access for people using these stations.

The stations at Nine Elms and Battersea will open up journey opportunities to the rest of the Underground network and provide an interchange with bus routes along Wandsworth Road and Nine Elms. Well signposted links to the mainline stations at Queenstown Road, Battersea Park and Vauxhall will also be provided.

We will continue to work with the Vauxhall and Nine Elms Strategy Board, comprised of public and private sector representatives responsible for overseeing the development of the area, and the councils at Lambeth and Wandsworth to improve links between the bus, rail, Tube, cycling and pedestrian network.

## Have your say

This consultation gives you the opportunity to comment before we finalise our proposals and submit our application for the TWAO needed to start construction. Visit [tfl.gov.uk/nle](http://tfl.gov.uk/nle) to leave a comment or complete the feedback form.

Alternatively, if you wish to receive a paper version of the feedback form please call **0843 222 1234** or email [nle@tfl.gov.uk](mailto:nle@tfl.gov.uk) and we can arrange for one to be posted to you.

The consultation period will close at 17:00 on 16 December 2012.

## Further information

More information about key sites, a consultation feedback form and other details about the scheme can be found at [tfl.gov.uk/nle](http://tfl.gov.uk/nle)

To receive this document in large print, audio or another language, please call 0800 298 3009.

## Have your say

This consultation gives you an opportunity to comment before we submit our application for the Transport and Works Act Order (TWAO) needed to start construction.

## Get in touch

Visit [tfl.gov.uk/nle](http://tfl.gov.uk/nle) to view the proposals, leave a comment or complete the questionnaire.

Or speak to us in person and view the proposals at:

<b>Market Towers</b> 1 Nine Elms Lane, SW8 5NQ	<b>Thursday 15 November</b> 15:00 to 20:00 <b>Friday 16 November</b> 08:00 to 18:00
<b>Sainsbury's</b> 62 Wandsworth Road, SW8 2LF	<b>Friday 23 November</b> 12:00 to 19:00 <b>Saturday 24 November</b> 09:30 to 13:00
<b>Gallery on the Corner</b> 155 Battersea Park Road, SW8 4BU	<b>Thursday 29 November</b> 15:00 to 20:00
<b>The Kia Oval</b> Executive Box 56, Kennington, SE11 5SS	<b>Friday 7 December</b> 12:00 to 19:00 <b>Saturday 8 December</b> 09.30 to 13:00

The consultation period will close at 17:00 on 16 December 2012.

Alternatively you can make comments by post by writing to us (no stamp required) at:

Business Reply Licence Number RRZL-CUSK-AAEE  
 TfL Northern line extension, Floor 10, Windsor House, 42-50 Victoria Street, London SW1H 0TL

## The proposals

- Extension of the Charing Cross branch of the Northern line from Kennington to Battersea via Nine Elms
- New stations at Nine Elms and Battersea
- Two permanent shafts at Kennington Green and Kennington Park to provide ventilation, cooling and emergency access if required
- Two temporary shafts to enable works to stabilise the ground in preparation for the new tunnels to be built

## Why the extension?

The proposed extension is essential to support the transformation of Vauxhall and Nine Elms which will see up to 16,000 homes and 25,000 jobs created over the next 20 years. It is part of wider plans to improve public transport in the area.

Benefits would include:

- New Tube stations at Battersea and Nine Elms, putting thousands more people within easy walking distance of the Tube network
- Reduced pressure on Vauxhall station and relief to the existing Northern line south of Kennington
- Wider access to leisure and employment opportunities for local people
- Cutting journey times from this part of London to the West End and City to around 15 minutes

## What's next?

Subject to funding being in place and permission to build and operate the extension being given, the new stations at Nine Elms and Battersea could be open by 2020.

## Our next steps

- Complete an Environmental Impact Assessment and other related reports required for the TWAO application (**spring 2013**)
- Submission of TWAO application (**spring 2013**)
- Public inquiry (**autumn 2013**)
- Decision on TWAO application (**autumn 2014**)
- Proposed start of construction (**from spring 2015**)

## Affected properties

In advance of submitting the TWAO application we will be writing to the owners and occupiers of properties above the proposed tunnels and those that may be affected by the construction of the project.

## For more information

See further information about the key sites and other details about the scheme at [tfl.gov.uk/nle](http://tfl.gov.uk/nle) or email the project team at [nle@tfl.gov.uk](mailto:nle@tfl.gov.uk)

To receive this document in large print, audio or another language, please call **0800 298 3009**



Have your say

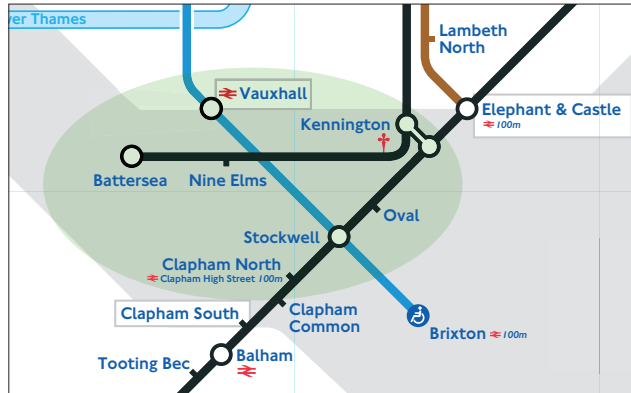
# Plans to extend the Northern line to Nine Elms and Battersea

Autumn 2012

Front cover image courtesy of Covent Garden Market Authority and Foster + Partners



**We'd like to hear your views on plans to extend the Northern line to Nine Elms and Battersea.**



A consultation on the latest plans to extend the Northern line is now under way.

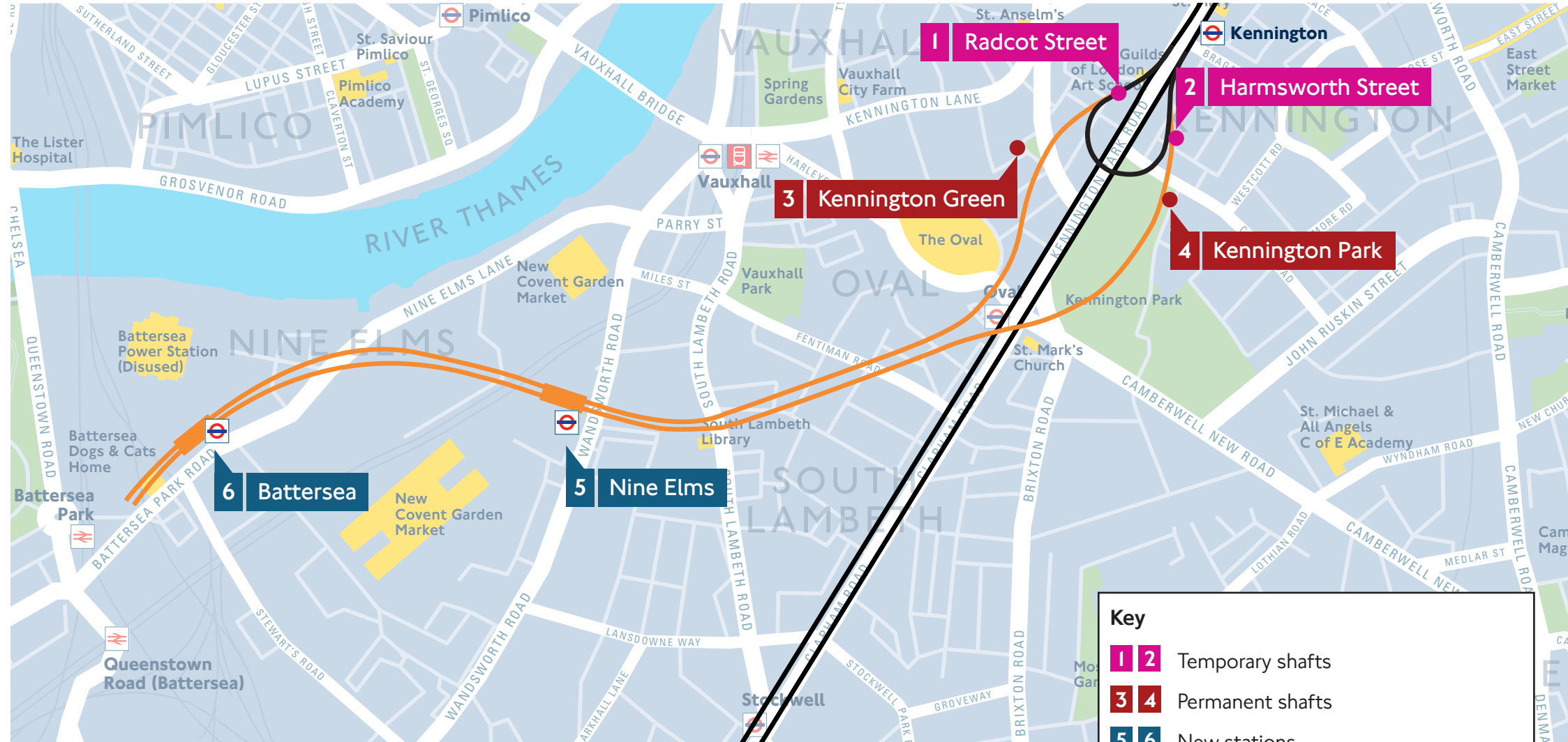
We've used feedback from previous scheme consultations and conducted extensive planning and design work to update the proposals. They are now available for you to view and comment on.

We want to hear your views before we finalise the plans and seek the Government's go-ahead for the extension.

This leaflet sets out the potential route and where to find further details on the scheme. This includes locations for the new stations, the worksites required for construction and the designs for the permanent shafts.

We have listened to concerns raised in previous consultations and our responses to these can be found at [tfl.gov.uk/nle](http://tfl.gov.uk/nle). For example, the proposed permanent shaft in the Claylands Road area is no longer included in the proposals following your feedback.

**Proposed route and key sites**



**1 2** Temporary shafts are required at Radcot Street and Harmsworth Street to stabilise the ground in preparation for the tunnels to be built

**3 4** Permanent shafts at Kennington Green and Kennington Park are needed to allow air in and out of the underground tunnels, help cool

the Tube and enable emergency access to and from the tunnels if necessary

**5 6** New stations at Nine Elms and Battersea, providing step-free access from street to train

**Key**

- 1 2** Temporary shafts
- 3 4** Permanent shafts
- 5 6** New stations
- Proposed Northern line extension
- Current Northern line

**View and download further information about each of the sites and other details about the scheme at [tfl.gov.uk/nle](http://tfl.gov.uk/nle)**