

Victoria Station Upgrade

Environmental Statement

Non-Technical Summary

November 2007





Contents

1	Introduction	5
2	Location	7
3	The Need for the VSU	8
4	Key Benefits of the Scheme	9
5	Alternatives and Scheme Development	10
6	Proposed Works	13
7	Construction	17
8	Environmental Impact Assessment	19
9	Conclusions	33
10	Other Supporting Documentation	35
11	What Happens Next	36



UNDERGROUND

VICTORIA STATION

VICTORIA PALACE

1. Introduction

The Victoria Station Upgrade (VSU) project proposes significant improvements to Victoria Underground Station, and is a key element of Transport for London's 5 Year Investment programme. The project will contribute towards the objectives of the Mayor's London Plan and the Transport Strategy. The overarching objective of the VSU project is:

'to increase the capacity of Victoria Underground Station so that it is fit for purpose for handling present and forecast passenger demand, to minimise passenger journey times and improve the quality of access, interchange and ambience and provide step free access routes within the Underground Station'.

In order to achieve this objective the project has the following three aims:

Aim 1 - To increase station capacity

A new North Ticket Hall with new escalators and links to the Victoria line and District & Circle lines will significantly increase station capacity. It will also be improved by the extension of the existing South Ticket Hall and new escalators and low level links/passageways providing access to the Victoria line.

Aim 2 - To minimise passenger journey times

A combination of an extension to the South Ticket Hall (with new escalators) and the new North Ticket Hall and new station entrances to the north will provide faster and easier access to, and through, the Underground Station. It will also decrease the need for people to cross the busy roads that lie to the north of Victoria Station.

Aim 3 - To improve quality of access, interchange and ambience

The works will provide a refurbished and extended Underground station with improved and new ticket halls. All areas will be modernised and finished to a high quality, which will improve the overall experience of passengers travelling through the Underground Station. It will introduce step free access between the Victoria line platforms and street level and between the Victoria line and District & Circle line platforms.

This will significantly improve accessibility for persons of reduced mobility.

Further discussion of these benefits can be found in Section 4, Key Benefits, of this document.

In order to obtain powers and permission to construct and operate these improvements, London Underground is applying to the Secretary of State for a Transport and Works Act Order (TWAO) under the Transport and Works Act 1992. As part of this application process LU is required to undertake an Environmental Impact Assessment (EIA) of the works.

The EIA Directive sets out the requirements for EIA. EIA is the process whereby environmental information is collected in order to identify and assess the potential and significant environmental effects that are likely to arise from a development. The EIA for VSU was undertaken by a team of independent specialists, and the findings of the assessment are reported in an Environmental Statement (ES). This document provides a non-technical summary of the ES for the upgrade scheme.

The ES informs the decision making process about the potential beneficial or adverse effects of the proposed scheme on the environment. It enables anyone with an interest in the project, including the general public, to understand how the VSU scheme will affect them. The application process then allows all individuals, groups or organisations that may be directly affected by the scheme an opportunity to have their concerns heard.

This Non-Technical Summary (NTS) provides an overview, in non-technical language, of the main findings of the ES. More specifically, it:

- describes the location of the VSU scheme and its purpose;
- sets out the background to the VSU scheme;
- provides an overview of the scheme history and alternatives;
- describes the proposed works including a description of the construction process;
- provides a summary of the data required to identify and assess the effects of the proposed works;
- discusses the significant environmental effects that have been identified; and
- provides a summary of the proposed measures to avoid, reduce or remedy any significant environmental effects.

2. Location

Victoria is one of London's main transport hubs with over 80 million people passing through the Underground Station each year. It is home to a unique combination of transport services including the National Rail Station, three Underground lines (Victoria, District & Circle), a bus station and a taxi rank. It also provides a dedicated link to Gatwick Airport through the Gatwick Express rail service. The Victoria Coach Station also lies in close proximity to Victoria Station.

Victoria Underground Station is located in central London in the City of Westminster, approximately 1km north of the River Thames. The station and deep running tunnels of the Victoria line are located immediately to the north of the National Rail Station and are almost fully concealed below the dense urban fabric of central Westminster. The District & Circle line Underground Station and sub-surface running tunnels are located on the north side of Terminus Place.

Numerous main roads surround the station area including Victoria Street to the north, Bressenden Place and Allington Street to the north/northeast, Wilton Road to the east and Buckingham Palace Road to the west. Terminus Place, where Victoria Bus Station and the taxi rank are situated, lies partly above the existing ticket hall (which serves the Victoria line).

The area surrounding the station is dominated by retail users which are located on the main roads, in the National Rail Station and in the new Cardinal Place development on Victoria Street. There are also a number of office spaces, including those of TfL and Network Rail, and some government department offices. Residential properties are located throughout the area including Allington Street, Vauxhall Bridge Road, Buckingham Palace Road, Palace Street, Morpeth Terrace and Carlisle Place.



3. The Need for the VSU

Victoria Underground Station is one of London's busiest Underground stations, with two thirds of all public transport trips through Victoria using the Underground. The number of passenger journeys at Victoria Underground Station is expected to rise from 80 million to 100 million per year by 2016.

The projected rise in demand coupled with the severe capacity constraints currently experienced, mean that without major investment, control measures such as gateline restrictions and station closures will continue to be used but with increased frequency. These control measures are used so LU can maintain passenger flows and safely prevent congestion. It is acknowledged that this is not a practical solution in the long term as it causes delay and discomfort for passengers. Therefore proposals for Victoria Underground were developed to meet this need.



The projected rise in commuter and visitor numbers over the next decade, as identified in the Mayor's London Plan, suggests that these existing problems would remain and worsen unless station capacity and the through flow of passengers is significantly improved.



The VSU scheme has been developed to address the problems associated with capacity constraints and accessibility during weekday peak periods. The scheme has been designed to solve these issues and provide significant benefits to the travelling public and those with reduced mobility.

4. Key Benefits of the Scheme

Congestion relief

A new North Ticket Hall will provide a major alternative entrance that will encourage passengers to use the entire length of the Victoria Line platform, as the platform will be fed from both ends, and the need for station entrance or gateline closures will be prevented when Underground and National Rail train services are operating at, or close to, normal schedules.

THIS WILL CONTRIBUTE TOWARDS THE ACHIEVEMENT OF AIMS 1 & 2.

Additional escalators and linking routes to, and from, the Victoria Line will add to the capacity of the station; and new and improved facilities including; additional stairs, more gatelines, new escalators, new and extended ticket halls and a Paid Area Link between ticket halls will all serve to improve passenger flows.

THIS WILL CONTRIBUTE TOWARDS THE ACHIEVEMENT OF AIM 1.

To increase capacity to address future demand

Minimise passenger journey time

All journey times will be greatly improved. The North Ticket Hall will ensure walking time for customers coming from Victoria Street to the Victoria line will be much quicker with direct access to the Underground network; and reduce the need for station entrance or gateline closures.

THIS WILL CONTRIBUTE TOWARDS THE ACHIEVEMENT OF AIM 2.

There will be a total of seven new lifts associated with the North Ticket Hall and South Ticket Hall, two of which will lead to the District & Circle lines platforms. This will vastly improve accessibility and journey quality for all persons of reduced mobility.

THIS WILL CONTRIBUTE TOWARDS THE ACHIEVEMENT OF AIM 3.

Access for persons of reduced mobility

5. Alternatives and Scheme Development

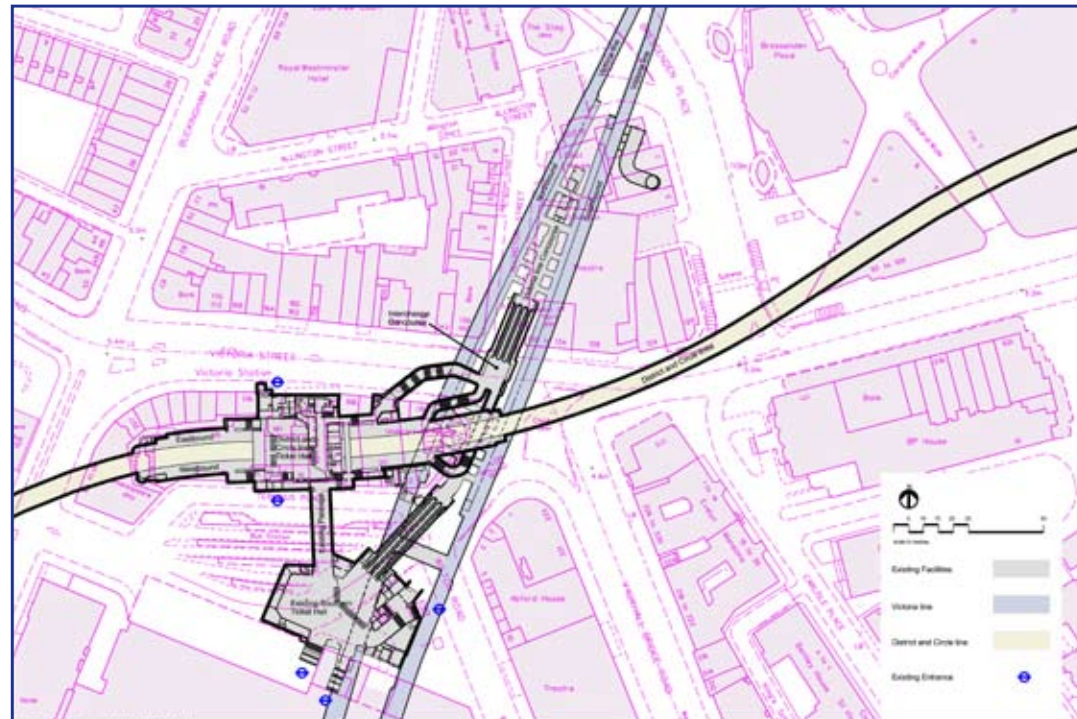
5.1 History of Scheme Development

Victoria Underground Station has been subject to severe capacity constraints for many years. Since the 1990s there have been numerous studies carried out in order to develop a viable scheme to alleviate these problems. The studies have considered proposals for the whole interchange at Victoria as well as the Underground Station. There have been a number of large-scale and complex proposals, however these were considered unaffordable against other investment priorities.

As LU was keen to continue developing a solution for the Underground station only, further feasibility studies were undertaken. It was concluded that there was a viable congestion relief scheme for the Underground station, principally within the Victoria line areas of the station.

Since 1996 a number of scheme options, sub options

and variations have been identified, reviewed, developed further and then rejected prior to confirmation of the preferred scheme for which consent is now being sought.



Existing Station Layout

5.2 Consideration of Alternatives

Seven main alternatives to the preferred option now being promoted by LU (the VSU scheme) were considered. They are listed below:

Alternative 1	Upgrade of the whole Victoria Underground station including the Victoria line and District & Circle line ticket halls.
Alternative 2	Bolt on to alternative 1 with additional open access below the Victoria National Rail Station concourse.
Alternative 3	Construction of a new ticket hall on the site of Elliot House.
Alternative 4	Pedestrian access tunnel from the south side of Victoria Street to the new North Ticket Hall.
Alternative 5	Construction of an additional underground train tunnel with new platforms.
Alternative 6	Increasing the diameter of the existing tunnels.
Alternative 7	Extension of the Victoria line platforms.

Due broadly to the nature of the long term heavy engineering works involved any alternative options will have similar effects on the environment within the vicinity of the VSU scheme.

An initial assessment of the alternatives was carried out at an optioneering workshop held by the project team. Options were assessed against the following criteria:

- journey time (operational safety and quality);
- programme;
- project cost;
- buildability;
- operational impacts;
- stakeholder impacts;
- utilities; and
- environmental impacts.

Following completion of the options assessment, the preferred scheme was selected as it met the project criteria including reduced environmental effects. The preferred option also provided operational flexibility.





6. Proposed Works

The proposed VSU scheme will provide a new subsurface north ticket hall and an enlarged existing south ticket hall to increase capacity and access. The scheme will also provide a passenger link between the two ticket halls, with new lifts and escalators to improve access for all LU users.

6.1 New North Ticket Hall

The new North Ticket Hall is a subsurface ticket hall located mainly beneath Bressenden Place. The ticket hall will have a lift, escalators and emergency services access to the Victoria line. The ticket hall will be a three storey subsurface structure located mainly below the highway under Bressenden Place.

Access to, and from, the North Ticket Hall is proposed from two new entrance structures; one on the west side of Bressenden Place at its junction with Victoria Street (adjacent to the Victoria Palace Theatre) and the other on the east side of Bressenden Place and Victoria Street (adjacent

to the Cardinal Place development). Access from both will be provided by new stairs and a lift from street level to the ticket hall. A new emergency services access lift and ventilation shaft is also proposed on the western side of Bressenden Place.

In order to accommodate the new entrance to the North Ticket Hall and associated LU operational facilities, it will be necessary to demolish numbers 3-11 Bressenden Place and numbers 120-124 Victoria Street.

6.2 Extension to the South Ticket Hall

The proposed South Ticket Hall extension is a two and three storey subsurface structure located partly below the area known as 'the Beach' and partly below Wilton Road. 'The Beach' is an area of public realm that lies in front of the National Rail Station.

Access to and from the South Ticket Hall is proposed from the existing Sussex and Kent staircases in the National Rail station concourse and via a relocated and modified Wilton Road staircase. The Sussex staircase will be widened and a new lift constructed in between the Sussex and Kent staircases to provide access for Persons of Reduced Mobility (PRM) from the National Rail concourse to the LU ticket hall. New escalators and a new passenger link will provide an additional connection the South Ticket Hall to the District & Circle lines.



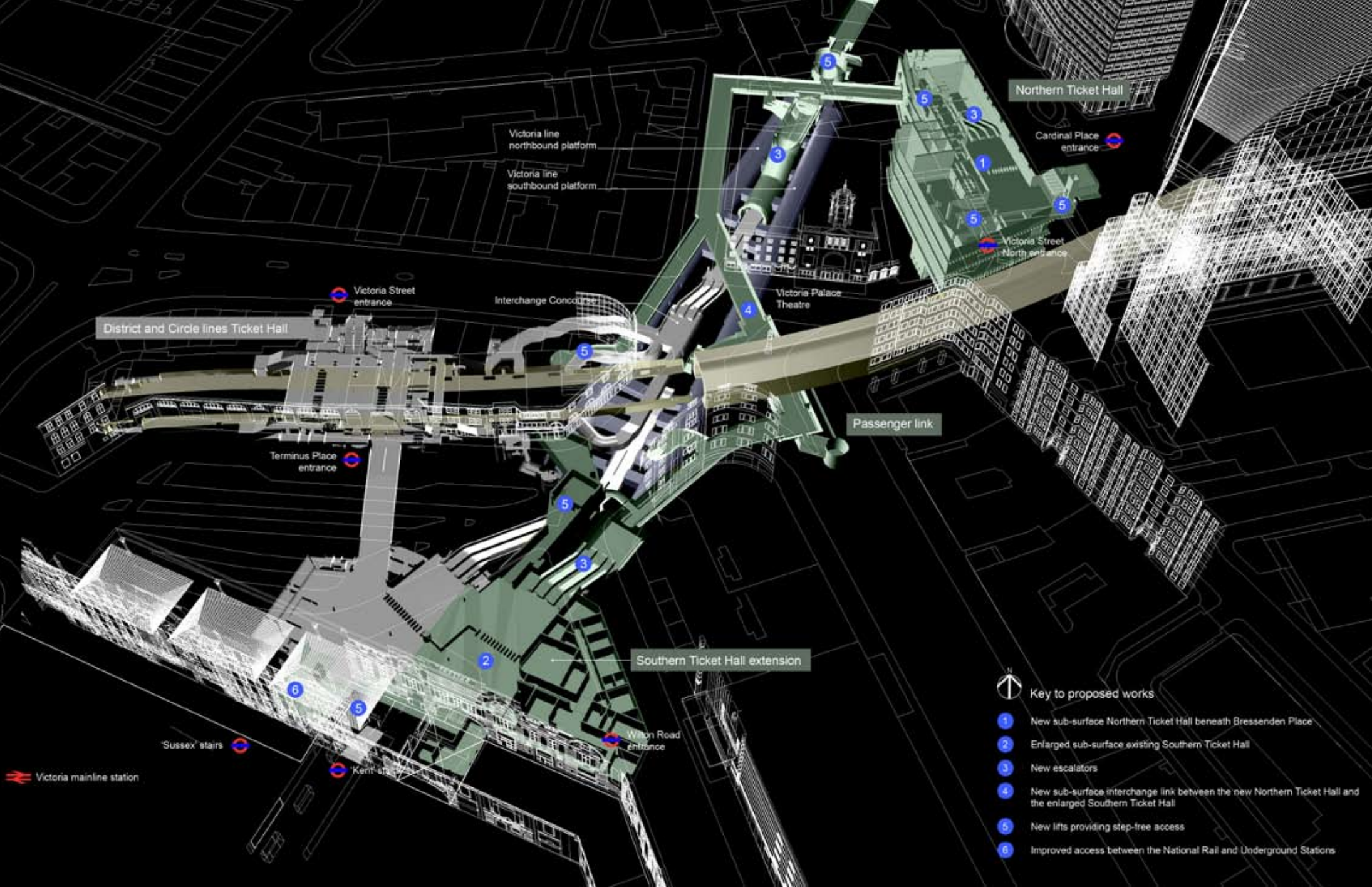
6.3 Paid Area Link (PAL)

The Paid Area Link is a new interchange tunnel which will connect the North Ticket Hall to the South Ticket Hall to allow pedestrian passage between the two ticket halls and provide access to the northern end of the Victoria line platforms.

6.4 Utilities Diversions

The area affected by the VSU scheme contains many sub-surface utilities and services. Location surveys have determined that a number of key utilities within proximity of the VSU worksites will require diversion, strengthening or protection in advance of the main upgrade works to Victoria Underground Station. The implementation of these measures is key to progressing the main works schedule. Whilst powers are being sought under the TWA Order to carry out all the utilities diversions, it is the intention that the utilities works are completed prior to the commencement of the main works for VSU.





- Key to proposed works**
- 1 New sub-surface Northern Ticket Hall beneath Bressenden Place
 - 2 Enlarged sub-surface existing Southern Ticket Hall
 - 3 New escalators
 - 4 New sub-surface interchange link between the new Northern Ticket Hall and the enlarged Southern Ticket Hall
 - 5 New lifts providing step-free access
 - 6 Improved access between the National Rail and Underground Stations

7. Construction

7.1 Programme

The main VSU scheme will take approximately six years to construct. Work is programmed to start in autumn 2009 to be completed in 2015.

The works are proposed at a major London transport interchange. A complex construction programme has been prepared to ensure that the main transport function of the area is not prohibitively disrupted. The six major phases of work are listed and briefly explained below.

Phase	Key Activities
1 Starting Oct 09	<p>Demolition of Elliot House, 3-11 Bressenden Place and 120-124 Victoria Street.</p> <p>Preparation and piling along Wilton Road.</p> <p>Construction of extension to Sussex stairs and lift.</p> <p>Piling and formation of top slab to District & Circle line westbound link passage.</p> <p>Demolition/infilling of existing underpass and toilets.</p>
2 Starting May 10	<p>Jet grouting in Allington Street, escalator collar and Paid Area Link.</p> <p>Piling for North Ticket Hall box. Piling and demolition of National Rail basement and part existing ticket hall area.</p> <p>Excavation to ticket hall level.</p> <p>Formation of part of roof slab adjacent to Wilton Road.</p> <p>Continuation of piling and top slab to District & Circle line westbound link passage.</p>

Phase	Key Activities
3 Starting Oct 10	<p>Jet grouting in Allington Street and for tunnels.</p> <p>Construction of signalling equipment room and fire fighting shaft.</p> <p>Form roof slab to west section of North Ticket Hall box.</p> <p>Preparation and piling from ticket hall level.</p> <p>Start construction of District & Circle line underpass.</p> <p>Construct lift shafts, passage and connections.</p>
4 Starting Feb 11	<p>Construction of tunnels fire fighting shaft and connections to Victoria line tunnels.</p> <p>Construction of re-aligned Allington Street.</p> <p>Pile and form roof slab to east section of North Ticket Hall box.</p> <p>Complete piling and continue construction of South Ticket Hall.</p> <p>Continue construction of District & Circle line underpass.</p>
5 Starting Nov 11	<p>Construction of tunnels and North Ticket Hall.</p> <p>Complete construction of fire fighting shaft and connections to Victoria line tunnels and commission signalling equipment room.</p> <p>Continue construction of South Ticket Hall; construct escalator and tunnels from South Ticket Hall.</p> <p>Construct Cardinal Place stairs, lift shaft, passage and connections.</p> <p>Continue construction of District & Circle line underpass.</p> <p>Further jet grouting for tunnels.</p>
6 Starting Nov 13	<p>Completion and fit out of tunnels, North Ticket Hall and South Ticket Hall.</p>

7.2 Construction Management

Draft Code of Construction Practice

A Draft Code of Construction Practice (CoCP) is being developed in consultation with the City of Westminster. This will provide strict guidelines for the management of construction activities on site and for ensuring the mitigation of significant environmental effects during construction. The CoCP will form part of all construction contracts for the works.



The Code sets out standards and procedures for managing construction activities to minimise potential environmental effects. It also contains provisions for communication with the general public and local community regarding the construction phase of the VSU scheme, including the provision of a helpline to ensure that any issues raised are addressed and corrective action is taken.

Environmental Management Strategy

An Environmental Management Strategy is being produced to demonstrate how environmental considerations are being included in the scheme during its entire life. This forms the framework for how those environmental issues will be managed. It will act as a guidance document for contractors to use in their preparation of Site Environmental Management Plans (SEMP). It will also take into consideration the provisions in the CoCP to ensure that environmental issues are managed at site level in line with best practice and industry standards.

Noise Policy

The project has also adopted a Noise Policy. Under this policy (which applies to buildings in residential use), where specified threshold criteria are met, the need for noise insulation and/or further mitigation measures will be investigated and applied.

8. Environmental Impact Assessment

8.1 Consultation

Consultation undertaken during development of the scheme, and throughout the EIA process, has provided interested parties with an opportunity to influence the scope of the EIA and in doing so, has also influenced the development of the proposals. The consultation undertaken was for the purposes of informing interested parties of the scheme in its entirety and was not isolated to the EIA process. Consultation for the VSU scheme has included

:

- over 1100 letters sent to stakeholders including local residents and businesses, user groups, accessibility groups and statutory consultees;
- regular meetings with key stakeholders;
- stakeholder presentations/briefings;
- progress updates sent out to all stakeholders to coincide with major project milestones and/or changes;
- joint workshops and technical meetings with relevant transport consultees; and

- two public exhibitions held to provide the public (i.e. local residents, businesses, community groups and LU customers) with information on the VSU scheme.



Summary information on the scheme development has been made available on the LU website <http://tfl.gov.uk/vsu>. This website is continually updated as the project progresses.

8.2 Planning and Regulatory Context

The proposals conform to the national government planning policy to promote sustainable forms of transport and relieve congestion. The VSU scheme will also support the policies of the City of Westminster and of the Greater London Authority by dramatically improving the operation and capacity of the Victoria Underground Station. This will provide significant benefits in terms of sustainable development, travel and to the community, and will make an important contribution to ensuring the future vitality of the area.

8.3 The Environmental Statement

The purpose of the ES is to report the significant environmental effects of the scheme and the means of mitigating them where appropriate and to report the final residual significant effects. A significant effect is one that, in the opinion of the EIA specialists, should be brought to the attention of the decision makers – principally the Secretary of State (and his appointed Inspector) and the relevant statutory authorities. A significant effect may be beneficial or adverse and may be temporary or permanent.

Mitigation measures are actions that are implemented to reduce the significance of an effect. The effect that remains after the implementation of mitigation measures is known as the significant residual effect.

8.4 Environmental Effects

Consideration was given to the topic categories based on the EIA Directive and the technical requirements for the VSU scheme. It was determined that potential environmental effects would be addressed through the following disciplines:

- traffic and transport;
- noise and vibration;
- air quality;
- townscape and visual amenity;
- built heritage;
- archaeology and cultural heritage;
- demolition and excavated materials, and waste;
- contaminated land;
- water resources;
- ecology;
- socio-economics; and
- community.

The environmental assessment considered temporary effects during the construction period, which is programmed from 2009-15 and permanent effects associated with subsequent operation i.e. post 2015.

8.5 Traffic and Transport

The scheme is located within the heart of a busy transport hub comprising Victoria Bus Station, Victoria National Rail Station, Victoria Underground Station and key distributor roads. The assessment looked at the potential effects on road safety, pedestrians, cyclists, bus routeing and passengers, taxis (routeing, pick-up/set down and passengers), parking and loading and freight and private vehicles. The assessment examined the effects during construction (temporary potential effects caused by the worksites and resulting temporary effects on transport) and operation (permanent).

Temporary Effects

There will be a number of temporary adverse effects during construction of the VSU scheme. The footways will be reduced in width around the worksites at Terminus Place, Wilton Road and Vauxhall Bridge Road increasing pavement congestion however, these affects will be mitigated through the provision of temporary footway areas and diversions.



Bus operations will be affected and a number of buses will need to be diverted which could result in delays to services. Some bus stops will also be temporarily relocated requiring increased walking time for passengers. The taxi rank will be temporarily relocated which will result in a longer walk for passengers and potentially some delays. There will also be delays for road users due to temporary traffic diversions. This will be minimised by proposed improvements to road junctions to provide increased capacity for displaced traffic.

Permanent Effects

The project will significantly improve conditions for passengers of Victoria Underground Station with a new ticket hall and corresponding new access to the north. This will assist in addressing the significant delays currently experienced during peak periods. The provision of the new ticket hall and access on the north side of Victoria Street will also reduce pedestrian flows across the top of Vauxhall Bridge Road, at Wilton Road and on the 'Little Ben' Island.



8.6 Noise and Vibration



The Victoria area comprises a major transport hub surrounded by a number of varying land uses. These include a variety of shops along Victoria Street and at Cardinal Place, many office developments, cultural attractions such as the Victoria Palace and Apollo Theatres and a number of residential developments. The noise assessment looked at the potential noise and vibration effects (from construction and traffic) on sensitive uses such as residential, hotels and theatre uses.

Temporary Effects

There will be adverse noise effects on a number of residential properties, hotels and public house residential accommodation in areas surrounding the worksites. The contractor will use the CoCP and the project Noise Policy to minimise these effects as far as is practicable.

A number of buildings (including the Victoria Palace Theatre) may experience effects from groundborne noise and/or vibration during construction.

No significant noise effects are predicted to be caused by changes in traffic levels during the construction phase.

Permanent Effects

The intention is that the project design will ensure noise and vibration from the new plant meets the required criteria. No significant effects are predicted for the operating phase.



8.7 Air Quality

The area is highly developed and characterised by a mix of retail, office and residential uses. The assessment looked at a range of vulnerable uses including; schools, medical facilities and residential units. The construction assessment focused on changes in air quality from construction dust and traffic emissions. It also looked at the potential effect on greenhouse gases. The operational assessment looked at the potential for the new station to generate air emissions and potential changes to traffic.

Temporary Effects

The Draft CoCP contains comprehensive and rigorous measures to ensure that there will be no significant effects caused by dust from the worksites. These measures include damping down stock piles of earth, wheel washing and covering up of supplies, enclosed rubble chutes, use of prefabricated materials to minimise grinding, sawing and cutting on site and ensuring compliance through site inspections. The contractor will be required to strictly adhere to these dust control measures.



The project will generate additional vehicle movements. Careful construction planning will be used to ensure that the vehicle movements and potential congestion is kept to a minimum. Efficient use will also be made of on-site plant to ensure that emissions are reduced. These measures will ensure that there are no significant air quality or greenhouse gas effects.



Permanent Effects

Emissions could result from the relocation of ventilation shafts which serve the new tunnels, energy use of the station, dust and particles from the general wear and tear of the station, rails and trains. There will be no significant effects as a combination of the following measures will be used (where appropriate): well sited shafts, regular cleaning of station infrastructure, use of energy efficient equipment, use of renewable energy sources and staff training in energy reduction.

8.8 Townscape and Visual Amenity



The setting of Victoria is important as a busy transport interchange dominated by pedestrian, vehicular, bus and taxi activity. Buildings in the areas are an eclectic mix of architectural styles with a wide variety of uses including commercial, retail, residential and office space. The assessment looked at the effect on the appearance of the Victoria area and on the views experienced by people living and working there. This was assessed for the temporary construction phase (focusing on the impact of the worksites) and on the permanent appearance of the area.

Temporary Effects

There will be a number of adverse effects during construction on the townscape in the Victoria area due to the loss of three trees on Bressenden Place, the removal and subsequent reinstatement of Little Ben Clock Tower and the effects of construction on the public realm surrounding the station. There will also be a number of visual effects for users of nearby offices and pedestrians as a result of demolition and construction.

These effects will be reduced as far as possible using painted and well maintained construction hoardings and the careful design of lighting.

Permanent Effects

The forecourt of the Victoria National Rail Station will be transformed with new hardsurfacing, innovative design and use of materials and new street furniture. This change, in combination with the improved space and new and refurbished entrances to the Underground will, significantly improve the character and appearance of the area for passengers and the local population. The changes will also greatly improve the views for workers in surrounding office buildings and pedestrians.



8.9 Built Heritage

The assessment looked at the effect of the scheme on listed buildings and conservation areas. There are a number of listed buildings/structures adjacent to the works area including: the Victoria Palace and Apollo Theatres, the National Rail Station, 'Little Ben' clock tower and the Thistle Hotel. The nearest conservation areas are Westminster Cathedral and Grosvenor Gardens, but they lie outside the area and will therefore not be affected.

The assessment looked at the impact of the physical works on the fabric of the buildings and on their setting both during construction (temporary) and operation (permanent).

Temporary Effects

The construction works will have a temporary adverse effect on the setting of some listed buildings. The National Rail Station forecourt will be affected by works at Terminus Place, the Apollo Theatre by works at Wilton Road and the Victoria Palace Theatre by works at the 'Little Ben' area. 'Little Ben' clock tower will be temporarily removed and stored so will not be affected. The works may also have a temporary structural effect on the fabric of the Victoria Palace



Theatre. It is anticipated that this effect will be minimised as the methods of construction become more refined.

Permanent Effects

The setting of Victoria Railway Station will be affected permanently as a result of new air vents and a new Wilton Road entrance in 'the Beach' area. These alterations will also have an effect on the setting of the Apollo Theatre. The setting of Victoria National Rail Station will also be affected by the incorporation of new temporary emergency exits and a new lift. It is anticipated that this effect will be minimised as the design is further refined.

Alterations to listed buildings and their setting, such as the Victoria National Rail Station, where required, will be subject to the approval of a listed building application that will be submitted to City of Westminster.

The effect from possible strengthening works to the Victoria Palace Theatre is regarded as adverse. However, it is envisaged this will be minimised through more detailed design and investigation.

8.10 Archaeology and Cultural Heritage



The VSU scheme does not lie in an Area of Special Archaeological Priority and no Scheduled Ancient Monuments have been identified. The area is also heavily developed. This means that the potential for survival of any archaeological resources is probably limited to areas under existing roads, spaces between buildings or areas that have not been basemented. The assessment prepared a detailed archaeological history of the site.

Temporary Effects

An assessment of the archaeological potential of the site has concluded that there are no resources of high importance that would merit permanent preservation in situ. The effect of construction on buried archaeological resources will be minimised by a strict programme of archaeological investigation prior to development. As a result, it is anticipated that there will be no adverse effect on any undetected finds.

Grouting could potentially have adverse effects on buried archaeology as organic remains can be affected by the chemical composition of the grout. To minimise the effect of this activity, evaluation prior to grouting will take place and materials selected accordingly.

Permanent Effects

It is possible that the scheme will affect the water table within the site and vicinity of the VSU scheme. Deterioration of archaeological remains as a result of drying out may occur. However, it has been determined that this is unlikely.



8.11 Demolition and Excavated Materials, and Waste

Waste management is a highly legislated and regulated practice. The project has prepared an Environmental Management Strategy which includes an Environmental Management and Monitoring Plan and a Demolition & Excavated Materials, and Wastes Management Plan. These will be rigorously followed by the contractor during construction and by LU during scheme operation.

Temporary Effects

Considerable volumes of material will be generated during demolition and construction including concrete, timber, bricks and metal. Material will be re-used on site (as far as is practicable) to aid the construction and landscaping process. Inevitably some material which cannot be reused or recycled will be removed from the site for disposal. Opportunities for recycling steel, timber and clean hardcore will be maximised. Any contaminated materials will be removed from site for disposal to a licensed waste management facility.



The Demolition & Excavated Materials, and Wastes Management Plan will ensure that waste management procedures and environmental risks are minimised. As a result of this it is not expected that there will be any residual effects arising from demolition and construction of the scheme.

Permanent Effects

Once the VSU scheme is in operation, the waste streams will be very similar to that generated by existing LU operations. These include food waste, plastics, paper, office wastes etc. and are therefore the effects are not deemed to be significant.

Procedures shall be identified for adoption through the Demolition & Excavated Materials, and Wastes Management Plan. An Environmental Management and Monitoring Plan will be used to ensure that the effects on the surrounding environment are minimised.

8.12 Contaminated Land

The VSU scheme is located in a highly developed urban area. Desk studies have identified that former land uses are unlikely to have caused significant levels of contamination in the past. However, the fact that the area has been developed may mean that some contaminants may exist in the immediate subsurface.

Temporary Effects

The construction works will involve the disturbance, excavation and movement of large amounts of soil. The adoption of best practicable means during construction (as specified by the Draft CoCP) will mean that risks to construction workers and site users from exposure to contaminants will be minimised.

There are also potential risks from contaminants during the construction process to future site users, construction staff, surrounding land users and newly built underground structures from land contamination. However, again with measures laid down by the Draft CoCP, no adverse effects are predicted.



Permanent Effects

The presence of subsurface peat and alluvium has the potential to generate carbon dioxide (CO₂) and methane (CH₄) however gas protection and ventilation measures have been incorporated into the design of the proposed ticket halls and subsurface structures to reduce the likelihood of gases building up. Passive and active venting systems have also been incorporated. As a result of these measures no significant effects are predicted.

8.13 Water Resources

The assessment looked at the potential effects on surface water and groundwater resources in terms of flood risk and quality. The area lies within the floodplain of the River Thames. There are no ordinary watercourses or main rivers in the site area. However, the Tyburn River which is now culverted and forms part of the King's Scholar's Pond Sewer crosses under the area.

Temporary Effects

There may be short-term changes in water levels and groundwater flows but these will not be significant. The potential for contaminated run-off and flooding of works will be controlled by the measures laid out in the Draft CoCP. As explained above the area does lie within the floodplain for the River Thames. This has been included in the project risk register and appropriate measures have been included in the design and construction methodology.

Permanent Effects

The monitoring of groundwater levels and drainage flows will take place to ensure that potential flooding (although unlikely) is dealt with appropriately. This could include counter measures such as additional drainage. Emergency procedures will be put in place to address the potential of flooding by the River Thames.



8.14 Ecology

The assessment looked at the ecological features of the area and potential effects on habitats and protected species or notable species of flora and fauna. Victoria is a heavily developed urban area and there are no statutory sites designated for nature conservation within 2km of the sites.

There are four non-statutory sites comprising; Buckingham Palace (a Site of Metropolitan Importance for Nature Conservation), Eccelston Square and Warwick Square (sites of Borough Importance for Nature Conservation), Belgrave Square (a Site of Borough Importance for Nature Conservation) and St George's Square Gardens (a Site of Local Importance for Nature Conservation).



Temporary Effects

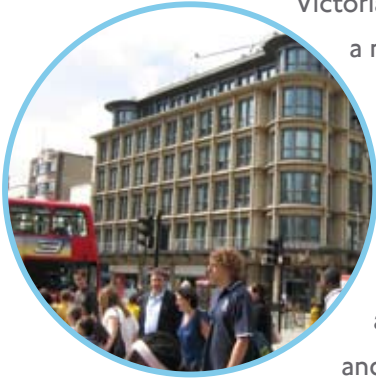
There are not anticipated to be any adverse effects on ecology within the Victoria area as a result of the construction works. Bird and bat surveys will be undertaken prior to the commencement of works to ensure that no nesting birds or bat roosts will be disturbed during construction.

The loss of trees on Bressenden Place will not cause any ecological effects as replacement trees will be provided. The replacement strategy adopted for the scheme is a 1 for 1 tree replacement, as minimum, and 2 for 1 tree replacement where possible.

Permanent Effects

Replacement trees will be provided on Bressenden Place to (in line with the policy outlined previously) to compensate for the loss of those removed during construction.

8.15 Socio-Economics



Victoria is a major transport hub which has attracted a range of retail, leisure and office based uses. It is a thriving business and cultural area that provides a major contribution to the London economy. The socio-economic assessment gives a social profile of the area including age, ethnicity, employment, labour force and skills base. It looks at the potential social and economic impact of the works and final scheme on the local and regional economy.

Temporary Effects

The construction of the VSU scheme will lead to a loss of approximately 450 jobs through demolition of existing buildings. It will be mainly office and related service jobs that are lost. The loss as a percentage of local employment is negligible. It is assumed that (although not part of this scheme) replacement buildings will be eventually constructed that will provide new opportunities to off-set this employment loss. The construction will also provide the potential for approximately 60 construction jobs (it is assumed that not all jobs on-site will be full time so this figure represents a 'full time equivalent'). These construction jobs will also benefit the local economy as the construction staff will spend

money in the local area and the project will buy local goods and services. It has been calculated that this could potentially lead to 97 new local jobs. There may be a number of businesses that could experience disruption during the construction period. The scale of effect will not be significant to the operation of the business.

Permanent Effects

The new scheme will increase the capacity and efficiency of the station and make it a much more pleasant place. This will benefit the local workforce and local community and will stimulate economic activity as Victoria becomes a more accessible and attractive place to work and shop.

The project will also bring London wide benefits. Major transport infrastructure is key to ensuring that Victoria is able to operate as effectively and efficiently as possible. It will help improve the attractiveness of Victoria as a place to conduct business which will in turn feed into the wider London economy. The VSU scheme is also important in helping to further increase the status of Victoria as a major shopping centre in central London.



8.16 Community

The community assessment looked at the effect of the proposed works on the local community during construction and operation. It focused on residents, incoming workers, users of community facilities and accessibility for people moving around the area. Community facilities were identified as educational buildings, medical facilities, places of worship, and recreational facilities. Residential areas were also defined.

Temporary Effects

There will not be any temporary closure or disruption of community facilities. There may be one property (The Stag Public House) whose occupier may need to be temporarily rehoused under the Noise Policy. However, the rehousing of the occupier of one unit will not have a significant effect on the local community.



There will be disruption in terms of accessibility. The closure of the eastern leg of Allington Street will be mitigated by the provision of an alternative pedestrian route via Warwick Row. The pedestrian subway at the junction of Bressenden Place and Victoria Street is also scheduled for closure

however, the street level crossing facilities will remain in place and functional.

Permanent Effects

There will be no permanent loss of residential or community facilities. The buildings proposed for demolition are not community facilities, they are mainly office and retail based.



The operational scheme will result in the closure of the pedestrian subway at the south end of Bressenden Place at its junction with Victoria Street. However, the street level pedestrian crossing will be retained.

The opening of the new North Ticket Hall will result in a reduction in pedestrian congestion along Victoria Street and around street level of the Victoria National Rail station. This will result in an overall improvement in accessibility to the Victoria area which will be a key benefit to the community.

9. Conclusions

The Environmental Statement concludes that the development of the VSU scheme will inevitably result in changes to the existing environment. The scheme involves the construction of a new ticket hall and extension of an existing ticket hall at Victoria. This will result in some significant effects.

Construction effects will be minimised as far as is reasonably practicable through adherence by the appointed contractor to the construction standards and procedures set out in the CoCP, the terms of which are being developed in consultation with the City of Westminster.

This will result in the reduction of many environmental effects on-site. Where significant effects currently remain, every effort will be made through more detailed design and investigation to minimise these effects, so far as reasonably practicable.

In the long term, the effect of the scheme will be wide ranging and bring significant benefits to the area. It will dramatically improve travelling conditions, accessibility and provide congestion relief as well as improving the general environment in the Victoria area. It will also bring economic benefits to the Victoria area and London as a whole.





10. Other Supporting Documentation

In addition to this ES the Order application is accompanied by the following environmental documentation.

CEEQUAL Pre-Assessment Advisory Report	CEEQUAL is an awards scheme assessing the environmental quality of civil engineering projects. The UK Government actively encourages the attainment of environmental excellence in projects such as the VSU Scheme. This project will therefore be delivered in accordance with the 2005 Government strategy on sustainable development (Securing the Future) and applicable Government guidance.
---	---

Project Sustainability Appraisal (PSA)	<p>The PSA developed for the VSU scheme summarises the review of the design proposals to establish the sustainability benefits and adverse effects of the project and identifies mitigation measures which could deliver a more sustainable outcome.</p> <p>The PSA measures incorporated into the scheme design and operation proposals which promote sustainable development through the integration of social, environmental and economic considerations.</p>
---	--

Energy Demand Assessment	This involves assessing the energy demand and the associated carbon emissions of the VSU scheme. In conjunction with the Mayor's London Plan, every new development referred to the Greater London Authority as a notable project is required to undergo an energy demand assessment.
---------------------------------	---

Health Impact Assessment (HIA)	The effect of the VSU scheme on human health and well-being is central to the consideration of this scheme. The HIA examines evidence from a range of sources to make an assessment of the scheme in terms of its potential beneficial and adverse impacts and effects on human health and wellbeing.
---------------------------------------	---

11. What Happens Next?

The Environmental Statement, of which this non-technical summary forms one part, will be considered by the Secretary of State in his consideration of the TWA Order Application. If objections to the application are made then a Public Inquiry is likely to be held. The following is an outline of the anticipated Order programme with estimated dates:

Submission of TWAO Application with ES	Nov 2007
Public Inquiry	June 2008
Secretary of State's Decision	Spring 2009
Advanced Utilities Works	2008 - 2009
Construction Period	2009 - 2015
Scheme Completion	2015

The environmental effects summarised in this document may be raised at the Inquiry. The Inspector presiding over the Inquiry will then prepare a report advising the Secretary of State on the implications of the scheme including its environmental effects.

LU will continue to identify how through design and construction methods, it might further reduce any predicted adverse effects identified within the ES.

Information on where to view or obtain the ES documentation can be sought from:

Mrs Pam Thompson
Bircham Dyson Bell LLP
50 Broadway
London
SW1H 0BL
Telephone: 0207 227 7080 E-mail: pamthompson@bdb-law.co.uk

A charge may be made to cover part of the production costs.

Alternatively, the ES documentation is available to download at:
<http://www.tfl.gov.uk/vsu>

Comments or queries should be sent to:

The Consultation Manager
Victoria Station Upgrade
1st Floor, North Wing
55 Broadway
London
SW1H 0BD

Or to vsu@tube.tfl.gov.uk





Website
www.tfl.gov.uk/vsu



24 hour travel information
020 7222 1234



Email
vsu@tube.tfl.gov.uk