Transport for London
Surface Transport

Cycle Superhighway
East-West Route (Phase 1)
Environmental Evaluation Report

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Executive Summary

Introduction

This document presents the outcomes of the environmental evaluation of the East West Cycle Superhighway Phase 1 (i.e. the Project). It includes a brief description of the Project, the evaluation methodology that has been used, the likely environmental impacts of the Project and measures to protect the built and natural environment.

The environmental evaluation follows Surface Transport's Project Environmental Evaluation procedure, part of its Environmental Management System. Where applicable, the environmental evaluation is guided by the Department for Transport's Analysis Guidance (TAG) and Design for Roads and Bridges (DMRB).

Summary of Impacts

Significance of Impacts

The Project is likely to lead to localised and route-wide beneficial and adverse environmental impacts; these impacts span the whole significance spectrum from significant to slight, including many areas where the Project is likely to have a neutral impact on the environment.

The environmental evaluation has concluded that the Project is unlikely to have significant environmental impacts on the following areas:

- Planning and Transport Policy
- Biodiversity
- Cultural Heritage
- Townscape
- Water Resources
- Physical Fitness
- Journey Experience
- Sustainable Design
- Environment Management

For Dust and Emissions to Air, significant impacts both adverse and beneficial are likely to occur at a localised level. Overall, substantial beneficial impacts are expected on 5.8km of the London road network (both the route and other impacted roads), moderate beneficial impacts on 9.3km of the network, substantial adverse impacts on 0.41km of the network, and moderate adverse impacts on 3.3km of the network.

For Noise and Vibration, significant beneficial impacts are likely to occur at a localised level. For example significant beneficial impacts are expected on 3.2km of the London road network whilst significant adverse impacts are expected on 0.39km of the network.

Air quality and noise impacts are driven by the redistribution of traffic on and around the Route. Traffic redistribution in turn redistributes air and noise emissions across the study area. Overall, the Project will not increase Dust and Air Emissions, or Noise and Vibration.

The next paragraphs and Table 1 below summarise the main environmental impacts of the Project during the construction and operational phase.

Operational phase

Benefits

The Project is likely to have a number of route-wide benefits, for instance it supports a number of local, regional and national policies which aim to encourage cycling and the use of more sustainable modes of transport. The Project is also likely to improve cyclists' journey experience and their physical fitness

The Project is likely to have a number of localised benefits particularly in terms of noise and air quality. For instance 138 road-links would experience a reduction in noise. The magnitude of these impacts is such that overall the scheme will bring more beneficial localised noise impacts than adverse localised noise impacts. Localised air quality benefits are likely on 30.4km of road, leading to more air quality benefits than disbenefits overall.

Disbenefits

There are no route-wide disbenefits.

Where disbenefits are likely to arise, these tend to be of a localised nature. For instance there will be localised disbenefits to biodiversity where trees will be felled and green estate removed. The loss of trees and green estate is not likely to lead to disbenefits to Cultural Heritage and Townscape.

Localised noise and air quality disbenefits are likely to occur as a result of redistribution of traffic at certain locations. For instance 143 road links will experience a minor increase in noise, and 3 links a moderate increase in noise. However no major adverse impacts are expected, and the magnitude of these moderate and minor impacts is such that overall the scheme will bring more beneficial localised noise impacts than adverse localised noise impacts. Specifically, the scheme is expected to result in major positive noise impacts on 0.68km of the network, and moderate positive impacts on 2.6km of the network.

Localised air quality disbenefits are likely to occur on 27.6 km of road, overall however, more road network will experience benefits in air quality (30.4km of road) than disbenefits.

Energy consumption from way-finding monoliths will have a negative impact on energy efficiency objectives.

Construction phase

During the construction works, some slight temporary and localised adverse impacts will arise in the form of visual intrusion, energy consumption, waste production, dust, emissions to air, noise, vibration and disruption to the existing and other cycle routes.

Table 1: Summary of Environmental Impacts

	Construction Phase	Operational Phase	Scale
Planning and Transport Policy (p.10)	0	+ +	Route-Wide
Biodiversity (p.10)	-	0 to -	Local
Cultural Heritage (p.14)	0 to -	0	Local
Townscape (p.17)	0 to -	0	Local
Noise and Vibration (p.18)	-	+++ to - -	Local
Dust and Emissions to Air (p.22)	-	+++ to - - -	Local
Water Resources (p.23)	0	0	Route-Wide
Physical Fitness (p.23)	0	+	Route-Wide
Journey Experience (p.24)	-	+ +	Route-Wide
Sustainable Design (p.25)	-	0 to -	Local

Key:

- Slight Adverse	O Neutral	+	Slight Beneficial
- - Mode Adverse		++	Moderate Beneficial
- - - Significant Adverse		+++	Significant Beneficial

Project Description & Methodology

Project Description

TfL is proposing a continuous largely segregated cycle route between Tower Hill and Westbourne terrace. The Route (i.e. the geographical area along which the Project will operate) is about 9.5km in length and extends from the A1211 Tower Hill in the London Borough of Tower Hamlets to Westbourne Terrace in the City of Westminster. It will provide a clear and convenient route for cyclists, physically separated from other vehicles. Space for the new cycle route will be created through the reallocation of road space and a change in the operation of some junctions.

This environmental evaluation covers Phase 1 of the East-West Route, between Westbourne Terrace and Tower Hill, where it would connect to the existing Superhighway Route 3. The Route passes along Lower and Upper Thames Street, Victoria Embankment, across Parliament Square, and through St James's Park and Hyde Park. There will also be connections to other existing and proposed cycle routes such as other Cycle Superhighways and Quietways. At the time of the assessment, designs – including proposals for the Royal Parks - were yet to be finalised following public consultation, however these changes have been reviewed by TfL's environmental team and are not expected to substantially change the outcome of the Environmental Evaluation.

The Project is located in three Local Authorities; these are, from East to West:

- London Borough of Tower Hamlets
- City of London
- City of Westminster

Overall the Project runs on Local Authority roads, Transport for London Road Network (TLRN) and through Hyde Park. Figure 1 shows the geographical extent of the Project (including a potential future Phase 2, over the A40 Westway – which is not the subject of this environmental evaluation).

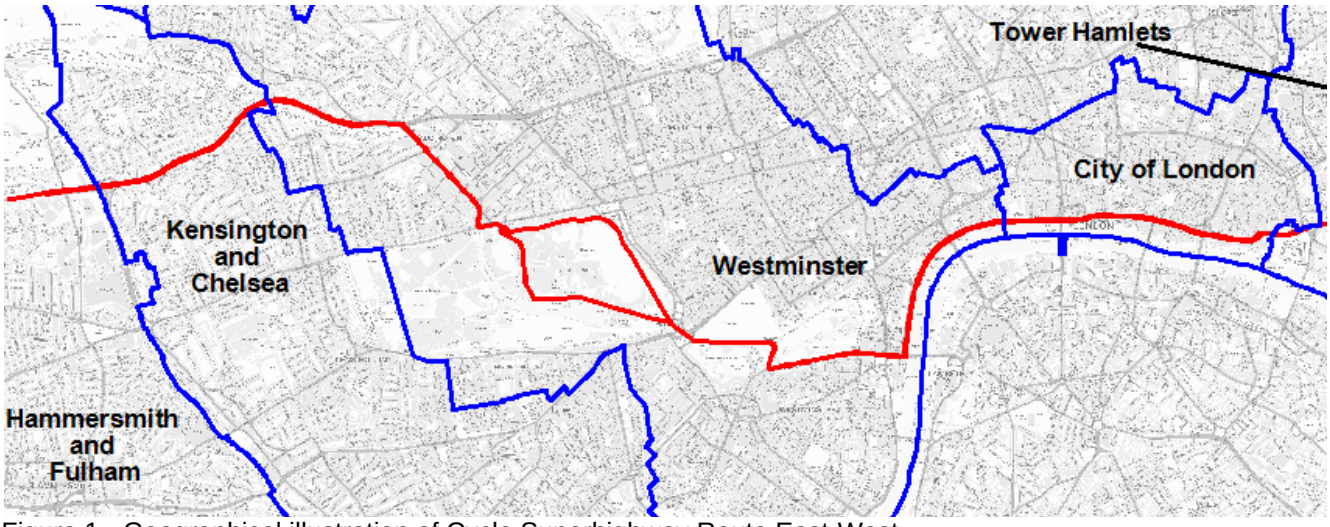


Figure 1 - Geographical illustration of Cycle Superhighway Route East-West

The Project will aim to deliver the following measures where appropriate:

- Cyclist segregation from general traffic on the entire Route
- Advanced Stop Lines (ASLs)
- Safety mirrors at left turns
- De-cluttering
- Improved lighting
- Planting
- Improved pedestrian facilities
- Way-finding
- Cycle Parking
- Early starts for cyclists
- Cycle specific stages at junctions
- Coach and bus stop bypasses
- Two stage right turns for cyclists

The route will require changes to the road layout:

- A wide two-way kerb-segregated cycle track in the road, meaning a reduction in traffic lanes along most sections of the proposed route. The segregation would be removable in certain areas for ceremonial and state occasions and other major events.
- New segregated cycle tracks replacing a traffic lane in both directions on Westbourne Terrace
- Redesigned junctions, including segregated route for cyclists through Parliament Square and the partial removal of the Lancaster Gate one-way system
- Banned turns or other restrictions for motorists at various locations. Proposals include the closure of Horse Guards Road at its junction with Birdcage Walk and Great George Street to general traffic (except cyclists and official vehicles), and the closure of Shorter Street to general traffic (except buses and cyclists)
- Changes to parking and loading arrangements, including reduction in motorcycle and car parking and the relocation of some coach parking on Victoria Embankment
- Changes to bus and coach stops, including new bypasses for cyclists at Tower Hill, Lower Thames Street and Victoria Embankment
- Changes to footways and pedestrian crossings as there would be footway extensions in some areas including Parliament Square and Hyde Park Corner. However there are also areas where footways would need to be reduced to make room for the cycle track
- Segregated cycle tracks would be created on the traffic roads in Hyde Park (however details of route here have not been issued and will undergo further consultation).

Environmental Evaluation Methodology

The environmental evaluation of the Project follows Surface Transport's Project Environmental Evaluation Procedure, part of its Environmental Management System. Where applicable, the environmental evaluation is guided by the Department for Transport's Analysis Guidance (TAG) and the Highway Agency's Design for Roads and Bridges (DMRB). Appraisal methodologies are discussed in more detail under each relevant section.

This Environmental Evaluation Report defines the requirements for achieving the appropriate level of environmental evaluation for a project so that negative environmental impacts are understood and minimised, environmental benefits are enhanced, environmental risks are managed, challenges to the project are reduced and the required relevant environmental opinions, directions, consents, permits and licenses are identified. The Report provides assurance to the Project Manager, Client and Environmental Manager that the project's design

and performance, the appraisal, monitoring and sampling methodology used, and other technical and reporting activities are of the required quality and standard to meet TfL's environmental obligations.

This report has been adapted from the Environmental Evaluation Report Template shown in Appendix A.

Consultation

Consultation involving key stakeholders took place from the end of September 2014 to the beginning of November 2014.

Detailed Appraisal

Planning and Transport Policy

The Project is consistent and in accordance with national, regional and local planning and transport policy objectives which seek to achieve a more sustainable transport system by promoting cycling (Appendix B). The Project complements other existing and proposed initiatives such as other Cycle Superhighways, the London Cycle Network, Legible London, London Cycle Hire Scheme and The Mayor's Vision for Cycling in London. The Project will therefore result in moderate beneficial effects on planning and transport policy.

Biodiversity

There are four key biodiversity elements along the Route, these are: Metropolitan Open Land (MOL), Sites of Importance for Nature Conservation (SINCs), protected species and street trees.

MOL designation is unique to London and benefits from the same level of protection as Green Belt. As such MOL is the most important green space along the Route. MOL along the Route includes St James's Park, Green Park and Hyde Park (The Royal Parks).

SINCs are the next most important green spaces along the Route. They form part of a national network of non-statutory valued natural sites of Metropolitan, Borough or Local importance Figure 2 and Table 2 displays SINCs in the area surrounding the Project.

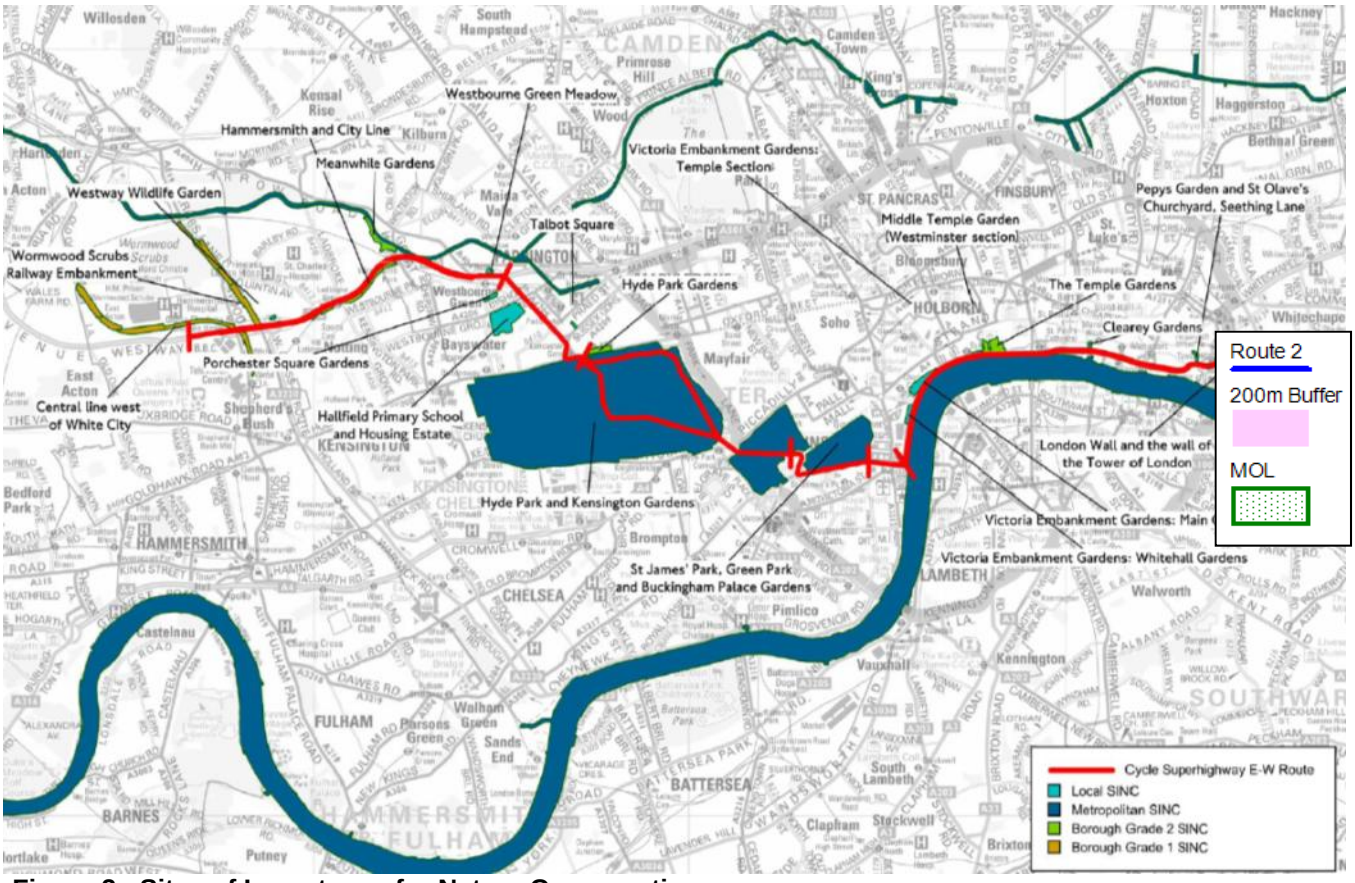


Figure 2 - Sites of Importance for Nature Conservation

Table 2 - Sites of Importance for Nature Conservation

St Katherine's Dock, Pepys Garden and St Olave's Church, Clearey Gardens, the Temple Gardens, Victoria Embankment Gardens (Temple Section, Main Gardens, Whitehall Gardens), Westminster Abbey Great Cloister and College Garden, Strand, Savoy, River Thames
St James's Park, Green Park, Buckingham Palace Gardens
Hyde Park and Kensington Gardens, Hyde Park Gardens
Talbot Square, Hallfield Primary School and Housing Estate, Porchester Square Gardens

A number of protected species have been sighted along the Route (Figure 3). These are animals and plants which, as a result of their rarity, vulnerability or persecution, are given some form of special protection through wildlife legislation. Species which may be found on the highway and therefore at potential impact from the Project are birds and bats which may nest or roost in street trees.

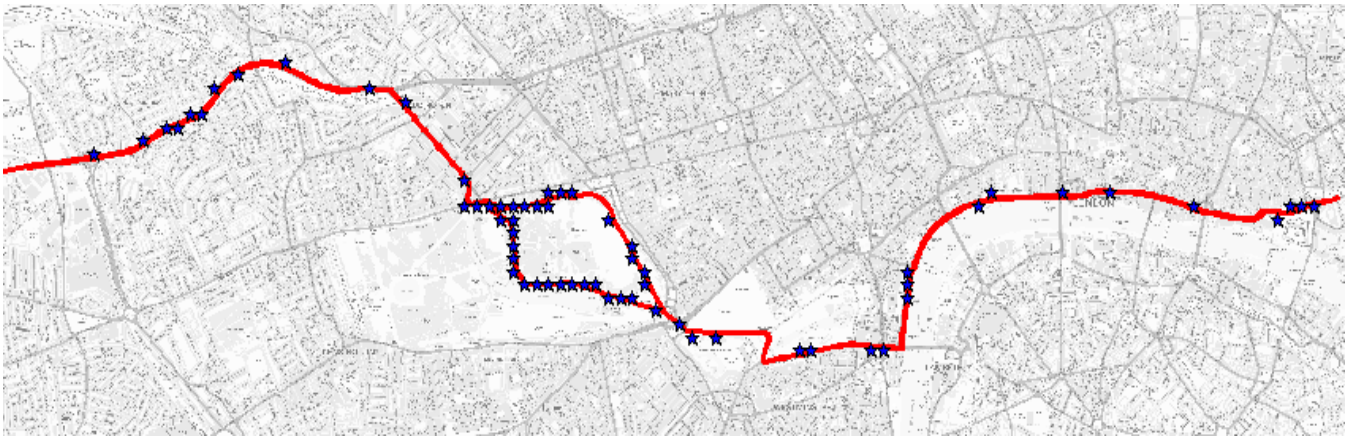


Figure 3 – Sighting of Protected Species

There are a large number of street trees along the Route. Trees are extremely important in an urban environment as they not only provide habitat sites for a number of protected species, but they also improve the visual appearance of an area. Trees also contribute towards the reduction of atmospheric particulate matter (PM_{10}) and help adapt to climate change.

Preliminary design indicates that 11 street trees will be removed and approximately 2,005m^2 of green estate; the location of these is identified in Table 3. At present the only new and replacement planting proposed is on the corner of Great Tower Street and Lower Thames Street where the subway entrance will be closed and planters placed there, therefore replacing the existing planter which is being removed to increase available footway area. Trial holes are to be undertaken across the Route to identify further locations suitable for tree planting. Protected species may be affected as a result of tree removal.

Table 3- Proposed Tree Loss and Green Estate Loss

Location	TLRN / Borough Road Ownership	Scheme Proposal	Proposed Impact E.G. Tree Loss / Green Estate Loss	Green Estate Loss m²	Tree Species
Tower Hill - Shorter Street	TLRN	Tree removal required to allow cycle facility to run through Shorter Street	Tree loss		Whitebeam (likely)
Tower Hill - Shorter Street / Mansell Street	TLRN	Tree removal required to allow cycle facility to run through Shorter Street	Tree loss		London Plane Tree
Tower Hill - Traffic island at Tower Hill / Minories junction	TLRN	Remove traffic island to form cycle track segregation	Tree loss		London Plane Tree
Tower Hill - Traffic island at Tower Hill / Minories junction	TLRN	Remove traffic island to form cycle track segregation	Tree loss		London Plane Tree
Tower Hill bus stop (westbound)	TLRN	Cut back the grass hill where it is muddy, and pave past the statue to provide for the desire line and improve the appearance. Use sleepers against the edge of the mound, to form informal seating / step up onto the mound and prevent the same muddy area reinstating itself.	Green estate loss	30	
Great Tower Street / Byward Street Planter	TLRN	Remove planter to open up the footway and reduce conflict between cyclists and pedestrians who need to access Gt Tower St.	Tree loss		
Great Tower Street / Byward Street Planter	TLRN	Remove planter to open up the footway and reduce conflict between cyclists and pedestrians who need to access Gt Tower St.	Tree loss		Olive
Great Tower Street / Byward	TLRN	Remove planter to open up the footway and reduce conflict	Tree loss		Olive

Location	TLRN / Borough Road Ownership	Scheme Proposal	Proposed Impact E.G. Tree Loss / Green Estate Loss	Green Estate Loss m²	Tree Species
Street Planter		between cyclists and pedestrians who need to access Gt Tower St.			
Great Tower Street / Byward Street Planter	TLRN	Remove planter to open up the footway and reduce conflict between cyclists and pedestrians who need to access Gt Tower St.	Green estate loss	26	
Castle Baynard Street planter (City owned)	Borough	Tree removal required to allow cycle facility to run through the existing planter location into Castle Baynard Street.	Tree loss		
Castle Baynard Street planter (City owned)	Borough	Tree removal required to allow cycle facility to run through the existing planter location into Castle Baynard Street.	Tree loss		
Castle Baynard Street planter / Puddle Dock (City owned)	Borough	Planter will need to be cut back to allow the junction to be opened up and provide a left turn onto Upper Thames Street.	Tree loss		
Castle Baynard Street planter / Puddle Dock (City owned)	Borough	Planter will need to be cut back to allow the junction to be opened up and provide a left turn onto Upper Thames Street.	Green estate loss	96	
Bayswater Road / Lancaster Gate Gyratory	Borough	Traffic island is being removed to allow traffic to flow ahead on Bayswater Road rather than around the gyratory.	Tree loss		
Hyde Park Corner / Wellington Arch	Borough		Green estate loss	713	
Constitution Hill	Borough	Using the existing horse ride as cycle track. Removal of some grass separating the footway and (proposed) cycle track.	Green estate loss	1140	

TAG helps determine the impact that a project may have on biodiversity by combining the nature conservation value of an environmental feature, in this case the 11 street trees and 2,005m^2 of green state, with the magnitude of a project's impact. The conservation value of the 11 trees and of 2,005m^2 of green state of high or medium importance at the local scale with a limited potential for substitution, the magnitude of the impact in the area is minor negative. Therefore the overall impact is:

Value (high or medium) + Magnitude (minor negative) = Slight Adverse

The impact on biodiversity may worsen if further trees are to be felled or green estate is removed.

There are also a number of trees that whilst not at risk they are in close proximity to the works. The potential adverse impact to these trees must be noted and appraised prior to commencement of the works. The National Joint Utilities Group's (NJUG) 'Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees' and the British Standard 'BS 5837:2005, Trees in relation to construction – Recommendations' states that within the prohibited zone (i.e. one metre from the tree trunk) excavation of any kind must not be undertaken unless there has been full consultation with the TfL Arboricultural and Landscape Manager.

Removal of trees must be agreed with TfL Arboricultural and Landscape Manager. Trees in Conservation Areas must not be felled unless the Local Authority has been notified.

The contractors will be required to produce an Environmental Management Plan through which they will seek to ensure that biodiversity features along the Route are protected and that a neutral impact on biodiversity is maintained during the implementation of the Project.

If protected species are present during works, TfL will ensure that only Defra licensed ecologists handle protected species. The Project Team has and will be in contact with the TfL Arboriculture and Landscape Manager for the area throughout the development of the Project.

The window for carrying out ecological surveys (Spring and Summer) has elapsed. Whilst there is no risk of nesting birds in Autumn and Winter – when the trees are likely to be felled – there may be a risk of removing bats or their roosts. Therefore an Ecological Clerk of Works may be required during the tree felling stage.

Cultural Heritage

There are a number of heritage designations, features and assets along the Route. These include Conservation Areas (Figure 4), Archaeological Priority Areas (Figure 5), Listed Buildings and Structures (Figure 6), Scheduled Monuments and World Heritage Sites (Figure 7).

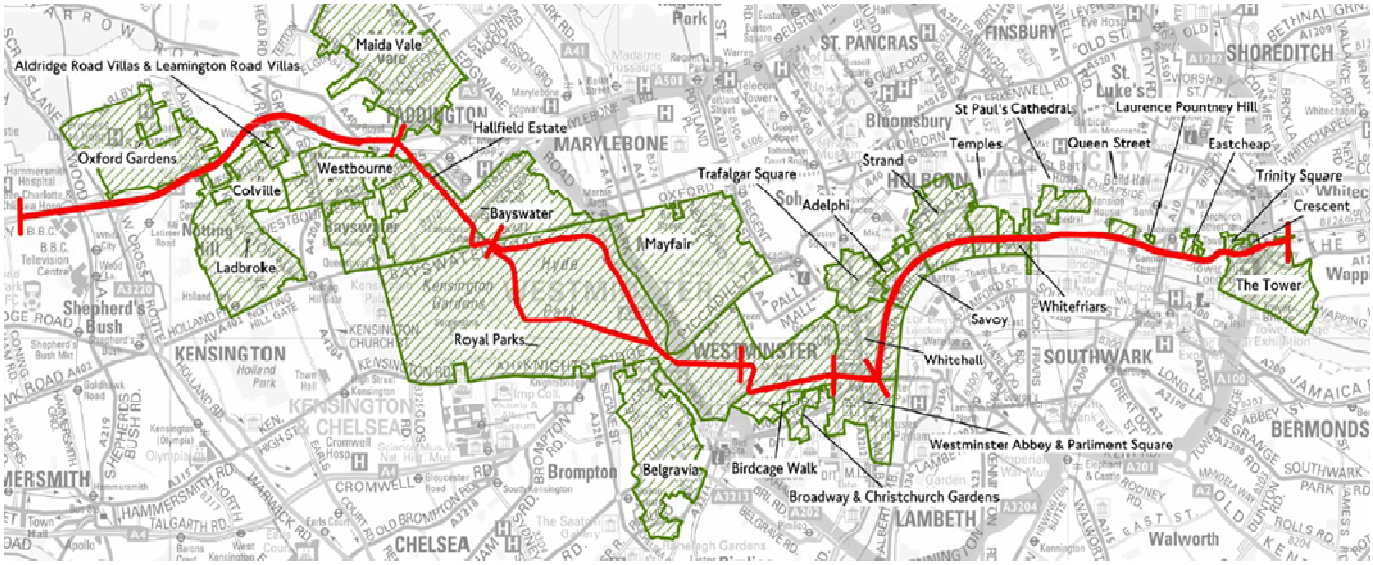


Figure 4 - Conservation Areas

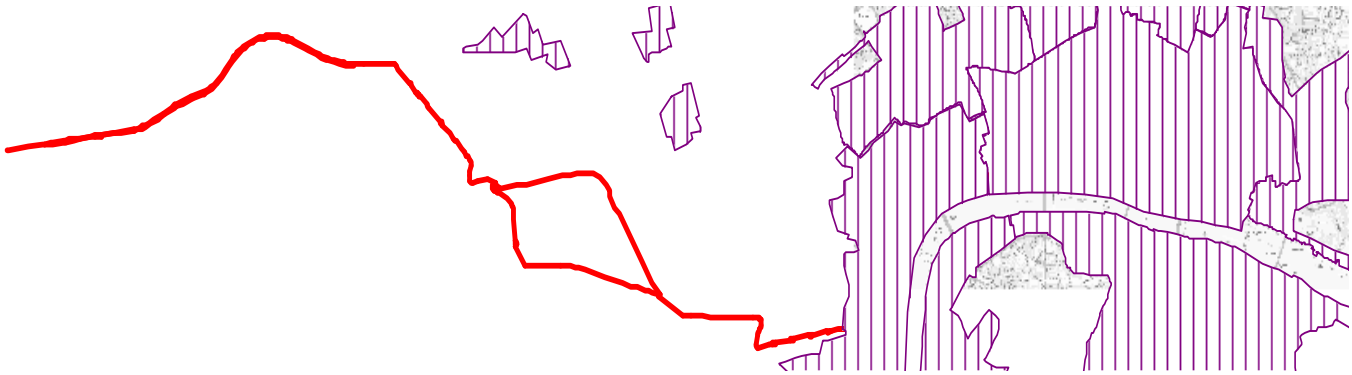


Figure 5 - Archaeological Priority Areas

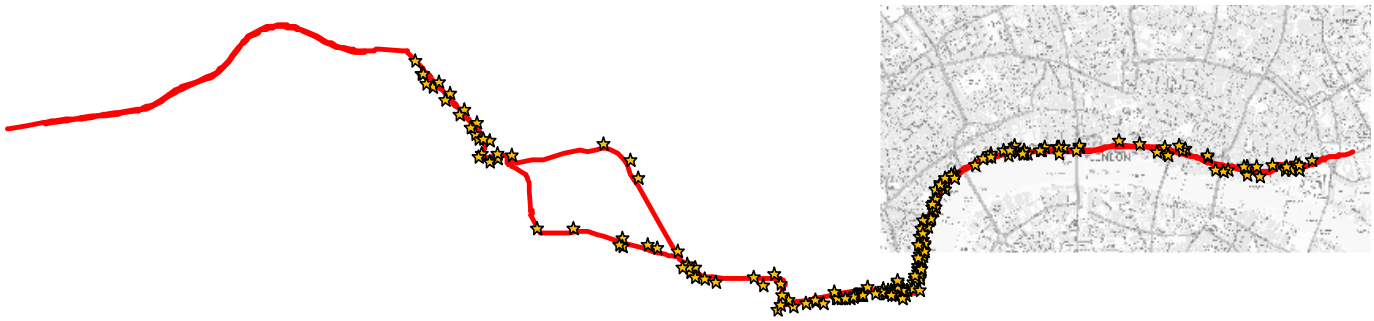


Figure 6 - Listed Buildings and Structures

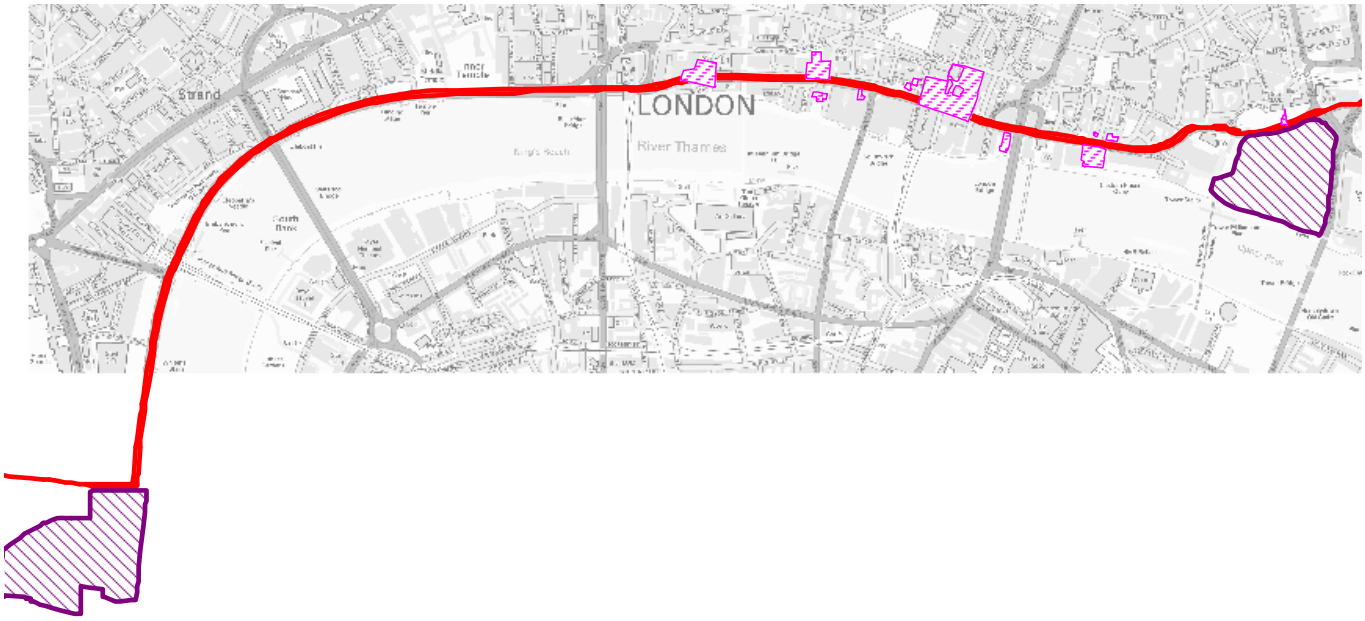


Figure 7 - Scheduled Monuments and World Heritage Sites

Appendix C lists all Conservation Areas along the route and provides a brief description of each together with an appraisal of the likely impacts of the Project. Appendix D lists nationally and locally Listed Buildings and Structures along the Route.

There are two World Heritage Sites (WHS) along the Route; these are The Tower of London and The Palace of Westminster, Westminster Abbey with St Margaret's Church. The scheme is not within the WHSs boundaries. Works must not take place within the boundaries highlighted in Appendix E without prior consultation with the Environmental Manager and English Heritage.

The Scheduled Monuments along the Route are:

- Baynards Castle
- Huggin Hall Roman Baths
- Vintners Hall
- Roman Governors Palace (site of)
- Fish Mongers Hall
- Structure of archaeological interest below Billingsgate Market
- Roman Hypocaust and building on site of Coal Exchange
- Remains of mediaeval and Roman wall by Tower Hill station

Overall, the impact of the Project on cultural heritage during implementation and operation is expected to be neutral. This conclusion was derived by applying professional judgment guided by TAG.

In all conservation areas the impact is likely to be neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

New way-finding street furniture, blue Cycle Superhighway branding and lighting upgrades are not likely to impact on the current heritage status of the Conservation Areas.
Some excavation may be required particularly when relocating stats and utilities. Required excavation is likely to be under 45cm and therefore have a neutral impact on archaeological

remains. In London, archaeological remains tend to be found at a depth greater than one metre from the surface (with the exception of some ancient walls and Scheduled Ancient Monuments which are protected from the surface). If any excavation is to be over one metre, then the contractors will be expected to hand-dig the site if in an archaeological priority area. If archaeological remains are found, work shall stop and will only resume after approval from the relevant Local Authority Conservation Officer is received.

The contractors will be required to produce an Environmental Management Plan through which they will seek to ensure that cultural heritage features along the Route are protected and that a neutral impact on cultural heritage is maintained during the construction of the Project.

Townscape

The Project is located within three broad townscape character areas identified in Figure 8 and described in Table 4.

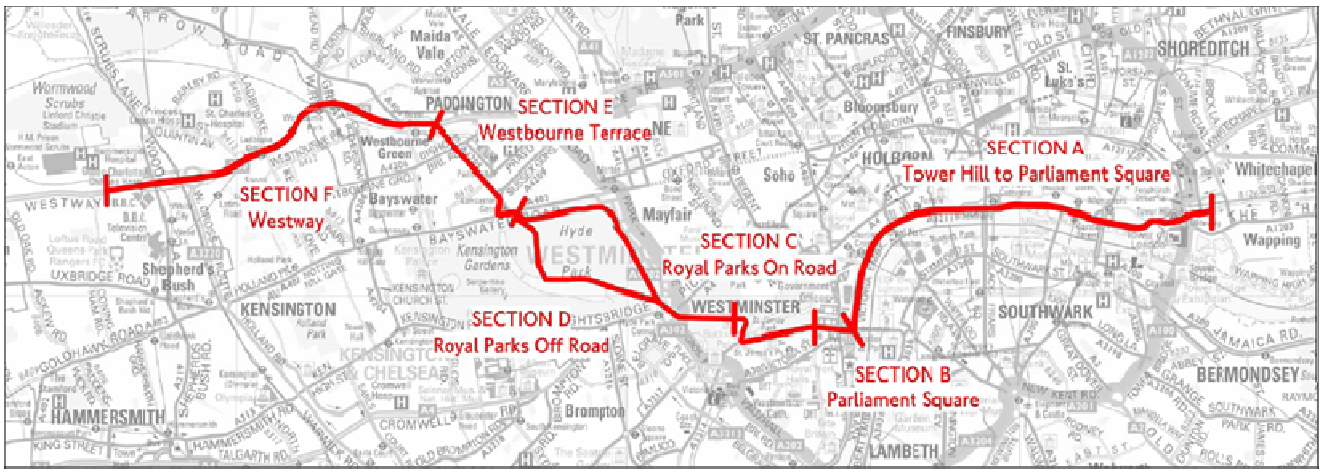


Figure 8 - Streetscape Character Areas

Table 4 - Streetscape Character Areas

Section	Streetscape	Definition
A	Urban Civic, Retail and Commercial (Tower Hill to Westminster Bridge)	Areas which are dominated by substantial government and commercial office buildings of both traditional and contemporary style of significant stature, both historic and contemporary in style. High volumes of pedestrians, congested at peak times
B	Urban Civic, Retail and Commercial (Westminster Bridge to St James's Park)	
C	Urban Residential and Civic (St James's Park)	Privately owned properties face directly onto the street, the streets may be enclosed by buildings of significant stature, both historic and contemporary in style. St James's Park is the key green feature of the area
D	Metropolitan Open Land (Royal Parks and BuckingHam Palace)	Green open land used for leisure and of ecological value. Where there is traffic it tends to

		be quite dense.
E	Urban Residential (Westbourne Terrace)	Privately owned properties face directly onto the street, the streets may be enclosed by buildings of significant stature, both historic and contemporary in style.

Overall, the impact of the Project on the townscape during the operational phase is expected to be neutral. This conclusion was derived by applying professional judgement guided by TAG. TAG describes a project to have a neutral effect on townscape when it:

- Avoids neither being visually intrusive nor has an adverse effect on the current level of tranquillity (where these exist) of the townscape through which the route passes.
- Maintains existing townscape character in an area which is not a designated townscape, that is, neither national nor local high quality, nor is it vulnerable to change.
- Avoids conflict with government policy towards enhancing urban environments.

The townscape is already subject to stress conditions and the proposed measures are not expected to worsen them.

Some temporary and localised visual intrusion from the construction phase will have a slight adverse impact on townscape.

Overall the Project is expected to have a slight adverse impact on townscape during the construction phase due to the traffic diversions and the consequent disruption to travel. In addition disruption could be worsened as a result of cumulative impacts from the simultaneous implementation of other projects in the area. During the operational phase, depending on location, the Project is expected to have a neutral to slight adverse impact. Operational impacts could be worsen if the number of trees lost increases.

Noise and Vibration

The Route passes through some densely populated areas; some of which have been identified by Defra as Important Areas for Noise. These are areas where the highest volume of traffic meets the highest number of noise sensitive receptors (Figure 9 and Table 5).

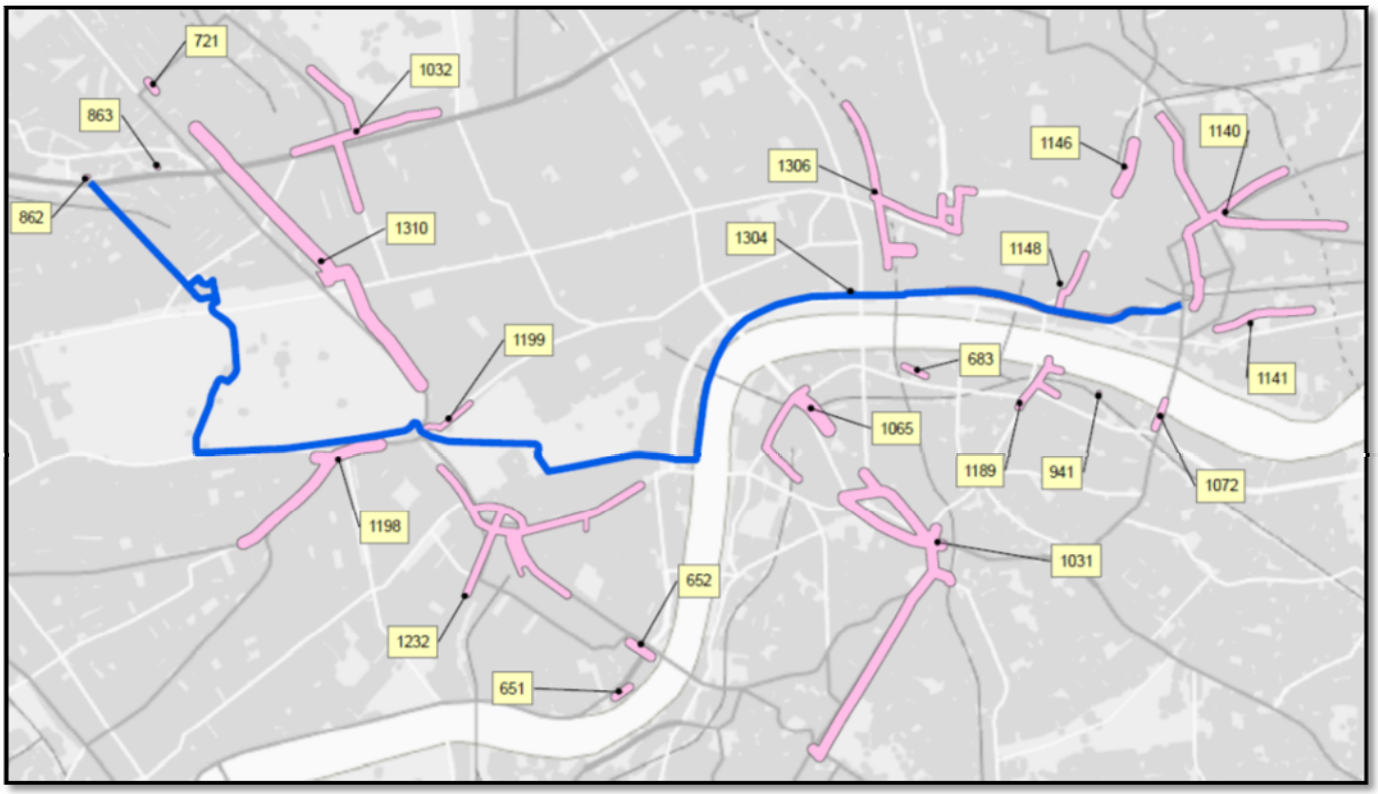


Figure 9 - Important Areas for Noise

Table 5 - Important Area for Noise

Important Area ID	London Borough	List of Roads	Length (km)
651	Westminster	A3212 Grosvenor Road	0.12
652	Westminster	A202 Vauxhall Bridge Road	0.18
683	Southwark	Southwark Street	0.17
721	Westminster	Maida Vale	0.09
862	Westminster	A40 Westway	0.02
863	Westminster	A40 Westway	0.01
941	Southwark	Bermondsey Street	0.01
1031	Lambeth & Southwark	A301 Waterloo Road, Westminster Bridge Road and A201 London Road	3.63
1032	Westminster	A501 Marylebone Road and A41 Gloucester Place	2.11
1065	Lambeth	A301 Waterloo Road, York Road and Addington Street	1.13
1072	Southwark	A100 Tower Bridge Road	0.2
1140	Tower Hamlets & City of London	A1202 Commercial Street	3.08
1141	Tower Hamlets	A1203 The Highway	0.68
1146	Tower Hamlets & City of London	Bishopsgate	0.37
1148	City of London	A3211 Upper Thames Street and A1213 Gracechurch Street	1.86
1189	Southwark	St Thomas Street, Duke Street	0.65
1198	Kens and Chelsea & Westminster	A4 Knightsbridge	1.33
1199	Westminster	A4 Piccadilly	0.41
1232	Westminster	A302 Grosvenor Place, A202 Vauxhall Bridges Road and A3214 Buckingham Palace Road	3.6
1304	City of London	A3211 Victoria Embankment	0.02
1306	Camden & City of London & Islington	A40 Newgate Street and A201 Farringdon Street	2.63
1310	Westminster	Park Lane, A5 Edgware Road	2.47

A high level noise assessment for short term impacts was carried out by Aecom following DMRB. Results show that the likely impact of the Project on noise ranges from Major Beneficial to Moderate Adverse as shown in Table 6, Figure 10 and Appendix F. The table and Appendix F shows road links where there is a change in Basic Noise Level (BNL) of over 1dB. Changes less than 1dB are deemed to be negligible. Changes between 1dB and 2.9dB are deemed to be minor. Changes between 3dB and 4.9dB are deemed to be moderate. Changes above 5dB are deemed to be major.

Table 6 – Noise Impact by Road Length

Type of Impact	Magnitude of Impact	Number of Links	Total Length of Links (km)	Number of Links within IAs	Total Length of Links within IAs (km)
Beneficial	Major	8	0.684	0	0.000
	Moderate	23	2.557	1	0.002
	Minor	107	14.983	7	1.092
Adverse	Minor	143	17.767	22	1.683
	Moderate	3	0.387	0	0.000
	Major	0	0.000	0	0.000

Figure 10 - Noise Impact

In total there are 284 links where noise changes by more than 1dB; 146 links will experience an increase in noise whilst 138 would experience a reduction in noise. The magnitude of these increases however is such that overall the Project will bring more beneficial impacts than adverse impacts as moderate or major beneficial impacts are expected on 31 links (3.09km) and moderate or major adverse impacts on 3 links (0.37km).

The noise assessment at this stage has not identified the location of sensitive receptors and the impact of noise on those sensitive receptors.

Some localised short-term slight adverse impacts on noise and vibration can be expected during the construction phase from the use of plant and vehicles.

Appropriate mitigation measures that seek to minimise noise during this phase will be put in place by the contractors. The contractors will be required to produce an Environmental Management Plan through which they will seek to minimise noise and vibration during the implementation phase.

Dust and Emissions to Air

Part of the Route passes through areas which exceed air quality standards (Figure 11).

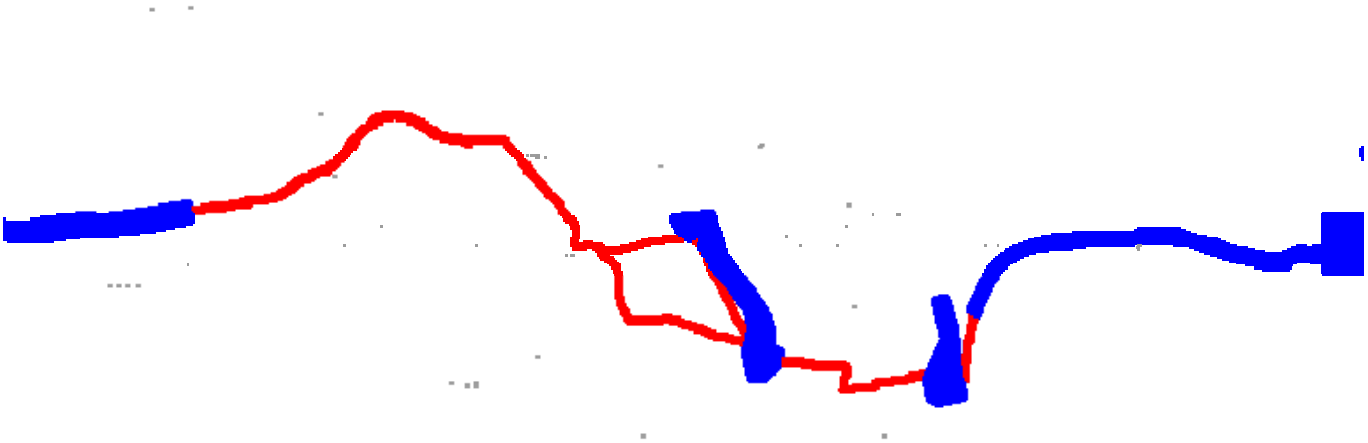


Figure 11 - Areas of Air Quality Standard Exceedance

A high level air quality assessment was carried out by Aecom following DMRB. Results show that the likely impact of the Project on air quality ranges from Significant Adverse to Significant Beneficial as shown in Table 7, Figure 12, and Appendix G. A significant impact is one of moderate or substantial impact.

Table 7 - NO_2 Impact by Road Length

Significance of Impact	Number of Links	Road Length (m)
Substantial adverse	3	411
Moderate adverse	34	3,272
Minor adverse	232	23,960
Negligible	76	7,595
Minor beneficial	123	15,289
Moderate beneficial	56	9,276
Substantial beneficial	40	5,804

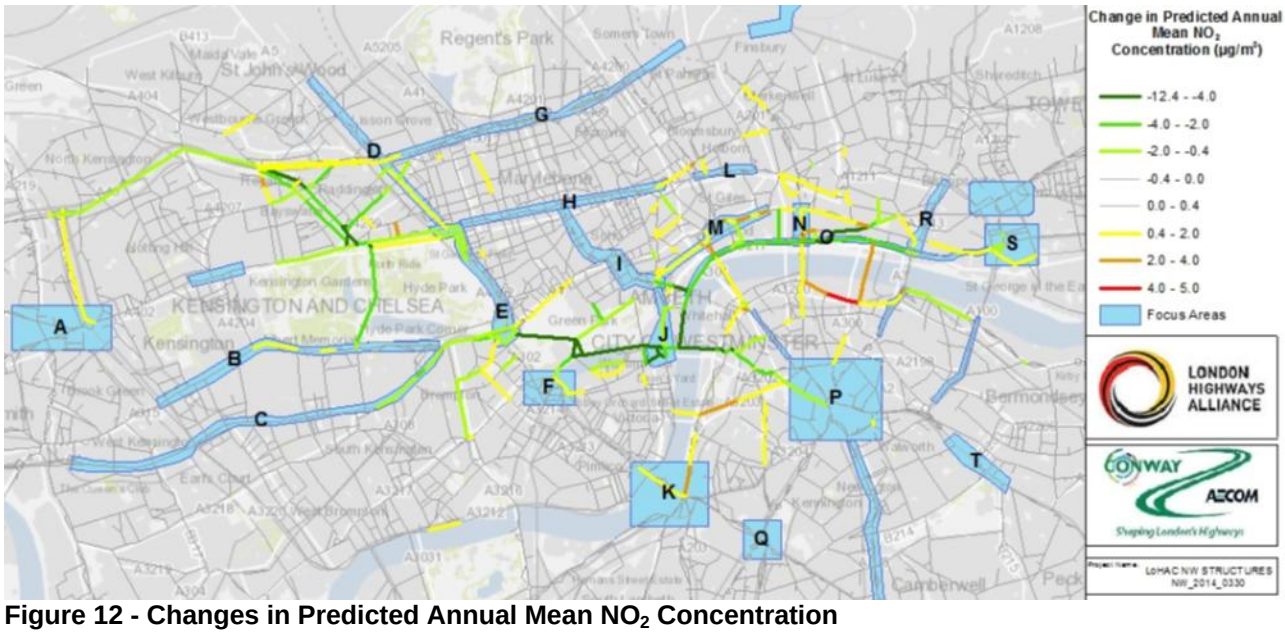


Figure 12 - Changes in Predicted Annual Mean NO_2 Concentration

The assessment focuses on the road links with a change of more than 1,000 AADT, as changes in local air quality are considered negligible below this threshold (Source: DMRB).

Overall, 27.6 km of road is expected to have adverse impacts and 30.4 km to have beneficial impacts. Of this, significant beneficial impacts are expected on 15.1 of the road network compared with significant adverse impacts on 3.7 of the road network. The study shows that changes in traffic will redistribute emissions across the study area but will not increase overall emission levels.

Some localised short-term slight impacts on local air quality can be expected during the implementation phase from the use of plant and vehicles.

The contractors will be required to produce an Environmental Management Plan through which they will seek to minimise dust and emissions to air during the implementation phase. TfL will require the contractor to comply with the Greater London Authority and London Councils' Control of Dust and Emissions from Construction and Demolition Best Practice Guidance.

Water Resources

The eastern part of the Route lies in areas identified by the Environment Agency as being at risk of flooding. The southernmost part of the route is adjacent to the River Thames. Figure 13 displays Flood Risk Zones.

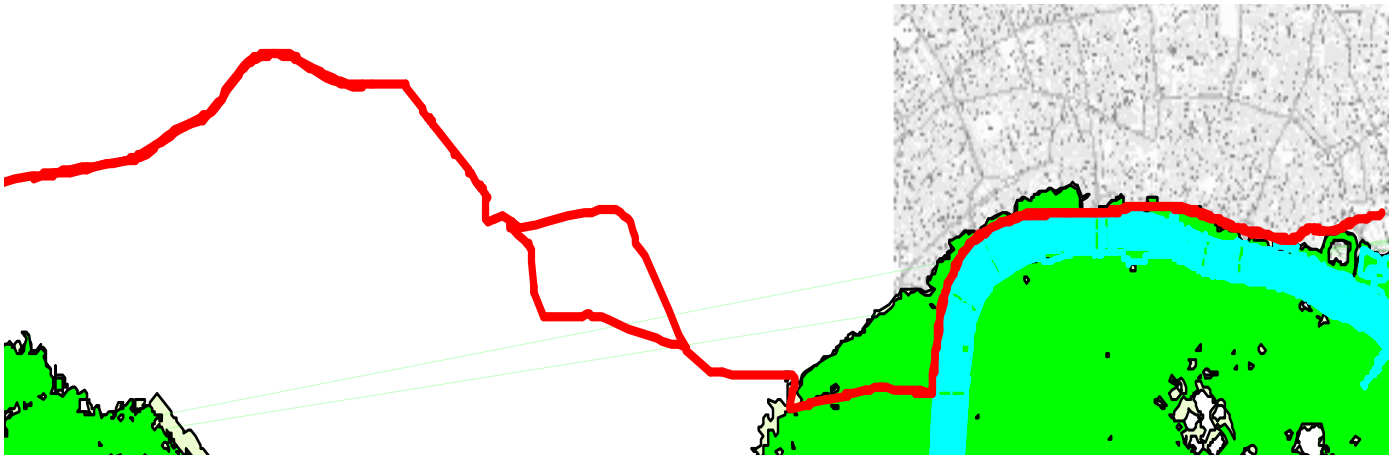


Figure 13 - Flood Risk Zones (green) and River Thames (blue)

The southernmost part of the route, along Victoria Embankment is within 16 metres from flood defence structures. As a result of this Flood Defence Consent from the Environment Agency may be required. Once the final preliminary design drawings are available, including impacts on existing street furniture and proposed signing, the need for Flood Defence Consent will be established. The project will have no impact on flood defence structures.

There will be an increase of impermeable surfaces from the removal of green estate, however it is anticipated that the risk to flooding along the Route will remain unchanged.

Overall the impact of the Project on the water environment is expected to be neutral. TAG describes a project to have a neutral impact on water when there is no appreciable effect, either positive or negative, on the identified attributes.

The contractors will be required to produce an Environmental Management Plan through which they will seek to avoid any impact to the water environment during the construction phase.

Physical Fitness

TAG advises that significant improvements in fitness and well-being are most evident in those who cycle 30km or more per week and that those people taking up physical activities will receive greater health benefits than those partaking in physical activities already.

The Project will complement other cycling initiatives but will not lead to an immediate increase in cycling trips; therefore the Project will have an initial neutral effect upon physical fitness. However, increased health benefits can be expected as the Project generates additional cycling trips in future.

TAG does not provide a seven point impact appraisal scale for Physical Fitness. However, using professional judgment a conservative slight beneficial impact of the Project upon physical fitness can be expected. The number of cycling trips and associated health benefits will ultimately depend upon individuals' personal choices. Nonetheless, the overall potential health benefit of the Project is clear, especially if the cycling activity is complemented with other physical daily activities such as walking.

Journey Experience

Different types of townscapes and the cycle routes in them provide different journey experiences to cyclists. For example canal, park and off-carriageway routes provide a better journey experience compared to on-carriageway routes.

Journey experience of cyclists along the Route is evaluated in accordance with TAG Journey Ambience methodology.

TAG identifies three components that contribute to journey experience. These are Traveller Care (cleanliness, facilities, information and environment), Traveller Views and Traveller Stress (frustration, fear of potential accidents and route uncertainty).

It is expected that Traveller Care along the Route will be improved during the operational phase of the Project, in particular:

- Cleanliness – The Route will benefit from the proposed enhanced maintenance and enforcement measures. Local Authorities will continue to be responsible for litter collection and cleansing along the Route.

- Facilities – The route will now be fully segregated and resurfaced. It will be maintained to a high standard.

- Information – Way-finding monoliths and additional signage will be out in place to provide information about the Route and the local area. Maps of the Route will be available online to help cyclists plan their journeys.

- Environment – The overall condition and smoothness of cycle rides is expected to be improved from the resurfacing of the Route and Route segregation

Views along the Route range from "restricted" (views are obscured by vegetation, fencing or buildings) to "no view" in more built up areas (views are obscured either side of the road by buildings).

Overall, it is expected that the Project will have a neutral effect on Travellers Views during the operational phase. The majority of the route is on carriageway and the route will not improve views of the area or hinder them. Travellers Views in the more built up areas may be further improved through measures such as landscape improvements and tree planting if possible.

It is expected that during the operational phase the Project will have a positive effect on Traveller Stress. The positive benefits are identified through the alleviation of three recognised causes of travel stress:

- Frustration – Congestion, road layout and geometry and the inability to make good progress along the route are usually causes of frustration. Route resurfacing and segregation will help to reduce frustration.

- Fear of potential accidents – One of the key objectives of the Project is to improve the image and perception of cycling, safety and the perception of safety. These objectives will be achieved by implementing measures such as Cycle Superhighway branding and segregation that will increase visibility of the Route to other road users. These measures combined with Smarter Travel measures such as led rides, cycle support for school leavers and HGV and freight driver training will help reduce fear of potential accidents.

- Route uncertainty – Route uncertainty would be improved through the implementation of distinctive blue branding and segregation. The Route will be signed with way-finding monoliths providing key information such as route number and average journey times to destinations. Proposed landscape improvements and lighting features are desired to provide continuity to the route but again the implementation of these is uncertain at present.

Overall the Project is going to be moderate beneficial to journey experience for cyclists

During the construction phase Traveller Views, Facilities and Frustration are expected to worsen due to the restriction or diversion of existing routes as the measures are implemented.

Sustainable Design

TfL will encourage the use of sustainable materials, particularly in the design of the street furniture. TfL will require the contractor to reduce, reuse or recycle the waste that is generated and to record quantities of all waste streams. The contractor will also be required to comply with current legislation relating to the handling, transfer and disposal of all waste materials.

TfL will seek to locate street furniture in well lit areas where no additional street lighting is required. All lighting along the route will be replaced and upgraded to current standards; however it is uncertain at this stage whether LED will be implemented. In the event that additional street lighting is needed to provide light to street furniture, the lighting will be designed and located to minimise the visual intrusion of lighting columns into the daytime streetscape and to minimise light pollution at night-time.

Despite the use of sustainable materials, adopting the waste hierarchy and promoting the use of renewable energy, a slight adverse impact in respect of greenhouse gas emissions (due to an increase in energy use during implementation and operation and fuel use during construction) and the production of waste materials, is likely.

Environmental Management

TfL will ensure that the contractors hold and maintain an environmental management system independently certified to ISO 14001:2004.

TfL will require the contractors to produce an Environmental Management Plan for the construction phase. The Environmental Management Plan will demonstrate how the contractors are going to implement appropriate environmental procedures, including preventative measures and controls for dealing with the unlikely event of environmental incidents. The contractors shall ensure that the Environmental Management Plan covers the whole of the works and highlight any site specific issues.

TfL will require the contractors to comply with current legislation relating to the handling, transfer and disposal of all waste materials including requirements set by the Waste Management Plans Regulations 2008 and Waste Electrical and Electronic Equipment Regulations 2006.

TfL will require the contractors to comply with the *Greater London Authority and London Councils' Control of Dust and Emissions from Construction and Demolition Best Practice Guidance*.

TfL will require the contractors to follow the British Standard *BS 5837:2005, Trees in relation to construction – Recommendations* and NJUG's *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees* and that Local Authority Tree Officers and TfL Arboricultural and Landscape Managers are consulted about the potential impact that the Project can have on trees along the Route.

In the unlikely event that excavation for the installation of way-finding monoliths is over one metre in depth, TfL will require the contractors to hand-dig the site if in an archaeological priority area and if archaeological remains are found, work shall stop and will only resume after approval from the relevant Local Authority conservation officer and / or English Heritage is received.

In the unlikely event that protected species are present on site during works, TfL will ensure that only Defra licensed ecologists handle protected species.

To ensure compliance, TfL will monitor the performance of the contractors as works progress.

Appendix A: Environmental Evaluation Report Template

Environmental Evaluation Report
-
Improvement Projects and Capital Renewal Schemes

The Environmental Evaluation Report defines the requirements for achieving the appropriate level of environmental evaluation for a project so that negative environmental impacts are understood and minimised, environmental benefits are enhanced, environmental risks are managed, challenges to the project are reduced and the required relevant environmental consents, permits and licenses are identified.

The Report provides assurance to the Project Manager, Client and Environmental Manager that the project's design and performance, the appraisal, monitoring and sampling methodology used, and other technical and reporting activities are of the required quality and standard to meet TfL's environmental obligations.

Contents:

The Report contains a number of questions and bullet points which are intended to be key prompts. These do not represent an exhaustive list of best available practice or required consents, permits and licences. As such, expert environmental advice should be sought from the relevant expert if in doubt.

Version 4

Project Information

Project / Scheme Name:	
Project Code:	
Description of site, project / scheme and construction activities:	

Appraisal Summary

Impacts and Further Appraisal

Comment:

	TfL (Planning and Design Stage)							Contractor (Design and Construction Stage)						
	Adverse			Neutral	Beneficial			Adverse			Neutral	Beneficial		
	Large	Moderate	Slight		Slight	Moderate	Large	Large	Moderate	Slight		Slight	Moderate	Large
Natural Environment														
Cultural Heritage														
Air Quality (NO_2 & PM_{10})														
Climate Change Mitigation (CO_2)														
Climate Change Adaptation														
Noise and Vibration														
Soil and Water														
Community														
Built Environment														
Cumulative Impacts														

C – Construction O – Operation

	TfL	Contractor
The Project/Scheme has no significant impacts on the environment - **No further appraisal is required**		
The Project/Scheme may have significant impacts on the environment - **Further appraisal is required**		

Required Actions

Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)			
	Measure	**TfL**	**Contractor**
2.1,2.3,2.4, 2.5,2.6,2.7, 6.1,6.3	Contact the TfL Arboriculture and Landscape Route Manager if likely to impact any element of the green estate		
2.1, 2.2, 6.2	Follow British Standard BS 5837:2005, Trees in relation to construction – Recommendations' and the 'National Joint Utilities Group's Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees'.		
2.1	Removal of any green estate asset requires approval via SQA99. This includes affected 3rd party assets.		
2.3	Injurious weeds shall be treated as controlled waste unless herbicide is present, in which case they shall be treated as hazardous waste		
2.7,3.1,3.2, 8.3,8.5,8.6, 13.1	Contact TfL Environmental Manger		
4.4	Works should be carried out in accordance with the Greater London Authority and London Councils 'The Control of Dust and Emissions from Construction and Demolition; Best Practice Guidance (2006)'.		
4.4	Contractors should be encouraged to fit emission controls to all vehicles, plant and equipment where possible		
4.4,5.3,7.1	Vehicles, plant and equipment should be turned off when not in use.		
4.4,5.3	Vehicles, plant and equipment should be inspected and maintained regularly.		
5.2	A Carbon and Energy Efficiency Plan (CCEP) may be required		
5.3	The Contractor should be encouraged to use energy and fuel efficient vehicles, plant and equipment where possible		
7.1	BS5228 Parts 1 and 2 – *Noise and vibration control on construction and open sites* should be adhered to		
7.1	Consider alternative 'quiet' running plant and equipment.		
7.1	Noisiest activities should be planned during 'normal working hours'		
7.3	Obtain Section 61 consent from the local authority environmental health officer.		
8.3	Consent for Works Affecting Watercourse and / or Flood Defences is required from the Environment Agency.		
8.3	Prepare a detailed Method Statement to support application for consent.		
8.3	Adhere to the Environment Agency's Pollution Prevention Guidelines.		
8.5	Environmental Permit is required from the Environment Agency.		
8.6	Trade Effluent consent is required from Thames Water.		
9.2	The worksite should be kept tidy and in good order, with minimal disturbance and footprint.		
9.2	The use of floodlights and flashing lights should be minimised, where possible and positioned away from residences and oncoming traffic.		

Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)			
	Measure	**TfL**	**Contractor**
9.4	Traffic management measures should be timed to minimise disruptions and should be clearly signed.		
12.1	Hazardous substances must be stored away from sensitive receptors such as watercourses, habitat areas and residences.		
12.1	Outside storage of oil (i.e. fuel) over 200 litres must comply with the Oil Storage Regulations		
12.1	Hazardous substances must be stored in a secure location within drip trays and/or bunds.		
12.1	Refuelling should be undertaken within a designated impermeable, bunded area or undertaken off site.		
12.1	Spill kits must be readily available.		
13.1	Site Waste Management Plan (SWMP) is required. Use TfL SWMP Template		
13.2	Ensure waste containers are not damaged and are suitable and safe for the type of waste.		
13.2	Ensure that all waste containers are clearly labelled		
13.2	Prevent dispersal of waste by wind, rain, animals or people.		
13.2	Store waste away from drains, water courses and trees		
13.2	Reduce the amount of waste created on site.		
13.2	Reuse materials on site wherever possible.		
13.2	Segregate waste for recycling		
13.2	Ensure that the company removing waste is registered as a Waste Carrier.		
13.2	Ensure that the waste is taken to an authorised waste facility		
13.3	All hazardous waste must be segregated from general waste.		
13.3	Ensure that consignment notes are retained.		
13.3	If more than 500 KGs of hazardous waste is produced each year, then the site must be registered as a hazardous waste premises with the Environment Agency.		

	TfL	**Contractor**
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

Appraisal

		TfL	
1	**Determination of need for Environmental Impact Assessment (EIA) – ONLY FOR IMPROVEMENT PROJECTS**	**YES**	**NO**
1.1	Is the project listed in Schedule 1 of the EIA Regulations? If so which section and paragraph?		
1.2	As defined in the EIA Regulations, is the project an Urban Development over 0.5 hectare (5,000m^2) (Schedule 2 10(b)) or the Construction of a Road exceeding 1 hectare (10,000m^2) (Schedule 2 10(f))?		
1.3	Is the project in or within 2km of a sensitive site, as defined by the EIA Regulations i.e. National Nature Reserve, Scheduled Monument, SAC, SPA, SSSI, World Heritage Site? If so, which?		
1.4	**Does the project require EIA?**		

Comments and Recommendations	None

		TfL		Contractor	
2	**Natural Environment**	**YES**	**NO**	**YES**	**NO**
2.1	Will works affect grassed or planted areas as a result of land-take, excavation or temporary use of the grassed or planted areas? If YES: • Contact the TfL Arboriculture and Landscape Route Manager • Removal of any green estate asset requires approval via SQA99. This includes affected 3rd party assets. • Follow British Standard BS 5837:2005, Trees in relation to construction – Recommendations' and the 'National Joint Utilities Group's Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees'.				
2.2	Will the works be in close proximity to grassed or planted areas or trees? If YES: • Follow British Standard BS 5837:2005, Trees in relation to construction – Recommendations' and the 'National Joint Utilities Group's Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees'.				

		TfL		Contractor	
2	**Natural Environment**	**YES**	**NO**	**YES**	**NO**
2.3	Are there any known injurious weeds in the vicinity of the works? If YES: • Contact the TfL Arboriculture and Landscape Route Manager • Injurious weeds shall be treated as controlled waste unless herbicide is present, in which case they shall be treated as hazardous waste				
2.4	Is new or replacement planting proposed? If YES: • Contact the TfL Arboriculture and Landscape Route Manager				
2.5	Is there scope for new or enhanced planting in the area? E.g. empty planters or tree pits, unused land, room on the footway for street trees, existing green space in poor condition. If YES: • Contact the TfL Arboriculture and Landscape Route Manager				
2.6	Are protected species, sightings of protected species or areas of habitat potential present with 200 metres of the works? If YES: • Contact the TfL Arboriculture and Landscape Route Manager • Contact the TfL Environmental Manager Note: Only Defra licensed ecologists are to handle protected species				
2.7	Are designated landscape sites (i.e. Metropolitan Open Land, Green Belt, Commons), Sites of Importance for Nature Conservation (SINC) or areas of habitat potential present with 200 metres of the works? If YES: • Contact the TfL Arboriculture and Landscape Route Manager • Contact the TfL Environmental Manager Note: biodiversity features must be protected in accordance with the requirements of the relevant authority (e.g. Natural England or Local Authority).				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		C				O			
Impact on the Natural Environment		0	1	2	3	0	1	2	3
	+								
	-								

C – Construction O – Operation

Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
3	**Cultural Heritage**	**YES**	**NO**	**YES**	**NO**
3.1	Are heritage features such as a Conservation Area within 100m, listed buildings within 50m, registered park and garden within 200m, London Square or archaeological features (e.g. London Wall) within 50m from the works. Are the works within an archaeological priority area? If YES: • Contact the TfL Environmental Manager Note: Heritage or archaeological feature must be protected in accordance with the requirements of the relevant authority (e.g. English Heritage or Local Authority).				
3.2	Are heritage or archaeological artefacts encountered on site during the works? If YES: • Works should cease immediately. • Consult the relevant authority (e.g. English Heritage or Local Authority). • Contact the TfL Environmental Manager	n/a	n/a		

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		C				O			
Impact on Cultural Heritage		0	1	2	3	0	1	2	3
	+								
	-								

C – Construction O – Operation

Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
4	**Air Quality (PM_{10} & NO_2)**	**YES**	**NO**	**YES**	**NO**
4.1	Upon completion, will the project /scheme generate additional stop and start traffic conditions?				
4.2	Is the project /scheme in a road flanked by tall buildings on either side (i.e. street canyon) which prevent pollutants from dispersing?				
4.3	Will dust be generated as a result of the works? If YES: • Works should be carried out in accordance with the Greater London Authority and London Councils '*The Control of Dust and Emissions from Construction and Demolition; Best Practice Guidance (2006)*'.				
4.4	Are vehicles, plant and equipment to be used? If YES: • Contractors should be encouraged to fit emission controls to all vehicles, plant and equipment where possible • Vehicles, plant and equipment should be turned off when not in use. • Vehicles , plant and equipment should be inspected and maintained regularly.				
4.5	Is the project in an air quality management area, in a focus (NO_2) area or in an air quality priority area (PM_{10})? Specify				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
Impact on Air Quality		0	1	2	3	0	1	2	3
	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
5	**Climate Change Mitigation (CO_2)**	**YES**	**NO**	**YES**	**NO**
5.1	Upon completion, will the project/scheme increase congestion?				
5.2	Will the project/scheme affect energy consumption? If YES: • A Carbon and Energy Efficiency Plan (CEEP) may be required				
5.3	Are vehicles, plant and equipment to be used? If YES: • The Contractor should be encouraged to use energy and fuel efficient vehicles, plant and equipment where possible • Vehicles, plant and equipment should be turned off when not in use. • Vehicles, plant and equipment should be inspected and maintained regularly.				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
Impact on Climate Change Mitigation		0	1	2	3	0	1	2	3
	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
6	**Climate Change Adaptation**	YES	NO	YES	NO
6.1 (2.1)	Will works require land take, excavation or temporary use of the grassed verge or planted areas which will increase hard surfaced area and/or surface water run-off? If YES: • Contact the TfL Arboriculture and Landscape Route Manager				
6.2 (2.2)	Will the works be in close proximity to or require the removal or disturbance of street trees? If YES: • Contact the TfL Arboriculture and Landscape Route Manager • Follow British Standard BS 5837:2005, Trees in relation to construction – Recommendations' and the 'National Joint Utilities Group's Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees'.				
6.3 (2.4)	Is new or replacement planting proposed? If YES: • Contact the TfL Arboriculture and Landscape Route Manager				
6.4 (8.1)	Upon completion, will the project/scheme increase hard surfaced area and/or surface water run-off? If YES: • Consider the introduction of Sustainable Urban Drainage Systems (SUDS)				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
		0	1	2	3	0	1	2	3
Impact on Climate Change Adaptation	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
7	**Noise**	YES	NO	YES	NO
7.1	Are works likely to create noise and vibration that will disturb residences, schools, hospitals, places of worship, sensitive habitats or other sensitive receptors? If YES: • BS5228 Parts 1 and 2 – *Noise and vibration control on construction and open sites* should be adhered to. • Vehicles, plant and equipment should be turned off when not in use. • Consider alternative 'quiet' running plant and equipment. • Noisiest activities should be planned during 'normal working hours'				
7.2	Are the works in an Important Area for noise?				
7.3	Are works required to be carried out at night or outside of 'normal working hours'? If YES: • Obtain Section 61 consent from the local authority environmental health officer.				
7.4	Upon completion will the project move traffic closer to residences, schools, hospitals, places of worship, sensitive habitats or other sensitive receptors?				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
		0	1	2	3	0	1	2	3
Impact on Noise and Vibration	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
8	**Soil and Water**	**YES**	**NO**	**YES**	**NO**
8.1	Upon completion, will the project/scheme increase hard surfaced area or water run-off? If YES: • Consider the introduction of Sustainable Urban Drainage Systems (SUDS)				
8.2	Is the project/scheme within a flood risk area? If YES: • Consider the introduction of Sustainable Urban Drainage Systems (SUDS)				
8.3	Are the works in, over or under a watercourse or within 16 metres of a tidal river or 8 metres from a non tidal river, river bank, river wall, embankment or flood defence structure? If YES: • Contact the TfL Environmental Manager. • Consent for Works Affecting Watercourse and / or Flood Defences is required from the Environment Agency. • Prepare a detailed Method Statement to support application for consent. • Adhere to the Environment Agency's Pollution Prevention Guidelines.				
8.4	Have there been instances of blocked gullies or drainage issues?				
8.5	Is discharge to a watercourse or waterbody required? Are any dewatering activities required? If YES: • Contact the TfL Environmental Manager. • Environmental Permit is required from the Environment Agency.				
8.6	Is discharge to a sewer required? If YES: • Contact the TfL Environmental Manager. • Trade Effluent consent is required from Thames Water.				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
		0	1	2	3	0	1	2	3
Impact on Soil and Water	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
9	**Community**	**YES**	**NO**	**YES**	**NO**
9.1	Upon completion, will the project/scheme be visually intrusive or cause light pollution to residences, schools, hospitals, places of worship, sensitive habitats or other sensitive receptors?				
9.2	Can residents and users of nearby premises view the works? If YES: • The worksite should be kept tidy and in good order, with minimal disturbance and footprint. • The use of floodlights and flashing lights should be minimised, where possible and positioned away from residences and oncoming traffic.				
9.3	Upon completion, will the project/scheme have moved traffic closer to residences, schools, hospitals, places of worship, sensitive habitats or other sensitive receptors?				
9.4	Will the works require diversion routes or temporary alterations to accesses? If YES: • Traffic management measures should be timed to minimise disruptions and should be clearly signed.				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
		0	1	2	3	0	1	2	3
Impact on Community	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
10	**Built Environment**	YES	NO	YES	NO
10.1	Would the project impact on the townscape?				
10.2	Would the project/scheme benefit from a Design Review and/or surgery? Note: Design Review for projects over £2m is compulsory				
10.3	Is the project/scheme compliant with TfL Streetscape Guidance?				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
		0	1	2	3	0	1	2	3
Impact on Community	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
11	**Cumulative Impacts**	YES	NO	YES	NO
11.1	Will the project cumulatively cause adverse or positive impacts to any of the above if the evaluation took account of any other related project and / or schemes in the area?				

Key: 0=Neutral, 1=Slight, 2=Moderate, 3=Large

		TfL				Contractor			
		0	1	2	3	0	1	2	3
Impact on Community	+								
	-								

C – Construction O – Operation

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
12	**Hazardous Substances**	YES	NO	YES	NO
12.1	Will the works require the use of fuels, chemicals or other hazardous substances? If YES: • Hazardous substances must be stored away from sensitive receptors such as watercourses, habitat areas and residences. • Outside storage of oil (i.e. fuel) over 200 litres must comply with the Oil Storage Regulations • Hazardous substances must be stored in a secure location within drip trays and/or bunds. • Refuelling should be undertaken within a designated impermeable, bunded area or undertaken off site. • Spill kits must be readily available.				

	TfL	Contractor
Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
13	**Waste**	**YES**	**NO**	**YES**	**NO**
13.1	Will the works cost in excess of £300,000? If YES: • Follow the relevant Pathway Waste Management product • Contact the TfL Environmental Manager • Site Waste Management Plan (SWMP) is required. • Use the TfL Site Waste Management Plan Template				
13.2	Will the works generate waste? If YES: • Ensure waste containers are not damaged and are suitable and safe for the type of waste. • Ensure that all waste containers are clearly labelled • Prevent dispersal of waste by wind, rain, animals or people. • Store waste away from drains, water courses and trees • Reduce the amount of waste created on site. • Reuse materials on site wherever possible. • Segregate waste for recycling • Ensure that the company removing waste is registered as a Waste Carrier. • Ensure that the waste is taken to an authorised waste facility				
13.3	Will the works generate hazardous waste, including contaminated soil? If YES: • All hazardous waste must be segregated from general waste. • Ensure that consignment notes are retained. • If more than 500 KGs of hazardous waste is produced each year, then the site must be registered as a hazardous waste premises with the Environment Agency.				

Is further appraisal required?		
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)		
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)		
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)		
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)		

		TfL		Contractor	
14	**Environmental Incidents**	**YES**	**NO**	**YES**	**NO**
14.1	Has any polluting substance been spilled over land, into a drain or watercourse? If YES: • Contact the Environment Agency • Inform the TfL Environmental Manager	n/a	n/a		
14.2	Has any protected animal or habitat been harmed or damaged during the works? If YES: • Contact the TfL Environmental Manager • Contact the TfL Aboriculture and Landscape Manager	n/a	n/a		
14.3	Has any tree, planted area or grassed area been harmed or damaged during the works? If YES: • Contact the TfL Aboriculture and Landscape Manager	n/a	n/a		

Is further appraisal required?	n/a	
Control, Mitigation and Enhancement Measures (list measures aimed at mitigating against negative environmental impacts, enhance environmental benefits and control environmental risks)	n/a	
Monitoring Systems (Describe the checks that are in place to ensure that the control and mitigation measures outlined above are implemented correctly)	n/a	
Environmental Consents, Licenses and Permits (List any environmental consent, license and permit required for the works and explain how these will be obtained)	n/a	
Staff environmental training (List any staff environmental training required to ensure that control, mitigation and enhancement measures are carried out in a suitable manner. Describe timing and frequency of training)	n/a	

Approvals							
TfL				Contractor			
	Date		Completed by		Date		
TfL Environmental Manager				Contractor Environmental Manager			
	Date		Confirmed by		Date		
TfL Project Manager				Contractor Project Manager			
	Date		Issued to		Date		
TfL Arboriculture and Landscape Route Manager				TfL Arboriculture and Landscape Route Manager			
			Issued to		Date		
				Contractor Landscape Advisor			
			Issued to		Date		
				TfL Environmental Manager			

Note to TfL Project Manager: Contact the TfL Environmental Manager if details of the project change.		Note to Contractor Project Manager: Contact the Contractor Environmental Advisor if the details of the project change

Supporting Information (e.g. drawing, maps)

Appendix B: Relevant Planning and Transport Policies

The table below outlines the national, regional and local planning and transport policy documents which the Project supports.

Policy Document	Scale	Conformity with Policy
National Planning Policy Framework 2012	National	**Sustainable Development:** The planning system should secure more sustainable patterns of transport development and improved accessibility to facilities by walking, cycling and public transport should be encouraged. The Project will encourage access to facilities within the Project's area by cycling. **Planning and Climate Change:** Spatial planning should contribute to reducing carbon emissions and stabilising climate change (mitigation) and take into account the unavoidable consequences (adaptation).The Project will promote cycling which at point of use has no carbon emissions. **Biodiversity and Geological Conservation:** Planning policies on the protection of biodiversity and geological conservation through planning decisions aim to maintain, enhance, restore or add to biodiversity and geological conservation interests. The Project's design will seek to maintain biodiversity and ensure that no adverse impacts on biodiversity will occur. Tree planting and landscape improvements are planned if possible. **Transport:** Requirement to promote accessibility to jobs, shopping, leisure facilities and services by way of public transport, walking and cycling. The policy supports solutions to reduce greenhouse gas emissions and congestion giving priority to pedestrian and cycle movements. The policy also states that developments should create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians; which this project clearly sets out to do. The Project is consistent with the aims of the policy as it will promote accessibility to jobs, shopping, leisure facilities and services by way of cycling. **Planning and the Historic Environment:** There is a requirement that special attention should be paid to the desirability of preserving or enhancing the character or appearance of any conservation area. Developments with less than substantial harm to the significance of a designated heritage asset should be weighed against the public benefits of the proposal. This development will not cause an adverse negative impact on the conservation areas and there will be great benefits to the public. It is advised that development within the historic environment should be of a high quality design. The Project is to consider the preservation of the appearance of conservation areas and where possible aims to ensure that street furniture will be of a high quality design. There is a need to assess the possibility of archaeological remains being found if excavations are set to be carried out. Works on site must stop immediately if archaeology is found. **Planning and Noise:** This policy framework guides local authorities on the use of their planning powers to minimise the adverse impact of noise. It outlines the considerations to be taken into account in determining planning applications both for noise-sensitive developments and for those activities which generate noise. The Contractors appointed to deliver the Project will be required to produce an Environmental Management Plan which amongst other things will need to address how noise is to be minimised during the Project's implementation phase. **Development and Flood Risk:** The Policy framework ensures that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. The Project should seek to obtain the relevant Flood Defence consent if required.

Policy Document	Scale	Conformity with Policy
Planning Policy Statement 10: Planning for Sustainable Waste Management (PPS10)	National	PPS10 helps deliver sustainable development through driving waste management up the waste hierarchy, addressing waste as a resource and looking to disposal as the last option, but one which must be adequately catered for. The Contractors appointed to deliver the Project will be required to produce a Site Waste Management Plan.
White Paper: The Future of Transport: A Network for 2030	National	The Paper, amongst other things, aims to make cycling a real alternative for local trips. The Project is designed to facilitate and promote bicycle trips, which would have otherwise been made by bus, tube or car.
The Eddington Transport Strategy	National	The Report examines the long-term links between transport and the UK's economic productivity, growth and stability, within the context of the Government's broader commitment to sustainable development. The Report demonstrates that small-scale interventions such as cycling are often the most cost-effective solutions.
Sustainable Future for Cycling	National	The Report recognises the important contribution of cycling as a sustainable form of transport and how cycling contributes to every one of the five goals set out in Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World, namely: competitiveness and productivity, climate change; health, security and safety; quality of life; and equality of opportunity.
The Mayor's Transport Strategy (March 2012)	Regional (London)	The Strategy recognises that transport investment in new major projects such as those that promote and encouraging cycling is required to achieve sustainable growth. The Strategy also recognises the health benefits of cycling.
Way to Go! (November 2008)	Regional (London)	Publication which outlines the Mayor's vision for transport and intended revisions to the Transport Strategy. The Publication makes specific reference to the previous and ongoing Cycle Superhighway projects.
The Mayor's Transport Strategy (Public Draft, October 2009-January 2010)	Regional (London)	Publication which outlines Londons' transport strategy. The Publication makes specific reference to the previous and ongoing Cycle Superhighway projects.
London Cycle Action Plan (February 2004)	Regional (London)	The Plan sets out measures to help achieve the Mayor's vision of developing London as an exemplary sustainable world city. In particular the Plan seeks to increase cycle accessibility, safety and priority, it gives support for innovative cycle Projects and it seeks to promote cycling and its status.
Living Well in London – The Mayor's Draft Health Equalities Strategy for London (January 2008)	Regional (London)	The Draft Strategy sets out a framework to reduce health inequalities. In doing so it seeks to develop and promote London as a healthy place for all through the provision of high quality cycling opportunities, continued investment in sustainable modes of transport and the planning of developments that are sustainable.
The London Plan 2011 (revised early minor alterations REMA 2013)	Regional (London)	The Plan places importance on sustainable development that takes into account impacts on natural resources, environmental and cultural assets and the health of local people. REMA states that new development should be supported by necessary and accessible health and social infrastructure. The Plan also seeks to achieve an increase in the capacity, quality and integration of public transport in London, support shifts to more sustainable modes of transport and improve the

		provision of cycling facilities.

Policy Document	Scale	Conformity with Policy
Planning for a Better London (published July 2008)	Regional (London)	The Report sets out the Mayor's strategic thinking and outlines key areas to be covered in what is now new revision of the London Plan (2011). The Report further highlights the importance of establishing a strategic planning framework supportive of cycling.
The London Plan (Consultation draft replacement plan, October 2009	Regional (London)	Publication which outlines London's landuse strategy. The Publication makes specific reference to the previous and ongoing Cycle superhighway projects.
The Mayor of London Air Quality Strategy	Regional (London)	The Strategy presents policies and proposals aimed at improving London's air quality. Measures seek to facilitate a major improvement in public transport capacity, and encourage a shift from car travel towards cycling and other sustainable forms of travel. The Project will promote cycling and as such will support the Strategy.
Clearing the air (The Mayor's draft Air Quality Strategy for consultation with the London Assembly and functional bodies, October 2009)	Regional (London)	The Strategy sets measures to reduce concentrations of particulate matter (PM10) and nitrogen dioxide (NO2). The Publication makes specific reference to the previous and ongoing Cycle Superhighway projects.
The Mayor of London Noise Ambient Strategy	Regional (London)	The Strategy seeks to actively manage long term noise, mainly from transport sources. The Strategy recognises that modal shift away from motorised vehicles towards cycling for instance, can contribute to a reduction of transport related noise. The Project will promote cycling and as such will support the Strategy.
The Mayor of London Biodiversity Strategy	Regional (London)	The Strategy seeks to ensure that there is no overall loss of wildlife habitats in London, and that more open spaces are created and made accessible to all Londoners. The Project team is unsure at this stage as to whether there will be a loss of green space as a result of the Project's implementation.
The Mayor of London Climate Change Action Plan	Regional (London)	The Plan recommends key actions to help London and Londoners tackle climate change. Cycling is recognised as one measure that can help reduce transport related carbon emissions. The Project will promote cycling and in doing so it will support the Plan.
Cycling Revolution London strategy, published in 2010	Regional (London)	This strategy advertises cycling as a major transport mode right across the capital, from central London to the outer boroughs. It supports the creation of streets and spaces where everyone respects each other's right to use the road and as a result reduce cycling casualties. It aims to promote cycling as an enjoyable, everyday, healthy activity. It states that cycling needs to be embedded into the way the city is planned and run. The project will accomplish these points.
London Borough of Tower Hamlets Unitary Development Plan (UDP)	Local (Tower Hamlets)	The Plan seeks to improve the safety and convenience of movement for all road users, especially cyclists and other sustainable forms of transport. The Plan also seeks to restrain the unnecessary use of the private car in order to achieve a more balanced road space between users. The Project has the potential to reduce traffic through encouraging and promoting cycling and thus is consistent with the Plan.

Policy Document	Scale	Conformity with Policy
London Borough of Tower Hamlets Local Development Framework (LDF)	Local (Tower Hamlets)	The Options and Alternatives Paper seeks to protect land needed for future transport infrastructure and ensure sustainable forms of transport. A preferred strategy seeks to improve cycling routes and connections to major destinations. The Project, through providing for a sustainable mode of transport is thus consistent with the Plan.
City of London Unitary Development Plan (UDP)	Local (City of London)	The Plan seeks to achieve a reduction in the overall level of traffic in the City in order to allow for more efficient public transport operations and improve air quality, the general environment and safety. The Plan also encourages additional and improved capacity in public transport services. The Project, by providing for a sustainable mode of travel is consistent with the UDP's public transport strategy.
City of London Local Development Framework (LDF)	Local (City of London)	The Preferred Options Paper outlines a number of preferred policy approaches for the future development of the City of London. Some approaches seek to ensure that the impact on the environment of travel in and through the City is minimised. Other options seek to improve sustainability, integration, reliability, safety, capacity and accessibility of all modes of public transport. The Project, through providing for a sustainable mode of transport is thus consistent with the Plan.
City of London Local Implementation Plan (LIP)	Local (City of London)	The Plan highlights a need to promote and encourage cycling and improvements to cycling facilities. The Project, through promoting cycling and improving cycling facilities is consistent with the Plan.
Westminster City Unitary Development Plan (UDP)	Local (City of Westminster)	The Plan seeks to encourage and promote cycling as a healthy, efficient, sustainable and effective form of transport, which produces no emissions and which often allows a journey to be made more quickly than by a private car. The Plan therefore seeks to restrain the unnecessary use of the private car in order to achieve a more balanced road space between users. The Project has the potential to reduce traffic through encouraging and promoting cycling as a sustainable mode of transport and thus is consistent with the Plan.
Westminster City Local Development Framework (LDF)	Local (City of Westminster)	The Plan aims to address road transport and congestion with a need for better provision for pedestrians and cyclists. it also aims to improve the air quality to reduce the pressure on the natural and built environment. The Plan seeks to promote and improve health and well-being and improve air quality by encouraging walking, cycling and the use of public transport. The Project has the potential to encourage cycling thereby contributing to improving the air quality; therefore this project is consistent with the plan.
Westminster City Local Implementation Plan (LIP)	Local (City of Westminster)	The Plan highlights the fact that Westminster City is a very busy and therefore issues such as congestion, overcrowding, poor air quality, noise and road safety can arise. Cycling is encouraged to promote a healthier lifestyle, improve air quality and reduce traffic on the roads. The Project, through promoting cycling and improving cycling facilities is consistent with the Plan.
The Mayors vision of cycling in London	Regional (London)	The Mayor wants to attract and encourage cycling in London. By planning to create segregated cycle lanes the protection of cyclists, through their own dedicated space along the route, is seen as attractive, comfortable and safe. The cycle superhighway routes are labelled as "a Crossrail for the bike". The project will adhere to the Mayors vision of cycling in London.

Policy Document	Scale	Conformity with Policy
Policy CE1: Climate Change	Local (Kensington and Chelsea)	The Transportation and Highways Department will work in partnership with Transport for London to encourage streetscape and traffic management improvements which remove physical barriers to social and community uses and local shopping centres, making them inclusive for all, and improve cycling and walking environments in the Borough. Any new development must encourage walking, cycling and public transport use, whilst not encouraging the use of private cars. This project does exactly that. In particular the roads on the Transport for London Road Network present a hostile environment to pedestrians and cyclists therefore the CS is needed to make these well used routes safer and less polluted.
London Borough of Hammersmith and Fulham Core Strategy (replaced UDP as of 2011)	Local (Hammersmith and Fulham)	The council supports improved provision for cycling and walking as both are environmentally friendly means of transport and can help improve people's health. Any major developments in the borough will provide improved access, for pedestrians and cyclists. The borough is working with TfL to do this and therefore the CS scheme will be accepted as it increases opportunities for safe and quality walking and cycling in the borough. The Core Strategy realises that cycling will have a number of benefits, ranging from improving people's health to helping to tackle climate change.
Development Management Local Plan	Local (Hammersmith and Fulham)	The council wishes to encourage cycling, and the riverside walk can and should also provide a traffic-free route for cyclists. Just as the borough has mentioned about the riverside walk, the CS can also provide a traffic free way of travelling. The plan mentions that there needs to be an increase in cycling to tie in with the Mayor's strategy of increasing cycling. In addition the London Plan and the London Cycling Campaign are recognised as vital to consider when developing the borough.

Appendix C: Evaluation of Conservation Areas

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
The Tower	The Tower Conservation Area was designated in March 1977. It is one of the largest and most significant Conservation Areas in the Borough, and encloses buildings and sites of national and international importance. It is defined by the River Thames to the south, the boundary with the City of London to the north-west, by East Smithfield and the railway viaduct to the north-east and by Thomas More Street to the east. It has two distinct character areas – the Tower of London itself to the west, and the area around St. Katharine's Docks to the east. It is an area of exceptional architectural and historic interest, with a character and appearance worthy of protection and enhancement. The Tower Conservation Area encloses the Tower of London World Heritage Site (WHS), one of 27 World Heritage Sites in the UK.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Trinity Square	The area defines the land-ward setting to the Tower of London and includes historic buildings and spaces with individual character. The area is contiguous with Tower Hamlet's conservation area.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Crescent	An area which includes early examples of the introduction of planned Georgian residential crescents and circuses to London in the late 18th century. The principal interest of Crescent Conservation Area is the eighteenth-century street plan incorporating Crescent and Circus, which has special significance in the history of town planning in the City and London. The sequence of Square, Crescent and Circus in this location marked a significant development in London town planning. When built it was one of the earliest planned residential developments in London and is one of the few such developments of this date to survive. The rebuilt and replicated Georgian houses of Crescent set the tone for the character and appearance of the conservation area and provide a strong visual reference to its late-eighteenth-century appearance. The section of Roman and medieval City wall, a Scheduled Ancient Monument, to the rear of Crescent is the best surviving section of the structure in the City and one of the highest sections of intact medieval work. The conservation area forms part of the Tower of London World Heritage Site Local Setting.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Eastcheap	Designated a Conservation area in December 1981, Eastcheap is in the Wards of Billingsgate and Bridge. It covers an area of 2.3 hectares. It is an area which retains it irregular layout of medieval streets leading down to the River Thames. The area has strong historical connections to Billingsgate Market and the Thames. The area is made up of significant survivals of post-Fire development including three Wren churches and a collection of notable listed buildings, as well as numerous unlisted buildings of high architectural quality from different periods. The area is characterised by commercial and warehouse buildings and is of high archaeological potential for remains of all periods, where important Roman and medieval remains have been recorded.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Queen Street	This Area was designated a Conservation Area in May 1991. This Area is formed of historic commercial buildings set within a network of streets and lanes leading down to the river. The street plan includes significant interventions from the late-17th, mid-19th centuries, and late-20th centuries. There is a notable grouping of Livery Company Halls, Wren churches, listed buildings and unlisted buildings of architectural quality and historic interest. There is an area with longstanding historical associations with the river, the fur trade and notable people and events. The buildings are faced with high quality materials in a varied palette, including brick, Portland stone or stucco. This area of the City retains its 19th century industrial character with numerous surviving warehouses and sympathetically designed later buildings. It is an area with significant archaeological potential.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
St Pauls Cathedral	Designated a Conservation Area in 2007, it is an area of international significance, a focal point of the City of London, part of a major processional route and a focus of national celebration. St Paul's Cathedral is a building of international architectural and cultural significance and one of England's most important classical buildings and a seminal building in the history of English architecture. It is an area of great historic significance which has been a centre of Christian worship for almost 1400 years, and encompasses streets, buildings and spaceus spanning a period of almost 1400 years. It is an area of great architectural significance, including one of the largest concentrations in the City of London of Grade I, Grade II* and Grade II listed buildings, as well as numerous non-designated buildings of high architectural quality from different periods. It is an area of internationally important archaeology relating to the adoption of Christianity in Britain, and including the City's largest intact extent of area and depth of archaeological deposits remaining of the medieval and Roman city. It is a visual character and groundscape that is enriched by a wealth of materials, features, monuments, public sculpture, signs, plaques, statuary, and other structures. It is also an area of ecological value, rich in open spaces, trees and greenery which provide an important aspect of the Cathedral's setting.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Whitefriars	The area was designated a Conservation Area in 1981 and extended in 1991. From the 12th century the western boundary was established by the Temple. The earliest established occupation of the area was by the Carmelite Friary (Whitefriars) from c.1250. From the 12th Century the area has been used and developed to accommodate the changing commerce of the area; providing Embankments and workshop buildings.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Temples	In Roman times the route out of the City to the west followed approximately the alignment of Fleet Street and the Strand on the higher ground above the marshy margins of the Thames. The marked slope of the land down from Fleet Street to the Thames remains a prominent feature of the landscape today and it is an important aspect of the character and appearance of the area. Development between the road and the river, such as it was included large private houses and religious houses. Throughout the centuries there have been many developments including the implementation of the Embankment Temples is perhaps the most distinctive and has a character that is not only unique to the City, but rarely found elsewhere. It has a private quality that is emphasised by its gated entrances and most buildings are designed to face the interior of the Temple, it appears to turn its back on the noise and bustle of the City. The area is more than an outstanding collection of buildings of historic importance. It is a subtle combination of buildings and spaces with a character and environmental quality that is reminiscent of the collegiate atmosphere of Oxford and Cambridge.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Strand	The Strand Conservation Area was designated on 28 March 1974 and extended in 1990 and 1993. The riverside location of the conservation area has shaped its street layout and development. The area's built frontage to the river (the Embankment and Somerset House in particular) makes a significant contribution to the central Thames corridor. Within this conservation area there are areas of distinct character. The two main routes are the Strand and the Victoria Embankment.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Savoy	The Savoy Conservation Area was designated in 1981. The topography and riverside location of the Savoy Conservation Area are of particular significance, having shaped the street layout and development. Although the area has been in continuous development since the fourteenth century, most of what is there now was built between 1860 and 1939. The palate of traditional building materials, from Portland Stone to brick and glazed terracotta make for a varied townscape. The area is visually dominated by Shell-Mex House and the Savoy Hotel. These buildings, along with Brettenham House, are prominent in riverside views.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Whitehall	Whitehall was first designated as part of the Government Precinct Conservation Area in 1969. The Whitehall Conservation Area was designated in 1987. Whitehall conservation area is situated in the east of the city of Westminster, and is centred along Whitehall and Parliament Street and the complex of buildings that run either side, between St James's Park and the River Thames. Home to Downing Street, the remaining banqueting house from Whitehall Palace and the Cabinet War Rooms, this conservation area is well-known beyond Westminster. Whitehall itself forms the ceremonial route linking Trafalgar Square and the Palace of Westminster and is dominated by strong built frontages lining the street. To the west is Horse Guard's Parade with its large courtyard that opens onto St James's Park beyond. The eastern boundary runs along the River Thames and Victoria Embankment where green space is found in this otherwise built-up area.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Westminster Abbey and Parliament Square	The area was first designated as part of the Government Precinct Conservation Area in 1969. It was re-designated as the Westminster Abbey and Parliament Square Conservation Area in 1987 and extended to include 4 Matthew Parker Street in 2008. Westminster Abbey & Parliament Square Conservation Area is situated in southern Westminster, adjacent to the River Thames. This relatively small conservation area has an extremely high concentration of Grade I and II* listed buildings and includes some of Westminster's most famous landmarks. Part of the conservation area has also been designated as a World Heritage Site. The principal public focus in the area is Parliament Square, which is dominated by the neo-Gothic splendour of the Houses of Parliament. Adjacent to this is Westminster Abbey, at the core of the conservation area. The complex of courts and cloisters surrounding the Abbey and Dean's Yard provide a contrast to the busy character of the rest of the conservation area and have some early remaining properties of domestic scale, intermingled with late 19th and early 20th Century insertions. Victoria Gardens to the west of Victoria Tower, together with the broad reach of the River Thames creates a glorious setting for the Houses of Parliament	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Royal Parks (On Road)- St James's Park	Royal Parks Conservation Area includes Hyde Park, St James Park, Green Park, Buckingham Palace Gardens and Kensington Gardens. The parks today are the creation of the picturesque landscaping tradition of the mid-18th to late-19th century. Hyde Park and St James Park are dominated by their lakes. All the parks are well wooded and many paths in Green Park and Hyde Park are laid out as avenues. There is also informal planting in all the Parks.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Whitechapel High Street	It marks the western end of the A11, an ancient route linking the City with Essex and Continental Europe via Harwich. The new parish of Whitechapel, originally part of Stepney, developed as a suburb of London around this ancient route, taking its name from the white-washed walls of the 13th century chapel (the parish church of St Mary). The road frontage of Whitechapel High Street reflects a consistently intensive use throughout the Borough's history. The boundaries of the Conservation Area follow the historic footprints of buildings set on long, narrow plots, some amalgamated in two's and three's, but always presenting a narrow street frontage in relation to their depth. More contemporary buildings, set on plots with a far wider street frontage, interrupt the fine grain of the historic fabric and have been omitted from the Conservation Area. The area contains individually significant buildings and collectively the surviving pre-war townscape is of historic and architectural importance, worthy of preservation and enhancement. The Route passes through the middle of this area.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Fournier Street	The Fournier Street Conservation Area was designated in July 1969 as 'Fournier Street'. It contains some of the most architecturally and historically significant buildings in the Borough, including the exceptional group of 18th century houses around Fournier Street. They comprise the most important early Georgian quarter in England and include Christ Church Spitalfields, designed by Nicholas Hawksmoor.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Birdcage Walk	Birdcage Walk is a small conservation area, at the heart of Westminster and just to the south of St James Park. The area retains some of Westminster's finest early eighteenth century buildings in Queen Anne's Gate. The oldest of these date from 1704-5 and are listed Grade I. Much of the rest of the area consists of small scale, stock brick townhouses, with an attractive collection of neo-Georgian and Queen Anne buildings around Catherine Place. These all have an intimate scale and peaceful, domestic character, despite many of the buildings now being occupied by commercial uses.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Mayfair	The area was first designated in 1969 and has since been extended. In the 1660s three large mansions were built on the north side of Piccadilly. One of these is Burlington House (the Royal Academy). These were followed by smaller scale, high quality, and speculative development. By 1780 Mayfair was almost completely built-up. The street pattern created by this development can be seen today; three distinct areas of 18th century grid-iron layout corresponding with the three largest estates in the area. Some of the original town-houses and their mews survive, although many have been redeveloped as their 99 year leases have expired. Mid-19th century houses tend to be stuccoed-Italianate style, from the 1870s Queen Anne style and later Victorian/ Edwardian buildings are Renaissance and Arts and Crafts. After the First World War neo-Georgian style took over. There has been some Modernist redevelopment since the Second World War. The area has become increasingly commercial and is known as the home of specialist shops, galleries and tailors.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Albert Gate	Albert Gate was designated as a conservation area in January 1989. Albert Gate is a small conservation area set on the busy thoroughfare of Knightsbridge, which provides a gateway to Hyde Park. The area has a mixed character but is dominated by late Victorian buildings of metropolitan scale, built in red brick with stone and faience dressings. Earlier development includes the two classical stuccoed Palazzo-style blocks which flank Albert Gate, at the centre of the conservation area. These were designed by Thomas Cubitt in 1840.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Royal Parks (Off Road)- Green Park and Hyde Park	Royal Parks was designated as a conservation area in 1990. Royal Parks Conservation Area includes Hyde Park, St James Park, Green Park, Buckingham Palace Gardens and Kensington Gardens. The parks today are the creation of the picturesque landscaping tradition of the mid-18th to late-19th century. Hyde Park and St James Park are dominated by their lakes. All the parks are well wooded and many paths in Green Park and Hyde Park are laid out as avenues. There is also informal planting in all the Parks.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Bayswater	It was extended in 1978, 1990, 2002 and 2010. Bayswater was initially developed as a fashionable residential suburb when, in 1827, the surveyor to the Bishop of London laid out the area between Praed Street, Edgware Road and Bayswater Road. This layout consisted of an inter-related pattern of wide streets, crescents and squares planned on either sides of the main boulevards- Westbourne Terrace and Sussex Gardens. The Bayswater conservation area covers a large area with a mixed but predominantly residential character. Much of the area consists of stucco terraced houses but these are interspersed with attractive streets and mews of a smaller scale as well as a variety of later buildings of interest. A series of open spaces with many fine mature trees and formal squares also contribute to the area's character. The area around Paddington Station has a more commercial character and has many interesting late Victorian and early 20th century buildings.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Conservation Area	Conservation Are Key Characteristics (Source Local Authority)	Impact on Conservation Area's Character
Maida Vale	Maida Vale Conservation Area was first designated in 1968 but it has been extended on a number of occasions. The Grand Union Canal and Regent's Canal dictated the earliest layouts of Maida Vale in the early 19th century. The south of the area, named after the early 19th century public house 'The Heroes of Maida' on Edgware Road, was complete up to Sutherland Avenue by the 1860s. The remaining section in the north was mostly complete by 1900 and in 1915 Warwick Avenue and Maida Vale underground stations were opened. The layout throughout the area uses architecturally significant avenues and crescents with secondary streets infilling between them.	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.
Westbourne	Westbourne was designated as a conservation area in 1973 and extended in 1978 and 1998. The area was laid out and developed largely from 1850-1855, following the earlier rapid urbanisation of Bayswater and Paddington to the south and east. As a result of this, the architectural form and townscape are recognisably coherent; terrace and villa developments. The houses are three or four storeys with brick and/or stucco facades. A number these are Grade II listed, including the two churches, St. Stephen's on Westbourne Park Road and St. Mary of the Angels on Moorhouse Road. The area is primarily residential except for Westbourne Grove, a Victorian shopping area, and Mews workshops	Overall, the impact of the Project on this conservation area is neutral as the project maintains the existing historic character of the townscape; has no appreciable impacts, either positive or negative, on any known or potential heritage assets; and does not result in severance or loss of integrity, context or understanding within the historic landscape.

Appendix D: List of Listed Buildings and Structures

Building or Structures	GRADE
1 And 1B, Bridge Street Sw1	II
108-136, Westbourne Terrace	II
11, Great George Street Sw1	II*
12-16, Westbourne Street W2 (See Details For Further Address Information)	II
14 Lampstandards Flanking Carriage Drive In New Palace Yard, Houses Of Parliament	II
140, Westbourne Terrace W2	II
14-22, Queen Anne'S Gate Sw1 (See Details For Further Address Information)	I
16, St Mary At Hill Ec3	I
196B And C, Craven Road W2 (See Details For Further Address Information)	II
2, Bridge Street Sw1	II
2, Queen Anne'S Gate Sw1	I
20 And 21, Queenhithe	II
20, Old Queen Street Sw1	II
21 And 23, Bishops Bridge Road W2	II
21 Bench Seats Set On Embankment Pavement	II
215-235, Sussex Gardens W2	
237 And 239, Sussex Gardens W2	II
24, Old Queen Street Sw1	II
25-38, Hyde Park Gardens W2 (See Details For Further Address Information)	II
26 And 28, Old Queen Street Sw1	II
26-32, Queen Anne'S Gate Sw1	I
27 Lamp Posts Lining Both Sides Of Road	II
27, Great Tower Street Ec3	II
2-7, Westbourne Crescent W2	II
3 Bollards	II
3 Lamp Standards On Approach To Victoria Memorial From Birdcage Walk	II
30 And 32, Old Queen Street Sw1	II
33-77, Westbourne Terrace W2	II
34 Lampstandards Lining Both Sides Of Road	II
34, Old Queen Street Sw1	II
34, Queen Anne'S Gate Sw1	I
34-36, Parliament Street Sw1 (See Details For Further Address Information)	II
3-5, Lancaster Terrace W2	
37, Parliament Street Sw1	II
38 And 39, Parliament Street Sw1	II
5, Laurence Pountney Lane Ec4	II
6 Lampstandards Numbered 1-5 (Consecutive) And 8	II
6-12, Queen Anne'S Gate Sw1	I
61-64, Bayswater Road W2	II
6-30, Westbourne Terrace W2	II
69, Upper Thames Street	II
7 Lamp Standards On Approach To Victoria Memorial From Buckingham Gate	II
70-106, Westbourne Terrace (See Details For Further Address Information)	II

Building or Structures	GRADE
79-119, Westbourne Terrace W2	II
8-10, Tower Hill Ec3	II
9, Carmelite Street Ec4	II
Adelaide House	II
Bandstand On North Side Of Serpentine Road Near East End Of Serpentine Road	II
Belgian Monument To The British Nation	II
Billingsgate Market	II
Boadicea (Boudicca) Statuary Group	II
Buckingham Gate Lodge,Gate Piers,Gates And Railings	II*
Buckingham Palace Boundary Walls Enclosing Grounds	I
Buckingham Palace Gates, Railings, Piers And Gate Piers With Lamps Fronting Buckingham Gate And As Entrance To Ambassadors' Court	I
Cabmen'S Shelter	II
Cattle Trough Outside Inner Temple Garden	II
Cheyesmore Memorial	II
Church Of All Hallows, Barking By The Tower	I
Church Of St James	II*
Church Of St James Garlickhithe	I
Church Of St Magnus The Martyr	I
Cleopatra'S Needle	I
Clifton Court	II
Cockpit Steps (Next To Number 38) With Flank Walls And Mounted Lanterns	
Cumberland Lodge, Marble Arch	II
Custom House	I
Dell Restaurant	II*
Dorland Hotel	II
Drinking Fountain On East Side Of Road At North End Of Bridge	II
Duchy Of Cornwall Office	
Dyers Hall	II*
Embankment River Wall, Stairs And Lamp Standards	II
Embankment Wall With Cast Iron Lamp Standards	II
Fishmongers Hall	II*
Five Gate Piers To Inner Temple Garden	II
Five Seats On Riverside Pavement Opposite Temple Gardens	II
Former New Scotland Yard Norman Shaw North Building	I
Former New Scotland Yard Norman Shaw South Building	II*
Fountain In Patte D'Oie North Of East End Of Serpentine, Serpentine Road	II
Four Gate Piers To Middle Temple Lane	II
Gates And Piers Between Norman Shaw North And South Buildings, Former New Scotland Yard	I and II*
Gates, Railings, Gate Piers To New Palace Yard, Houses Of Parliament	II
Group Of Five K6 Telephone Kiosks	II
Group Of Four K6 Telephone Kiosks On Island At Junction With Westbourne Street	II
Guards Chapel, Wellington Barracks	
Hamilton House	II
Henry Fawcett Memorial	
Hm Tower Of London Liberty Boundary Markers	II

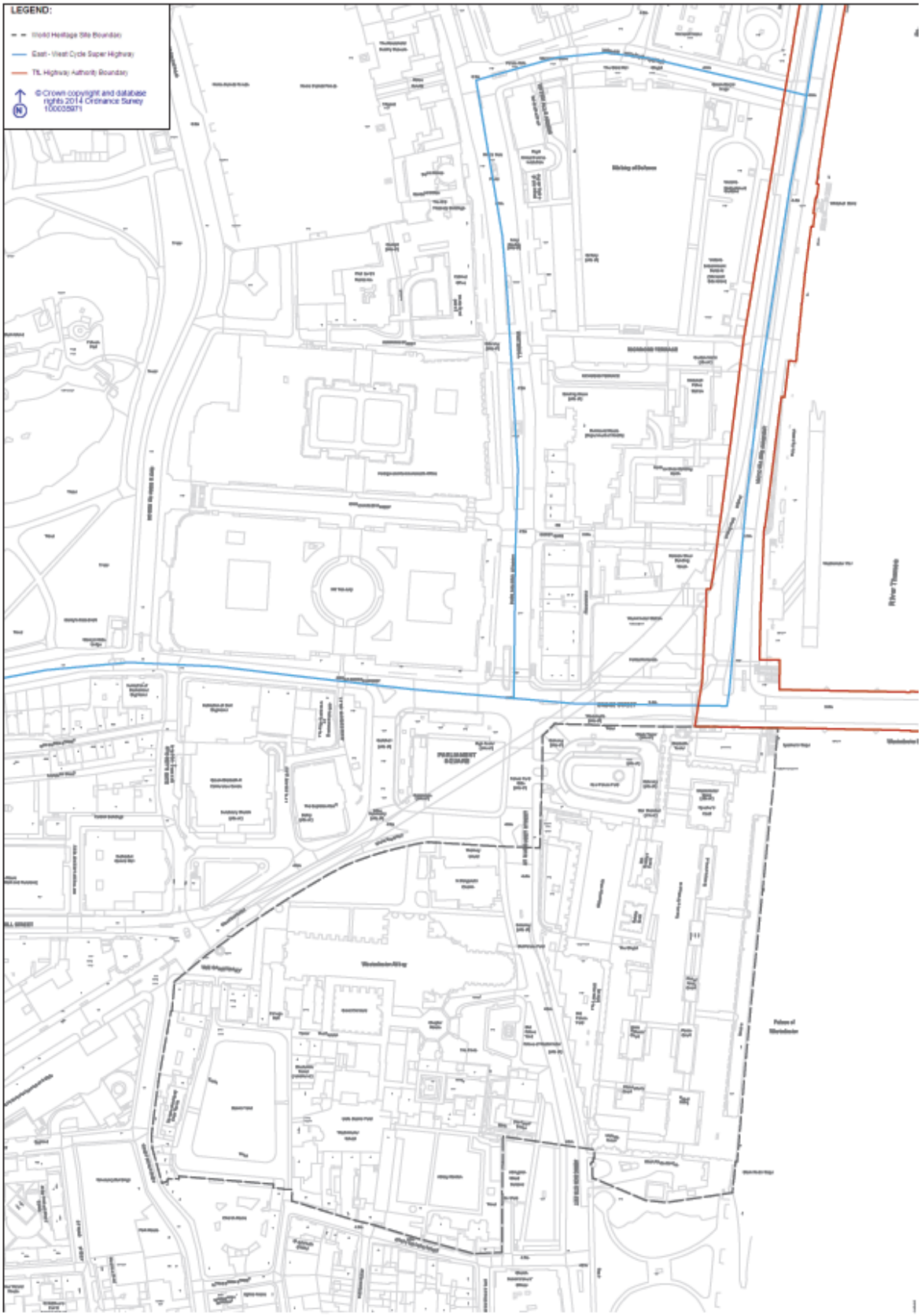
Building or Structures	GRADE
Hungerford House	
Hyde Park Corner Lodge	II
Imperial Camel Corps Memorial	
Innholders Hall	II*
K2 Telephone Kiosk	II
K2 Telephone Kiosk By Submarine Memorial	II
K6 Telephone Kiosk By Hungerford Bridge	II
Lady Henry Somerset Memorial	II
Lampstandards Along Serpentine Road And Around Bandstand, 8 Along Road To East Of Rangers Cottage And 2 Along West Carriage Drive At Junction With Serpentine Road	II
Lodge At Entrance To Middle Temple Lane	II
Lodge At Westbourne Gate	II
Lodge Opposite Upper Grosvenor Street	
Lodge To Gateway From Victoria Embankment	
Main Block Of City Of London School	II
Memorial To Sir J Bazalgette	II
Memorial To Sir W S Gilbert	II
Memorial To Wt Stead, Temple Pier	II
Mercantile Marine War Memorial	II
Merchant Seamens Memorial	II*
North Screen To Buckingham Palace Forecourt With Gateway To Gardens	I
Orsett House	II
Pair Of Griffins On Pedestals At City Boundary	II
Plimsoll Memorial	II
Police Public Callbox 10 Metres East Of War Memorial	II
Portion Of Old London Wall	II
Queen Anne'S Gate And Lamps On Gate Piers	
Queen Victoria Memorial	I
Queen Victoria Memorial Gates And Gatepiers, Balustrades, Steps And Retaining Wall With Fountain Framing West End Of The Mall	I
Railing And Dwarf Wall To Church Of All Hallows (Flanking Byward Street)	II
Railing And Dwarf Wall To Church Of All Hallows (Flanking Great Tower Street)	II
Rectory House	II
Revetment Wall To West And North Side Of Moat, From Outwork Attached To Middle Tower (Qv) To Tower Hill Postern	II
Riyadh House	II
Royal Air Force Memorial Whitehall Stairs	
Royal Artillery Memorial	II*
Royal Eagle Hotel	
Screen At Hyde Park Corner Entrance	I
Serpentine Lodge By Serpentine Road (South Of Ranger'S Cottage)	II
Shelter Alcove (Opposite The North End Of The Serpentine)	II*
Sion College And Attached Railings	II
Sir Arthur Sulivan Memorial	
St Stephen'S Tavern	II
Statue Of Benjamin Disraeli, Earl Of Beaconsfield	II
Statue Of Edward Stanley, Earl Of Derby	II

Building or Structures	GRADE
Statue Of Field Marshal Jan Smuts	II
Statue Of General Gordon	II
Statue Of George Canning	II
Statue Of Henry John Temple, Viscount Palmerston	II
Statue Of Ik Brunel	II
Statue Of John Stuart Mill	II
Statue Of Lord Trenchard	II
Statue Of Queen Victoria At Approach To Blackfriars Bridge	II
Statue Of Robert Burns	B
Statue Of Robert Raikes	
Statue Of Sir Bartle Frere	II
Statue Of Sir James Outram	II
Statue Of Sir Winston Churchill	II
Statue Of William Edward Forster	II
Statue Of William Tyndale	II
Storeys Gate Lodge	II
Submarine War Memorial Attached To Embankment Wall	II
Summer House In Buckingham Palace Garden	I
The Achilles Statue (Off Park Lane To North Of Hyde Park Corner Screen)	II
The Boy Fountain, North Of Birdcage Walk/Queen Anne'S Gate Junction	II
The Cavalry Memorial On North Side Of Serpentine Road, West Of Statue Of Achilles	II
The Institution Of Civil Engineers	II
The Royal Institution Of Chartered Surveyors	II
Thirty-Four Catenary Lamp Standards	II
Tower Of Former Church Of St Mary Somerset	I
Two K2 And Six K6 Telephone Kiosks Outside The Former Hm Treasury Building	II
Victoria Lodge And Adjoining Gate And Gate Piers	II
Vintners Hall	I
Walls, Gates And Railings To Churchyard Of Church Of St Dunstan In The East	II
Watermens Hall	II*
Wellington Arch	I
Wellington Barracks East Guardhouse	II
Wellington Barracks Railings And East And West Gates To Birdcage Walk	II
Wellington Barracks West Guardhouse	II
Wellington Monument	II
Westbourne Bridge	II
Westminster Precinct Conduit House Memorial At North Head Of The Dell	II
Wine Cellars At Premises Of Messers Asher Storey	II

Appendix E: World Heritage Site Boundaries

East - West Cycle Super Highway options around World Heritage Sites

East - West Cycle Super Highway options around World Heritage Sites



Appendix F: Noise Calculations

ID	IA ID	Grid Reference				Length (km)	Do-Minimum (DM)				Do-Something (DS)				Difference DS - DM ($L_{A10, 18h}$ dB)
		Start Point		End Point											
		X	Y	X	Y		AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	
1		526699	180902	526782	180825	0.12	11456	5	37	66.6	1996	2	20	56.9	-9.7
2		526677	180836	526699	180902	0.07	12765	3	20*	66.6	2510	2	20	58.3	-8.2
3		526699	180902	526685	180940	0.10	4677	1	27	60.4	1140	1	20	53.1	-7.3
4		526422	181212	526434	181206	0.02	4197	4	20*	62.5	1565	3	20	56.3	-6.2
5		526434	181206	526548	181078	0.17	3686	5	20*	62.2	1558	3	20	56.3	-5.9
6		526709	180989	526685	180940	0.04	4892	4	20*	62.9	2510	1	20	57.7	-5.1
7		530255	181153	530324	181101	0.09	2091	3	20*	58.1	1146	1	20	53.0	-5.1
8		526625	180996	526709	180989	0.07	6626	3	29	63.4	2265	3	33	58.3	-5.1
9		529582	179640	529263	179583	0.30	14815	0	33	65.2	5330	0	29	60.5	-4.7
10		530699	179661	530711	179660	0.01	14460	4	20*	67.8	5259	4	20	63.2	-4.6
11		530689	179661	530699	179661	0.01	14460	4	36	67.4	5259	4	36	62.9	-4.5
12		526682	180772	526677	180836	0.07	17075	4	35	67.9	4854	6	37	63.4	-4.5
13		532461	181028	532485	181154	0.15	1672	3	20*	57.0	1000	2	20	52.5	-4.5
14		529902	179698	529582	179640	0.36	14815	0	33	65.2	5330	0	34	60.8	-4.4
15		530740	179660	530751	179658	0.01	15799	4	20*	68.1	6648	4	20	64.3	-3.9
16		530711	179660	530740	179660	0.03	15189	6	22	68.3	7825	4	24	64.6	-3.8
17		529146	179572	529187	179762	0.20	10047	0	20*	63.0	4288	0	20	59.3	-3.7
18		530751	179658	530762	179656	0.01	17148	4	23	68.1	7960	4	24	64.6	-3.5
19		530370	179670	530689	179661	0.33	17116	4	36	68.1	7841	4	36	64.7	-3.4
20		530762	179656	530814	179619	0.06	16966	4	32	68.0	7915	4	32	64.6	-3.4
21		531422	180819	531388	180818	0.03	28414	5	27	70.6	11656	6	37	67.2	-3.4
22	1232	529936	179502	529930	179517	0.03	7469	8	25	65.7	4500	5	24	62.4	-3.3
23		533054	180200	533117	180154	0.08	2157	12	20*	61.8	1195	13	20	58.6	-3.2
24		529343	179431	529504	179496	0.18	2554	4	26	59.4	1554	4	26	56.2	-3.2
25		529504	179496	529691	179511	0.20	2554	4	26	59.4	1554	4	26	56.2	-3.2
26		533469	179981	533544	179963	0.09	2305	2	20*	58.2	1538	1	20	55.1	-3.1
27		529923	179697	529902	179698	0.02	18891	0	20*	65.7	9199	0	20	62.6	-3.1
28		530306	179665	530370	179670	0.06	15806	4	36	67.8	7931	4	36	64.7	-3.1
29		526685	180940	526625	180996	0.08	6203	1	33	61.9	3021	1	20	58.9	-3.0
30		529923	179697	530039	179685	0.12	12395	0	35	64.7	5688	1	35	61.6	-3.0
31		526231	181414	526313	181327	0.12	7445	4	20*	64.9	4397	3	20	61.9	-3.0
32		529923	179655	529930	179517	0.14	5171	1	25	60.9	2422	2	25	57.9	-2.9
33		526431	179474	526548	179642	0.24	1798	1	20*	56.0	1124	2	20	53.1	-2.9
34		529263	179583	529146	179572	0.12	12947	0	20*	64.1	6678	0	20	61.2	-2.9
35		526313	181327	526422	181212	0.16	7352	4	27	64.3	4439	3	27	61.5	-2.8
36		525702	181647	526173	181476	0.57	8719	3	36	64.7	5349	2	20	62.0	-2.7
37		531422	180819	531758	180828	0.34	29284	6	36	71.0	16323	5	36	68.3	-2.6
38		530039	179685	530070	179680	0.03	13531	1	39	65.8	6988	1	39	63.2	-2.6
39		530083	179588	529936	179502	0.20	11514	7	32	67.4	7263	6	31	64.8	-2.6
40		528849	179785	528511	179808	0.40	27409	0	29	67.5	15138	0	29	65.0	-2.5

ID	IA ID	Grid Reference				Length (km)	Do-Minimum (DM)				Do-Something (DS)				Difference DS - DM ($L_{A10, 18h}$ dB)
		Start Point		End Point			AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	
		X	Y	X	Y										
41		529187	179762	528849	179785	0.31	27409	0	28	67.5	15138	0	29	65.0	-2.5
42		531160	179420	531260	179390	0.13	9562	5	35	65.8	6975	2	35	63.3	-2.5
43		530231	181183	530255	181153	0.04	3447	3	22	60.5	2551	1	22	58.0	-2.5
44		531260	179390	531327	179400	0.06	9577	5	35	65.8	7006	2	35	63.3	-2.5
45		531117	179465	531160	179420	0.05	9578	5	36	65.9	7007	2	36	63.4	-2.5
46		532669	181112	532650	181100	0.13	1788	4	35	57.6	1130	6	35	55.1	-2.5
47		532650	181100	532476	181034	0.08	1788	4	29	57.4	1130	6	29	55.0	-2.4
48		526173	181476	526231	181414	0.09	10356	3	26	65.2	6347	2	20	62.8	-2.4
49		530201	181210	530231	181183	0.04	3447	3	27	60.3	2551	1	27	57.9	-2.4
50		530126	181322	530201	181210	0.16	3447	3	27	60.3	2551	1	27	57.9	-2.4
51		530306	179665	530355	180085	0.43	13874	0	23	64.3	7974	0	20	62.0	-2.4
52		530083	179588	530070	179680	0.09	20806	3	20*	68.4	10225	4	20	66.1	-2.3
53		529776	180451	529800	180412	0.05	1807	5	20*	58.2	1215	5	20	55.9	-2.3
54		532476	181034	532461	181028	0.02	1788	4	20*	58.0	1130	6	20	55.7	-2.3
55		526787	180786	526926	180815	0.14	24487	6	24	70.6	15167	5	20	68.5	-2.1
56		533419	180003	533439	179996	0.02	3212	9	26	62.5	2169	10	27	60.5	-2.0
57		533353	180035	533419	180003	0.07	3213	9	30	62.4	2169	10	31	60.4	-2.0
58		533117	180154	533353	180035	0.28	3213	9	33	62.4	2170	10	33	60.4	-2.0
59		529705	179513	529691	179511	0.01	4345	14	20*	65.8	4705	6	20	63.8	-2.0
60		530587	180935	530505	180879	0.10	4053	4	21	62.0	3889	1	22	60.1	-2.0
61		526677	180836	526482	181016	0.28	8239	7	25	66.0	5115	8	28	64.0	-2.0
62	1065	529146	179572	528998	179462	0.19	5687	6	35	63.8	3822	5	35	61.9	-1.9
63		530868	179654	530918	179628	0.06	13468	5	24	67.2	9528	4	28	65.3	-1.9
64		526787	180786	526682	180772	0.11	17990	4	20	68.2	10188	5	20	66.3	-1.8
65		533439	179996	533469	179981	0.03	3335	10	29	62.6	2306	10	30	60.8	-1.8
66		530488	180867	530550	180790	0.10	4054	4	20*	62.2	4147	1	20	60.4	-1.8
67		530160	179580	530083	179588	0.08	17140	4	20*	68.1	10626	4	20	66.3	-1.8
68		526417	180960	526482	181016	0.09	4077	6	25	62.6	4231	2	25	60.8	-1.8
69	1065	533100	181591	533011	181617	0.11	1400	0	20	53.4	1114	0	20	51.7	-1.8
70		531010	179550	531080	179500	0.07	11139	5	35	66.5	8136	4	35	64.7	-1.8
71	1065	531080	179500	531090	179480	0.02	11147	5	35	66.5	8162	4	35	64.7	-1.8
72	1065	530940	179590	531010	179550	0.06	11148	5	35	66.5	8164	4	35	64.7	-1.8
73		530918	179628	530940	179590	0.08	11157	5	35	66.5	8176	4	35	64.7	-1.7
74	1065	531090	179480	531117	179465	0.03	11155	5	35	66.5	8175	4	35	64.7	-1.7
75		531016	179663	530918	179628	0.13	1224	3	20*	55.0	1041	2	20	53.3	-1.7
76		529187	179762	529263	179583	0.20	12569	0	22	63.9	8390	0	20	62.2	-1.7
77		530338	180310	530226	180338	0.14	7706	14	32	67.3	4461	17	32	65.6	-1.7
78		526146	181372	526080	181430	0.09	5342	7	27	64.1	3099	10	27	62.4	-1.7
79		528099	179483	527975	179335	0.19	2112	0	21	55.7	1610	0	22	54.1	-1.6
80		531097	179747	531016	179663	0.12	1224	3	27	54.5	1041	2	27	52.9	-1.6
81		531786	180881	531789	180953	0.08	6172	6	20*	65.0	4932	5	20	63.4	-1.6
82	1065	531781	181312	531697	181172	0.20	2418	3	20*	59.2	2081	2	20	57.6	-1.6

ID	IA ID	Grid Reference				Length (km)	Do-Minimum (DM)				Do-Something (DS)				Difference DS - DM ($L_{A10, 18h}$ dB)
		Start Point		End Point											
		X	Y	X	Y		AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	
83		530814	179619	530868	179654	0.06	20618	5	20*	69.5	13818	5	20	67.9	-1.6
84		526926	180815	527170	180857	0.25	20793	6	41	70.0	15761	5	41	68.4	-1.6
85		531248	179789	531097	179747	0.20	1292	3	23	54.9	1109	2	23	53.3	-1.6
86		526080	181430	525949	181482	0.12	5342	7	20*	64.8	3099	10	20	63.2	-1.6
87		532000	180943	532237	180948	0.25	9381	7	25	66.4	4963	10	25	64.8	-1.6
88		531796	181405	531781	181312	0.10	2418	3	22	59.0	2079	2	22	57.4	-1.6
89		526447	181923	526496	181870	0.05	1407	1	27	53.8	1120	1	27	52.2	-1.6
90		531789	180953	531854	180951	0.07	3838	7	35	62.4	2318	10	35	60.9	-1.5
91		526372	182003	526447	181923	0.11	1391	1	25	53.6	1118	1	25	52.2	-1.5
92		530407	180289	530355	180085	0.21	21432	2	31	67.7	14905	2	32	66.2	-1.5
93		531775	180835	531786	180881	0.06	6172	6	36	64.4	4932	5	36	62.9	-1.5
94		532237	180948	532375	180994	0.16	8431	7	20*	66.6	4554	11	22	65.1	-1.5
95		526923	180944	526973	180993	0.07	3689	2	27	60.3	2914	2	27	58.9	-1.4
96		526914	180936	526923	180944	0.01	3689	2	27	60.3	2914	2	27	58.9	-1.4
97		531854	180951	532000	180943	0.17	3838	7	29	62.3	2318	10	29	60.9	-1.4
98		534160	180767	534191	180673	0.10	2090	21	20*	63.7	1992	15	20	62.3	-1.4
99		530153	179672	530160	179580	0.09	19457	4	23	68.5	13061	4	20	67.1	-1.4
100		531117	180808	530872	180755	0.25	29136	4	32	70.3	19189	5	27	68.9	-1.4
101	1148	527170	180857	527247	180872	0.08	21688	6	42	70.2	17296	5	42	68.8	-1.4
102		532252	180854	532427	180827	0.18	16802	5	28	68.1	12129	5	28	66.8	-1.4
103		530505	180879	530488	180867	0.02	4054	4	30	61.7	4147	1	30	60.3	-1.4
104	1148	531556	181660	531404	181565	0.19	2146	4	20*	58.9	1533	5	20	57.5	-1.4
105		531775	180835	532252	180854	0.48	21847	5	33	69.4	15958	5	32	68.0	-1.4
106		528536	179578	528380	179437	0.21	2763	4	21	59.8	1829	6	22	58.5	-1.3
107		530070	179680	530153	179672	0.08	15832	4	20*	67.8	11218	4	20	66.5	-1.3
108		527463	181132	527500	181143	0.04	1466	5	21	56.8	1425	3	21	55.5	-1.3
109		534130	180866	534160	180767	0.11	1286	30	39	60.6	1334	18	39	59.3	-1.3
110		533573	181172	533608	181184	0.04	4508	11	32	64.3	4392	7	32	63.0	-1.3
111		530407	180289	530338	180310	0.08	11307	8	31	67.4	7232	10	31	66.1	-1.3
112		531758	180828	531775	180835	0.02	23760	6	28	69.9	15726	5	20	68.7	-1.3
113		533699	181240	533733	181264	0.07	4530	11	35	64.3	4412	7	35	63.0	-1.3
114		530872	180755	530663	180654	0.23	29328	4	28	69.9	20383	4	26	68.7	-1.3
115		526846	181125	526987	181256	0.20	5780	1	33	61.6	3374	3	33	60.4	-1.2
116		527216	181034	527331	181093	0.14	4437	4	26	62.0	4320	2	26	60.8	-1.2
117		528998	179462	528947	179343	0.13	6842	7	35	64.9	5481	6	35	63.7	-1.2
118		528093	179577	528099	179483	0.10	2299	0	21	56.2	1865	0	21	55.0	-1.2
119		530908	180805	530996	180838	0.09	5298	6	28	63.4	4040	6	29	62.2	-1.2
120		530872	180755	530908	180805	0.07	5298	6	28	63.4	4040	6	29	62.2	-1.2
121		527500	181143	527572	181166	0.07	2298	5	25	59.4	2304	3	25	58.2	-1.2
122		533630	181200	533699	181240	0.08	4530	11	39	64.4	4412	7	39	63.2	-1.2
123		531117	180808	531388	180818	0.27	29139	5	29	70.5	19192	6	37	69.4	-1.2
124		533540	181160	533573	181172	0.04	8740	11	35	67.2	8751	7	35	66.0	-1.2

ID	IA ID	Grid Reference				Length (km)	Do-Minimum (DM)				Do-Something (DS)				Difference DS - DM ($L_{A10, 18h}$ dB)
		Start Point		End Point			AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	
		X	Y	X	Y										
125		527330	180889	527540	180930	0.27	19879	8	41	70.3	15630	8	41	69.2	-1.1
126		533608	181184	533630	181200	0.03	4547	11	44	64.7	4429	7	44	63.6	-1.1
127		527892	179190	527972	178784	0.41	4761	2	35	61.3	3764	1	35	60.2	-1.1
128		527972	178784	527991	178691	0.10	4760	2	35	61.3	3764	1	35	60.2	-1.1
129		527540	180930	527665	180954	0.07	22195	6	40	70.1	17869	6	40	69.0	-1.1
130		526650	179644	526735	179471	0.20	1372	0	23	53.1	1163	0	23	52.0	-1.1
131		531903	181845	532015	181894	0.12	2383	3	31	58.4	2014	2	31	57.3	-1.1
132		527247	180872	527330	180889	0.09	22196	6	42	70.3	17869	6	42	69.1	-1.1
133		533224	180944	533487	181123	0.34	3752	9	32	62.9	3430	6	32	61.8	-1.1
134		530153	179672	530306	179665	0.16	28112	2	20*	69.5	19149	3	20	68.3	-1.1
135		532426	181013	532461	181028	0.04	5803	5	27	63.4	3537	8	28	62.3	-1.1
136		532375	180994	532426	181013	0.07	5803	5	28	63.4	3538	8	28	62.3	-1.1
137		526765	181744	526878	181705	0.13	5390	4	26	62.7	4576	3	26	61.6	-1.1
138	1199	526951	180770	527005	180218	0.68	10493	0	34	64.0	8215	0	34	62.9	-1.1
139		528493	179886	528520	179907	0.04	3489	2	23	59.9	4521	2	23	60.9	1.0
140	1199	532404	180726	532320	180400	0.34	4278	20	39	65.9	7334	12	39	66.8	1.0
141		528520	179907	528577	179944	0.04	3490	2	23	59.9	4522	2	23	60.9	1.0
142	1232	529976	178549	530028	178655	0.12	2220	1	32	57.3	2613	1	32	58.2	1.0
143		529094	179164	529183	179178	0.09	3208	5	27	61.0	4131	5	27	62.0	1.0
144	1198	527530	179690	527590	179710	0.03	1000	0	41	52.2	1145	0	41	53.2	1.0
145		527590	179710	527640	179690	0.03	1000	0	20*	50.9	1145	0	20	51.9	1.0
146		529963	178293	529990	178330	0.05	7661	3	37	64.1	8401	4	37	65.1	1.0
147		530045	178984	529975	178983	0.07	3606	6	35	61.8	4104	7	35	62.8	1.0
148		530126	178985	530045	178984	0.16	3606	6	35	61.8	4104	7	35	62.8	1.0
149		529990	178330	530097	178403	0.16	7658	3	36	64.1	8392	4	36	65.0	1.0
150		530097	178403	530147	178467	0.05	7661	3	36	64.1	8401	4	36	65.0	1.0
151		530220	180763	530123	180847	0.13	3623	3	29	60.7	4323	4	29	61.7	1.0
152		532092	180202	532266	180163	0.18	8509	8	34	66.3	12591	6	33	67.3	1.0
153		527732	180876	526951	180770	0.79	3889	0	33	59.4	4911	0	33	60.4	1.0
154		532168	181235	532470	181158	0.31	3328	5	31	61.0	4080	5	31	62.0	1.0
155		530692	180682	530609	180825	0.16	5222	7	20*	64.7	7315	6	20	65.7	1.0
156	1140	527900	178600	527825	178691	0.12	4828	9	29	63.9	5187	11	29	65.0	1.0
157	1199	533835	180790	533773	180690	0.12	8979	1	20*	63.7	8809	3	20	64.8	1.0
158		528647	179986	528677	180011	0.02	2354	3	22	58.4	2968	2	22	59.4	1.0
159		531593	179996	531651	180008	0.06	4004	10	30	63.4	4652	11	30	64.5	1.0
160		531170	179170	531192	179194	0.08	5310	11	36	65.0	6743	11	36	66.0	1.1
161		531170	181124	531283	181160	0.12	11015	3	28	65.3	14305	3	27	66.3	1.1
162		530943	179091	530970	179100	0.03	5310	11	35	65.0	6743	11	35	66.0	1.1
163		531020	179120	531170	179170	0.05	5306	11	35	65.0	6735	11	35	66.0	1.1
164		529870	178360	529920	178433	0.09	1599	3	31	56.0	1863	3	31	57.0	1.1
165		531523	179969	531593	179996	0.08	3812	9	31	63.0	4454	10	31	64.1	1.1
166		529312	180679	529350	180710	0.06	3425	2	29	59.8	3752	3	29	60.9	1.1

ID	IA ID	Grid Reference				Length (km)	Do-Minimum (DM)				Do-Something (DS)				Difference DS - DM ($L_{A10, 18h}$ dB)
		Start Point		End Point											
		X	Y	X	Y		AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	
167		526765	181744	527021	181739	0.29	4590	5	20*	62.9	5258	6	20	64.0	1.1
168		528057	178422	527949	178301	0.16	1420	5	27	56.3	1679	5	27	57.4	1.1
169		533043	181126	532718	181114	0.32	2013	4	20*	58.3	1891	7	20	59.4	1.1
170		533374	181125	533043	181126	0.34	2013	4	20*	58.3	1891	7	20	59.4	1.1
171		530395	178960	530470	178960	0.12	3500	5	35	61.4	4660	5	35	62.5	1.1
172		530310	178970	530395	178960	0.12	3500	5	35	61.4	4660	5	35	62.5	1.1
173		530470	178960	530531	178946	0.03	3509	5	35	61.4	4700	4	35	62.5	1.1
174		530245	178979	530310	178970	0.04	3509	5	35	61.4	4701	4	35	62.5	1.1
175		530130	181450	530200	181490	0.06	3513	0	29	58.6	4537	0	29	59.7	1.1
176		530245	178979	530175	178982	0.07	3047	6	31	61.2	3852	6	30	62.3	1.1
177		525916	180996	525997	180609	0.40	2883	2	20*	59.0	3222	2	20	60.1	1.1
178		531650	180906	531668	180922	0.02	7777	5	20*	65.4	8751	6	20	66.6	1.1
179	1310	527949	178301	527838	178314	0.15	1393	5	22	56.5	1655	5	22	57.6	1.1
180	1199	527130	181626	527247	181501	0.17	22830	3	22	68.7	24844	4	21	69.9	1.1
181		528577	179944	528629	179980	0.01	1893	4	20*	58.0	2428	3	20	59.1	1.1
182	683	531907	180262	531862	180141	0.13	1690	3	27	56.2	1507	7	27	57.4	1.1
183		532092	180202	531907	180262	0.20	8962	6	33	66.0	12574	5	33	67.1	1.1
184		526190	180699	526202	180636	0.06	1086	5	20*	54.8	1508	3	20	55.9	1.2
185		531640	180780	531642	180806	0.05	17359	5	36	68.5	20701	6	36	69.6	1.2
186		531650	180550	531640	180710	0.18	17353	5	35	68.4	20685	6	35	69.6	1.2
187		531640	180710	531640	180780	0.05	17356	5	35	68.4	20690	6	35	69.6	1.2
188		527825	178691	527710	179153	0.48	7203	3	31	63.5	7747	5	31	64.7	1.2
189		530970	179100	531020	179120	0.12	5118	11	35	64.8	6698	11	35	66.0	1.2
190		531644	180501	531650	180550	0.05	17359	5	32	68.3	20701	6	32	69.5	1.2
191		529350	180710	529436	180787	0.09	3425	2	23	59.9	3752	3	23	61.1	1.2
192		527719	181752	527679	181740	0.04	3688	3	23	60.6	4638	3	21	61.8	1.2
193		529771	178510	529772	178487	0.03	1420	2	24	55.1	1646	3	24	56.3	1.2
194		529757	178763	529760	178703	0.06	1401	2	29	54.7	1620	3	28	56.0	1.2
195		529772	178487	529763	178438	0.06	1420	2	21	55.3	1646	3	21	56.5	1.2
196		531650	180400	531644	180501	0.10	17061	5	31	68.2	20468	6	31	69.4	1.2
197		527838	178314	527705	178434	0.18	1400	4	20*	56.5	1663	5	20	57.7	1.2
198		529760	178703	529769	178554	0.18	1401	2	26	54.7	1620	3	26	56.0	1.2
199		526973	180993	526846	181125	0.18	4711	2	24	61.3	5850	3	24	62.6	1.3
200		528939	178526	529053	178583	0.14	1338	6	26	56.2	1587	6	26	57.4	1.3
201		527735	181345	527937	181405	0.21	5017	6	31	63.4	5754	9	31	64.7	1.3
202		530911	181038	531077	181094	0.18	6752	2	36	63.2	8894	2	36	64.5	1.3
203		529769	178554	529771	178510	0.04	1401	2	23	54.8	1620	3	23	56.0	1.3
204		529944	178481	529976	178549	0.08	1286	2	31	54.3	1537	2	31	55.6	1.3
205		529920	178433	529944	178481	0.05	1286	2	30	54.3	1537	2	30	55.6	1.3
206		530175	178982	530126	178985	0.05	2962	8	31	61.6	3714	9	31	62.8	1.3
207		530147	178467	530254	178782	0.34	6650	4	34	63.9	7134	7	34	65.2	1.3
208	1199	531404	181565	531302	181992	0.44	2312	0	35	57.2	2856	1	35	58.5	1.3

ID	IA ID	Grid Reference				Length (km)	Do-Minimum (DM)				Do-Something (DS)				Difference DS - DM ($L_{A10, 18h}$ dB)
		Start Point		End Point											
		X	Y	X	Y		AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	
209		528677	180011	528690	180016	0.01	2449	3	20*	58.8	3429	2	20	60.1	1.3
210		530060	181420	530130	181450	0.07	2993	0	20*	57.6	3979	0	20	59.0	1.3
211		529973	180874	530060	180875	0.09	1579	4	20*	57.2	1892	5	20	58.5	1.3
212		530225	179125	530205	179225	0.10	6119	5	33	63.6	6416	8	33	65.0	1.4
213		527641	181655	527739	181687	0.10	2464	4	25	59.2	2736	6	25	60.5	1.4
214		527527	181690	527370	181745	0.18	1156	3	21	54.5	1648	2	21	55.9	1.4
215	683	530246	179017	530225	179125	0.11	6119	5	32	63.6	6416	8	32	65.0	1.4
216		531907	180262	531650	180400	0.30	9365	6	23	66.2	12280	6	23	67.6	1.4
217		525916	180996	526111	181059	0.21	1461	7	26	57.3	2199	4	26	58.7	1.4
218		531642	180806	531650	180906	0.09	6180	6	20*	64.8	8360	6	20	66.3	1.4
219		526640	182266	526954	182389	0.34	1197	0	22	52.2	1425	0	22	53.6	1.4
220		528737	180047	528783	180115	0.00	3332	0	36	58.9	4609	0	36	60.4	1.4
221		528783	180115	528807	180123	0.01	3332	0	20*	58.2	4608	0	20	59.6	1.4
222	1306	531862	180141	531870	180020	0.13	1690	3	20*	56.6	1507	7	20	58.1	1.5
223		531697	181172	531761	181159	0.07	2655	4	22	59.7	3486	4	22	61.2	1.5
224	1306	527605	181716	527550	181850	0.14	1097	3	20*	54.2	1323	4	20	55.7	1.5
225	1232	531761	181159	531834	181144	0.08	2407	4	25	59.2	3151	5	25	60.7	1.5
226		529183	179178	529261	179198	0.09	2155	6	20*	59.8	3143	5	20	61.4	1.5
227	1306	532138	181060	532187	181047	0.05	2407	4	20*	59.7	3151	5	20	61.2	1.5
228		532031	181314	532027	181348	0.04	1806	5	27	58.0	2220	6	26	59.5	1.5
229		527480	181270	527518	181280	0.13	2366	6	32	59.8	2838	8	32	61.3	1.5
230		527518	181280	527596	181305	0.03	2366	6	32	59.8	2839	8	32	61.3	1.5
231		530254	178782	530252	178796	0.01	6650	4	21	64.2	7132	7	21	65.8	1.6
232	1065	530059	178721	530135	178888	0.18	1067	2	26	53.0	1350	2	26	54.6	1.6
233	1065	530830	179830	530814	179793	0.03	1750	0	25	54.7	2287	0	25	56.2	1.6
234		530814	179793	530790	179770	0.03	1750	0	20*	54.7	2287	0	20	56.2	1.6
235		530147	178467	529976	178549	0.19	1013	0	27	51.1	1270	0	27	52.7	1.6
236		530048	180611	530060	180521	0.10	5318	2	32	62.1	5508	6	32	63.7	1.6
237	1199	531026	179297	531123	179437	0.17	1322	11	20*	58.5	2051	7	20	60.1	1.6
238		528577	179944	528602	179984	0.00	1597	0	36	54.9	2094	0	36	56.5	1.6
239	1199	529691	179511	529639	179402	0.13	1347	14	24	58.8	2474	6	22	60.4	1.6
240		528602	179984	528629	179980	0.01	1597	0	20*	54.1	2094	0	20	55.7	1.6
241		528675	178414	528999	178140	0.43	1063	2	25	52.9	1399	2	25	54.5	1.7
242		530245	178979	530246	179017	0.04	6122	5	20*	64.1	6423	8	20	65.8	1.7
243		527596	181305	527642	181319	0.05	2168	6	26	59.4	2347	10	26	61.1	1.7
244		532241	181036	532286	181015	0.01	2637	5	38	60.1	3670	5	38	61.7	1.7
245	1306	532649	181269	532533	181293	0.12	1799	1	28	55.6	2289	1	28	57.3	1.7
246	1306	532120	181410	532136	181368	0.04	1729	2	20*	56.3	2325	2	20	58.0	1.7
247		532028	181387	532047	181403	0.03	1729	2	25	56.0	2326	2	25	57.7	1.7
248	1306	532669	181112	532584	181132	0.09	4260	3	33	61.5	4907	6	33	63.2	1.7
249		532047	181403	532120	181410	0.07	1723	2	25	56.0	2318	2	25	57.7	1.7
250		529436	180787	529521	180866	0.12	2519	3	23	58.8	3054	4	23	60.5	1.7

ID	IA ID	Grid Reference				Length (km)	Do-Minimum (DM)				Do-Something (DS)				Difference DS - DM ($L_{A10, 18h}$ dB)
		Start Point		End Point			AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	AAWT	%HGV	Speed (km/h)	BNL ($L_{A10, 18h}$ dB)	
		X	Y	X	Y										
251		532286	181015	532325	181010	0.02	2626	5	39	60.1	3658	5	39	61.8	1.7
252		532584	181132	532485	181154	0.10	4260	3	32	61.5	4902	6	32	63.2	1.7
253		532325	181010	532375	180994	0.06	2637	5	20*	60.3	3670	5	20	62.0	1.7
254		529887	180461	529801	180581	0.15	1316	9	22	57.5	1904	7	22	59.3	1.8
255		530432	180867	530399	180899	0.05	2036	3	48	58.8	2071	9	48	60.5	1.8
256		530561	180951	530612	181058	0.12	1331	3	21	55.3	1942	2	21	57.1	1.8
257		530943	179091	531000	179265	0.19	1088	20	24	58.5	1870	12	25	60.4	1.8
258		530028	178655	530059	178721	0.26	1022	2	27	52.4	1313	2	27	54.3	1.9
259		530060	180521	530061	180511	0.01	5318	2	22	62.1	5509	6	22	64.0	2.0
260		530123	180847	530293	180988	0.21	1978	3	20*	57.8	2661	4	20	59.9	2.1
261		529737	177996	529634	178311	0.34	1255	0	22	52.6	1743	0	22	54.7	2.1
262		531711	180943	531668	180922	0.07	3301	6	20*	62.0	5930	5	20	64.1	2.1
263		530267	181039	530324	181101	0.09	2109	4	23	58.3	3516	3	22	60.5	2.2
264		532061	180023	532263	180050	0.20	1082	1	20*	52.2	1085	4	20	54.5	2.2
265		531789	180953	531711	180943	0.09	3301	6	36	61.4	5930	5	36	63.7	2.2
266		529521	180866	529593	180925	0.09	1963	2	22	57.1	2434	4	22	59.4	2.3
267		530486	180902	530432	180867	0.15	2036	3	30	57.6	2071	9	30	59.8	2.3
268		530060	180875	530267	181039	0.27	2109	4	33	58.2	3516	3	33	60.5	2.3
269		530293	180988	530422	181036	0.12	1107	3	20*	54.3	1772	2	20	56.6	2.3
270		530399	180899	530220	180763	0.23	2036	3	25	57.6	2071	9	25	60.0	2.5
271		530320	181560	530345	181595	0.03	1785	0	31	55.2	2814	0	31	57.7	2.5
272		530200	181490	530280	181540	0.11	1785	0	25	54.8	2814	0	24	57.3	2.5
273		530280	181540	530320	181560	0.04	1785	0	43	56.3	2814	0	43	58.9	2.5
274		531502	181336	531603	181356	0.10	1249	15	20*	59.3	2682	8	20	61.9	2.6
275		530275	180716	530083	180612	0.23	5136	3	27	62.0	5717	8	27	64.6	2.6
276		530220	180763	530275	180716	0.08	4222	2	27	60.5	5317	5	27	63.1	2.6
277		525848	180986	525916	180996	0.07	1054	6	20*	55.0	1669	5	20	57.7	2.7
278		530061	180511	530070	180420	0.10	6279	2	22	62.8	7439	6	20	65.6	2.8
279		530063	181100	530056	180970	0.09	1167	1	31	53.0	1877	1	31	55.9	2.9
280		531404	181565	531502	181336	0.25	1249	15	35	58.2	2683	8	35	61.1	2.9
281		530083	180612	530048	180611	0.04	5136	3	20*	62.4	5717	8	20	65.3	2.9
282		529593	180925	529651	180825	0.10	1317	3	20*	55.4	1743	6	20	58.4	3.0
283		530561	180951	530486	180902	0.12	1618	3	41	56.7	1869	10	40	59.7	3.0
284		527216	181034	527247	180872	0.17	2658	2	22	58.8	4941	3	21	62.2	3.4

Appendix G: NO_2 Concentrations

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration ($\mu g/m^3$)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
1	24711	21908	-2803	56.7	55.9	-0.9	Minor Beneficial	134
2	10803	12126	1324	48.5	49.8	1.3	Minor Adverse	182
3	9606	11338	1732	47.3	49.1	1.8	Minor Adverse	83
4	3907	5589	1681	41.2	43	1.9	Minor Adverse	65
5	3620	5213	1593	40.8	42.6	1.8	Minor Adverse	75
6	6563	7669	1106	44.1	45.3	1.2	Minor Adverse	64
7	15269	12563	-2706	53.7	50.3	-3.5	Moderate Beneficial	351
8	4969	8488	3519	42.4	46.1	3.8	Moderate Adverse	104
9	19516	14089	-5428	55.1	51.7	-3.4	Moderate Beneficial	177
10	20164	24045	3882	55.3	56.5	1.2	Minor Adverse	51
11	11632	14339	2707	49.4	52	2.6	Moderate Adverse	98
12	18443	19568	1125	54.8	55.1	0.4	Negligible	75
13	16219	18758	2540	54	54.9	0.8	Minor Adverse	13
14	11697	12984	1288	49.4	50.7	1.3	Minor Adverse	99
15	3185	0	-3185	40.3	36.6	-3.7	Moderate Beneficial	356
16	33004	20728	-12277	59.1	55.5	-3.6	Moderate Beneficial	34
17	33847	22292	-11554	59.3	56	-3.3	Moderate Beneficial	271
18	8700	9722	1022	46.4	47.4	1.1	Minor Adverse	55
19	11751	13209	1458	49.5	50.9	1.4	Minor Adverse	50
20	11751	13207	1456	49.5	50.9	1.4	Minor Adverse	73
21	6794	8321	1528	44.3	46	1.6	Minor Adverse	39
22	1451	3115	1664	38.3	40.3	1.9	Minor Adverse	103
23	1451	3116	1666	38.3	40.3	1.9	Minor Adverse	254
24	5950	7197	1247	43.4	44.8	1.3	Minor Adverse	76
25	12698	13829	1131	50.4	51.5	1.1	Minor Adverse	23
26	3265	1877	-1387	40.4	38.8	-1.6	Minor Beneficial	131

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
27	20190	24807	4617	55.3	56.8	1.4	Minor Adverse	71
28	12794	16616	3821	50.5	54.2	3.7	Moderate Adverse	122
29	3483	2233	-1251	40.7	39.2	-1.4	Minor Beneficial	147
30	7985	9733	1748	45.6	47.4	1.8	Minor Adverse	28
31	5313	6660	1346	42.7	44.2	1.5	Minor Adverse	26
32	3620	5213	1593	40.8	42.6	1.8	Minor Adverse	51
33	5323	6671	1348	42.7	44.2	1.5	Minor Adverse	10
34	4212	6188	1976	41.5	43.7	2.2	Moderate Adverse	10
35	6741	4108	-2633	44.3	41.4	-2.9	Moderate Beneficial	40
36	3265	1877	-1388	40.4	38.8	-1.6	Minor Beneficial	18
37	9793	5289	-4504	47.5	42.7	-4.8	Significant Beneficial	159
38	4212	6188	1976	41.5	43.7	2.2	Moderate Adverse	59
39	6741	4109	-2632	44.3	41.4	-2.9	Moderate Beneficial	74
40	10896	5765	-5131	48.6	43.2	-5.4	Significant Beneficial	249
41	7179	9711	2533	44.8	47.4	2.7	Moderate Adverse	94
42	9034	14037	5004	46.7	51.7	5	Significant Adverse	34
43	7169	5729	-1440	44.8	43.2	-1.6	Minor Beneficial	83
44	4938	8370	3432	42.3	46	3.7	Moderate Adverse	90
45	7169	5729	-1440	44.8	43.2	-1.6	Minor Beneficial	56
46	25377	18536	-6841	56.9	54.8	-2.1	Moderate Beneficial	476
47	34015	26150	-7866	59.4	57.2	-2.2	Moderate Beneficial	340
48	16220	18762	2541	54	54.9	0.8	Minor Adverse	13
49	7954	9200	1246	45.6	46.9	1.3	Minor Adverse	265
50	6417	702	-5715	43.9	37.4	-6.5	Significant Beneficial	144
51	27599	18267	-9332	57.6	54.7	-2.9	Moderate Beneficial	17
52	6417	702	-5715	43.9	37.4	-6.5	Significant Beneficial	176
53	33906	36685	2778	59.3	60.1	0.7	Minor Adverse	43

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
54	23632	25249	1616	56.4	56.9	0.5	Minor Adverse	78
55	1078	0	-1078	37.9	36.6	-1.3	Minor Beneficial	127
56	23632	25249	1617	56.4	56.9	0.5	Minor Adverse	90
57	1079	2373	1295	37.9	39.4	1.5	Minor Adverse	374
58	23632	25249	1617	56.4	56.9	0.5	Minor Adverse	32
59	10255	9045	-1210	48	46.7	-1.2	Minor Beneficial	20
60	8378	7225	-1153	46	44.8	-1.2	Minor Beneficial	144
61	11697	12984	1288	49.4	50.7	1.3	Minor Adverse	113
62	4938	8370	3432	42.3	46	3.7	Moderate Adverse	72
63	11746	13200	1453	49.5	50.9	1.4	Minor Adverse	135
64	11746	13200	1453	49.5	50.9	1.4	Minor Adverse	135
65	1977	3320	1344	38.9	40.5	1.5	Minor Adverse	323
66	5309	6655	1346	42.7	44.2	1.5	Minor Adverse	50
67	4199	6173	1974	41.5	43.7	2.2	Moderate Adverse	16
68	3257	1867	-1389	40.4	38.8	-1.6	Minor Beneficial	80
69	16204	18746	2543	54	54.9	0.8	Minor Adverse	34
70	20160	24033	3874	55.3	56.5	1.2	Minor Adverse	50
71	23632	25249	1616	56.4	56.9	0.5	Minor Adverse	97
72	20190	24813	4623	55.3	56.8	1.4	Minor Adverse	90
73	7985	9733	1748	45.6	47.4	1.8	Minor Adverse	42
74	12698	13829	1131	50.4	51.5	1.1	Minor Adverse	47
75	20190	24813	4623	55.3	56.8	1.4	Minor Adverse	101
76	18428	19548	1120	54.8	55.1	0.36	Negligible	122
77	18429	19547	1118	54.8	55.1	0.36	Negligible	147
78	4695	5742	1048	42	43.2	1.2	Minor Adverse	62
79	12278	11247	-1031	50	49	-1	Minor Beneficial	116
80	4904	6177	1273	42.3	43.7	1.4	Minor Adverse	75

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
81	34450	36617	2167	59.5	60	0.6	Minor Adverse	35
82	22609	24277	1668	56.1	56.6	0.5	Minor Adverse	72
83	23822	25103	1281	56.5	56.9	0.4	Negligible	232
84	23822	25103	1282	56.5	56.9	0.4	Negligible	433
85	17209	6191	-11018	54.4	43.7	-10.7	Significant Beneficial	302
86	17208	6191	-11017	54.4	43.7	-10.7	Significant Beneficial	358
87	4076	5460	1385	41.4	42.9	1.5	Minor Adverse	39
88	26457	24141	-2316	57.3	56.6	-0.7	Minor Beneficial	30
89	18360	9212	-9148	54.8	46.9	-7.9	Significant Beneficial	64
90	32654	22243	-10411	59	56	-3	Moderate Beneficial	157
91	16115	9262	-6853	54	47	-7.1	Significant Beneficial	429
92	28649	25749	-2900	57.9	57.1	-0.8	Minor Beneficial	30
93	31597	29192	-2404	58.7	58.1	-0.7	Minor Beneficial	10
94	15268	17815	2547	53.7	54.6	0.9	Minor Adverse	20
95	15258	17801	2543	53.7	54.6	0.8	Minor Adverse	23
96	3871	5353	1483	41.1	42.8	1.7	Minor Adverse	4
97	15268	17815	2547	53.7	54.6	0.9	Minor Adverse	10
98	37726	36379	-1347	60.3	60	-0.3	Negligible	120
99	37961	36624	-1337	60.4	60.1	-0.3	Negligible	10
100	13922	14947	1025	51.6	52.5	1	Minor Adverse	70
101	12969	13999	1030	50.7	51.6	1	Minor Adverse	10
102	14043	16063	2020	51.7	54	2.3	Moderate Adverse	120
103	14676	16705	2030	52.3	54.2	1.9	Minor Adverse	103
104	12188	9542	-2646	49.9	47.2	-2.7	Moderate Beneficial	683
105	12553	9938	-2615	50.3	47.6	-2.6	Moderate Beneficial	626
106	17845	19804	1960	54.6	55.2	0.6	Minor Adverse	133
107	17310	19504	2194	54.4	55.1	0.7	Minor Adverse	94
108	58386	59779	1393	64.6	64.8	0.2	Negligible	10

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
109	742	2010	1269	37.5	39	1.5	Minor Adverse	63
110	7576	8620	1043	45.2	46.3	1.1	Minor Adverse	70
111	7576	8620	1043	45.2	46.3	1.1	Minor Adverse	62
112	6868	3718	-3151	44.4	40.9	-3.5	Moderate Beneficial	136
113	1671	2787	1116	38.6	39.9	1.3	Minor Adverse	114
114	18632	21475	2843	54.8	55.8	0.9	Minor Adverse	47
115	25608	23316	-2292	57	56.3	-0.7	Minor Beneficial	35
116	27100	25110	-1990	57.5	56.9	-0.6	Minor Beneficial	35
117	29522	27484	-2038	58.1	57.6	-0.6	Minor Beneficial	10
118	30358	28298	-2061	58.4	57.8	-0.6	Minor Beneficial	35
119	28149	26804	-1346	57.8	57.4	-0.4	Negligible	45
120	28183	26840	-1344	57.8	57.4	-0.4	Negligible	35
121	28162	26817	-1345	57.8	57.4	-0.4	Negligible	35
122	4314	5362	1048	41.6	42.8	1.2	Minor Adverse	60
123	4053	5252	1199	41.3	42.7	1.3	Minor Adverse	44
124	3870	5353	1483	41.1	42.8	1.7	Minor Adverse	8
125	16784	19266	2482	54.2	55	0.8	Minor Adverse	20
126	16784	19265	2481	54.2	55	0.8	Minor Adverse	40
127	20325	22578	2253	55.4	56.1	0.7	Minor Adverse	75
128	20962	22979	2017	55.6	56.2	0.6	Minor Adverse	40
129	21905	23576	1671	55.9	56.4	0.5	Minor Adverse	50
130	6144	4585	-1559	43.6	41.9	-1.7	Minor Beneficial	111
131	13461	12060	-1401	51.1	49.8	-1.4	Minor Beneficial	126
132	5740	4730	-1010	43.2	42.1	-1.1	Minor Beneficial	195
133	9364	11240	1876	47.1	49	1.9	Minor Adverse	146
134	29177	27078	-2100	58.1	57.4	-0.6	Minor Beneficial	40
135	35882	34401	-1482	59.9	59.5	-0.4	Negligible	52
136	19074	20213	1139	55	55.4	0.4	Negligible	312

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
137	18162	15643	-2519	54.7	53.9	-0.8	Minor Beneficial	360
138	19136	16550	-2586	55	54.2	-0.8	Minor Beneficial	150
139	5505	6610	1104	42.9	44.1	1.2	Minor Adverse	400
140	21730	19866	-1864	55.8	55.2	-0.6	Minor Beneficial	16
141	16605	14361	-2245	54.2	52	-2.2	Moderate Beneficial	34
142	5189	2429	-2761	42.6	39.5	-3.1	Moderate Beneficial	170
143	5777	2289	-3488	43.2	39.3	-3.9	Moderate Beneficial	20
144	7337	5520	-1817	44.9	43	-2	Minor Beneficial	130
145	6377	4349	-2027	43.9	41.7	-2.2	Moderate Beneficial	100
146	13274	14485	1211	51	52.1	1.2	Minor Adverse	63
147	22610	24277	1667	56.1	56.6	0.5	Minor Adverse	74
148	22981	24290	1310	56.2	56.6	0.4	Negligible	32
149	47873	48885	1012	62.6	62.9	0.2	Negligible	25
150	417	1556	1139	37.1	38.5	1.3	Minor Adverse	372
151	1284	2296	1011	38.1	39.3	1.2	Minor Adverse	126
152	55416	57335	1919	64.1	64.4	0.3	Negligible	45
153	58373	59760	1387	64.6	64.8	0.2	Negligible	20
154	5472	6795	1323	42.9	44.3	1.4	Minor Adverse	183
155	55416	57332	1916	64.1	64.4	0.3	Negligible	22
156	29479	31098	1620	58.1	58.6	0.5	Minor Adverse	224
157	29479	31098	1620	58.1	58.6	0.5	Minor Adverse	152
158	27130	28429	1299	57.5	57.8	0.4	Negligible	98
159	3087	5740	2653	40.2	43.2	3	Moderate Adverse	168
160	26519	28858	2339	57.3	58	0.7	Minor Adverse	168
161	5286	4045	-1241	42.7	41.3	-1.4	Minor Beneficial	63
162	29966	32657	2691	58.3	59	0.7	Minor Adverse	76
163	6257	5198	-1059	43.8	42.6	-1.2	Minor Beneficial	221
164	17007	14799	-2208	54.3	52.4	-1.9	Minor Beneficial	137
165	16567	14424	-2143	54.2	52	-2.1	Moderate Beneficial	220

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
166	8648	5107	-3541	46.3	42.5	-3.8	Moderate Beneficial	120
167	12029	7373	-4656	49.7	45	-4.8	Significant Beneficial	91
168	28026	30127	2101	57.7	58.3	0.6	Minor Adverse	138
169	30179	32442	2263	58.3	59	0.6	Minor Adverse	120
170	28812	30568	1755	57.9	58.4	0.5	Minor Adverse	34
171	27837	29626	1789	57.7	58.2	0.5	Minor Adverse	35
172	29206	30938	1732	58.1	58.5	0.5	Minor Adverse	40
173	7966	5544	-2422	45.6	43	-2.6	Moderate Beneficial	128
174	6714	3920	-2794	44.3	41.2	-3.1	Moderate Beneficial	195
175	2450	4084	1634	39.5	41.4	1.9	Minor Adverse	89
176	4203	1343	-2859	41.5	38.2	-3.3	Moderate Beneficial	112
177	25755	27449	1694	57.1	57.6	0.5	Minor Adverse	41
178	27837	29625	1788	57.7	58.2	0.5	Minor Adverse	42
179	7696	2631	-5066	45.3	39.7	-5.6	Significant Beneficial	73
180	7966	5544	-2422	45.6	43	-2.6	Moderate Beneficial	107
181	4004	2963	-1041	41.3	40.1	-1.2	Minor Beneficial	39
182	9606	7883	-1723	47.3	45.5	-1.8	Minor Beneficial	111
183	30062	27803	-2259	58.3	57.7	-0.6	Minor Beneficial	57
184	6154	4693	-1461	43.7	42	-1.6	Minor Beneficial	94
185	9606	7883	-1723	47.3	45.5	-1.8	Minor Beneficial	74
186	26857	25112	-1745	57.4	56.9	-0.5	Minor Beneficial	80
187	24976	26674	1698	56.8	57.3	0.5	Minor Adverse	38
188	31235	29460	-1775	58.6	58.1	-0.5	Minor Beneficial	103
189	25782	20756	-5025	57.1	55.5	-1.5	Minor Beneficial	73
190	29447	26797	-2649	58.1	57.4	-0.8	Minor Beneficial	44
191	14828	2915	-11913	52.4	40	-12.4	Significant Beneficial	71
192	9342	2054	-7288	47	39	-8	Significant Beneficial	101

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
193	26352	24227	-2125	57.2	56.6	-0.6	Minor Beneficial	244
194	25192	20090	-5102	56.9	55.3	-1.6	Minor Beneficial	83
195	25782	20756	-5025	57.1	55.5	-1.5	Minor Beneficial	87
196	4517	5704	1187	41.8	43.2	1.3	Minor Adverse	790
197	29322	26857	-2465	58.1	57.4	-0.7	Minor Beneficial	76
198	3795	4887	1092	41	42.3	1.2	Minor Adverse	96
199	6065	8497	2431	43.6	46.2	2.6	Moderate Adverse	164
200	10401	12190	1789	48.1	49.9	1.8	Minor Adverse	63
201	13307	2319	-10988	51	39.3	-11.6	Significant Beneficial	115
202	7798	3850	-3948	45.4	41.1	-4.3	Significant Beneficial	70
203	28443	17617	-10826	57.8	54.5	-3.3	Moderate Beneficial	142
204	24152	18308	-5845	56.6	54.7	-1.8	Minor Beneficial	248
205	33843	22289	-11554	59.3	56	-3.3	Moderate Beneficial	249
206	34067	23676	-10391	59.4	56.4	-3	Moderate Beneficial	233
207	31163	29100	-2063	58.6	58	-0.6	Minor Beneficial	89
208	32502	30862	-1640	59	58.5	-0.4	Minor Beneficial	84
209	28889	27829	-1061	58	57.7	-0.3	Negligible	10
210	26755	25618	-1137	57.4	57	-0.3	Negligible	529
211	18587	21343	2756	54.8	55.7	0.9	Minor Adverse	385
212	18616	21412	2796	54.8	55.7	0.9	Minor Adverse	107
213	7293	8641	1347	44.9	46.3	1.4	Minor Adverse	104
214	1118	2245	1127	37.9	39.3	1.3	Minor Adverse	125
215	10858	12849	1991	48.6	50.5	2	Minor Adverse	76
216	3889	5068	1180	41.1	42.5	1.3	Minor Adverse	56
217	9476	10504	1028	47.2	48.2	1	Minor Adverse	150
218	22576	24320	1744	56.1	56.6	0.5	Minor Adverse	23
219	18976	15075	-3902	55	53.7	-1.3	Minor Beneficial	343

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
220	11782	9334	-2448	49.5	47	-2.5	Moderate Beneficial	189
221	13700	11861	-1839	51.4	49.6	-1.8	Minor Beneficial	433
222	22324	24277	1954	56	56.6	0.6	Minor Adverse	19
223	22576	24322	1746	56.1	56.6	0.5	Minor Adverse	21
224	15285	16867	1582	53.7	54.3	0.5	Minor Adverse	27
225	18276	20550	2274	54.7	55.5	0.7	Minor Adverse	10
226	22324	24277	1954	56	56.6	0.6	Minor Adverse	10
227	13134	8400	-4734	50.8	46.1	-4.8	Significant Beneficial	77
228	8951	5181	-3770	46.6	42.6	-4	Significant Beneficial	139
229	18671	21065	2394	54.9	55.6	0.8	Minor Adverse	54
230	18670	21063	2393	54.9	55.6	0.8	Minor Adverse	55
231	21943	10686	-11258	55.9	48.4	-7.5	Significant Beneficial	21
232	24894	17313	-7581	56.8	54.4	-2.4	Moderate Beneficial	212
233	34474	24444	-10030	59.5	56.7	-2.8	Moderate Beneficial	465
234	11670	4981	-6689	49.4	42.4	-7	Significant Beneficial	201
235	31838	17583	-14254	58.8	54.5	-4.3	Significant Beneficial	312
236	14600	9746	-4854	52.2	47.5	-4.8	Significant Beneficial	203
237	10519	8925	-1594	48.2	46.6	-1.6	Minor Beneficial	201
238	4236	3100	-1136	41.5	40.2	-1.3	Minor Beneficial	115
239	24170	22641	-1529	56.6	56.1	-0.5	Minor Beneficial	20
240	2844	3983	1139	40	41.2	1.3	Minor Adverse	10
241	37151	34310	-2841	60.2	59.5	-0.7	Minor Beneficial	70
242	51682	49678	-2004	63.4	63	-0.4	Negligible	142
243	41809	38742	-3067	61.3	60.6	-0.7	Minor Beneficial	32
244	29896	28813	-1083	58.3	57.9	-0.3	Negligible	27
245	7243	5482	-1761	44.8	42.9	-1.9	Minor Beneficial	67
246	31837	17583	-14254	58.8	54.5	-4.3	Significant Beneficial	400

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
247	41716	39048	-2668	61.3	60.7	-0.6	Minor Beneficial	55
248	11551	10482	-1070	49.3	48.2	-1.1	Minor Beneficial	12
249	27940	25905	-2035	57.7	57.1	-0.6	Minor Beneficial	150
250	29757	27636	-2121	58.2	57.6	-0.6	Minor Beneficial	37
251	36886	33027	-3859	60.1	59.1	-1	Minor Beneficial	82
252	40372	34266	-6106	61	59.4	-1.5	Minor Beneficial	148
253	20854	19123	-1730	55.6	55	-0.6	Minor Beneficial	164
254	16159	14464	-1695	54	52.1	-1.9	Minor Beneficial	66
255	24168	11877	-12291	56.6	49.6	-7	Significant Beneficial	93
256	15717	8117	-7600	53.9	45.8	-8.1	Significant Beneficial	31
257	18391	13030	-5361	54.8	50.7	-4	Significant Beneficial	80
258	10554	8999	-1555	48.3	46.7	-1.6	Minor Beneficial	43
259	19795	20997	1202	55.2	55.6	0.4	Negligible	24
260	23441	24796	1355	56.4	56.8	0.4	Minor Adverse	72
261	20858	18791	-2067	55.6	54.9	-0.7	Minor Beneficial	56
262	4032	2866	-1167	41.3	40	-1.3	Minor Beneficial	210
263	13375	8437	-4938	51.1	46.1	-5	Significant Beneficial	201
264	19910	12343	-7566	55.3	50.1	-5.2	Significant Beneficial	78
265	22600	15171	-7429	56.1	53.7	-2.4	Moderate Beneficial	92
266	6606	4439	-2167	44.1	41.8	-2.4	Moderate Beneficial	185
267	15038	7757	-7281	53.6	45.4	-8.3	Significant Beneficial	123
268	14291	15297	1006	51.9	53.7	1.8	Minor Adverse	146
269	17845	19805	1960	54.6	55.2	0.6	Minor Adverse	31
270	7948	6366	-1582	45.6	43.9	-1.7	Minor Beneficial	130
271	17584	16487	-1097	54.5	54.1	-0.4	Negligible	105
272	7730	9080	1349	45.3	46.8	1.4	Minor Adverse	281
273	3004	4185	1181	40.1	41.5	1.3	Minor Adverse	85

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
274	9384	10531	1147	47.1	48.3	1.2	Minor Adverse	77
275	4411	5617	1206	41.7	43.1	1.3	Minor Adverse	92
276	22981	24289	1309	56.2	56.6	0.4	Negligible	53
277	8540	5156	-3383	46.2	42.6	-3.6	Moderate Beneficial	158
278	11079	12167	1088	48.8	49.9	1.1	Minor Adverse	74
279	7300	8751	1451	44.9	46.4	1.5	Minor Adverse	218
280	14397	6608	-7790	52	44.1	-7.9	Significant Beneficial	117
281	9378	10521	1144	47.1	48.2	1.2	Minor Adverse	101
282	5682	2915	-2767	43.1	40	-3.1	Moderate Beneficial	41
283	7205	3509	-3696	44.8	40.7	-4.1	Significant Beneficial	75
284	9993	11481	1488	47.7	49.2	1.5	Minor Adverse	19
285	2080	3660	1580	39.1	40.9	1.8	Minor Adverse	125
286	2967	1805	-1162	40.1	38.7	-1.3	Minor Beneficial	204
287	742	2010	1269	37.5	39	1.5	Minor Adverse	107
288	742	2010	1269	37.5	39	1.5	Minor Adverse	27
289	2967	1805	-1162	40.1	38.7	-1.3	Minor Beneficial	177
290	6154	4693	-1461	43.7	42	-1.6	Minor Beneficial	72
291	8676	5227	-3449	46.3	42.6	-3.7	Moderate Beneficial	31
292	298	1642	1343	37	38.6	1.6	Minor Adverse	98
293	12285	9532	-2753	50	47.2	-2.8	Moderate Beneficial	179
294	16592	19501	2910	54.2	55.1	1	Minor Adverse	34
295	16592	19501	2910	54.2	55.1	1	Minor Adverse	64
296	55398	57319	1921	64.1	64.4	0.3	Negligible	44
297	19579	20759	1180	55.1	55.5	0.4	Negligible	82
298	13926	14953	1028	51.6	52.5	1	Minor Adverse	58
299	5530	4372	-1158	43	41.7	-1.3	Minor Beneficial	414
300	5530	4372	-1158	43	41.7	-1.3	Minor Beneficial	95
301	10128	6213	-3914	47.8	43.7	-4.1	Significant Beneficial	566

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
302	29603	26977	-2626	58.2	57.4	-0.8	Minor Beneficial	821
303	19475	20764	1289	55.1	55.5	0.4	Minor Adverse	1205
304	14369	12175	-2194	52	49.9	-2.1	Moderate Beneficial	362
305	20928	22789	1861	55.6	56.2	0.6	Minor Adverse	1232
306	12405	10482	-1923	50.1	48.2	-1.9	Minor Beneficial	153
307	11502	9861	-1641	49.2	47.6	-1.7	Minor Beneficial	205
308	7104	5888	-1216	44.7	43.4	-1.3	Minor Beneficial	88
309	7664	9244	1579	45.3	46.9	1.7	Minor Adverse	199
310	13044	11541	-1503	50.7	49.3	-1.5	Minor Beneficial	112
311	9571	5941	-3630	47.3	43.4	-3.8	Moderate Beneficial	281
312	10400	7565	-2835	48.1	45.2	-2.9	Moderate Beneficial	192
313	19834	5638	-14196	55.2	43.1	-12.1	Significant Beneficial	70
314	20897	19332	-1565	55.6	55.1	-0.5	Minor Beneficial	109
315	10463	740	-9723	48.2	37.5	-10.7	Significant Beneficial	93
316	19423	17392	-2031	55.1	54.4	-0.7	Minor Beneficial	212
317	21633	19499	-2134	55.8	55.1	-0.7	Minor Beneficial	82
318	25774	24749	-1025	57.1	56.8	-0.3	Negligible	99
319	4053	5252	1199	41.3	42.7	1.3	Minor Adverse	10
320	10401	7565	-2836	48.1	45.2	-2.9	Moderate Beneficial	156
321	5286	4045	-1241	42.7	41.3	-1.4	Minor Beneficial	66
322	19573	20748	1175	55.1	55.5	0.4	Negligible	161
323	29178	27076	-2102	58.1	57.4	-0.6	Minor Beneficial	52
324	11948	10177	-1770	49.7	47.9	-1.8	Minor Beneficial	59
325	14054	12343	-1711	51.7	50.1	-1.6	Minor Beneficial	84
326	23091	18156	-4936	56.3	54.7	-1.6	Minor Beneficial	268
327	24976	26673	1697	56.8	57.3	0.5	Minor Adverse	73
328	57051	54969	-2082	64.4	64	-0.4	Negligible	10
329	25644	23354	-2290	57	56.3	-0.7	Minor Beneficial	10

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
330	9000	6746	-2254	46.7	44.3	-2.4	Moderate Beneficial	281
331	7234	5471	-1763	44.8	42.9	-1.9	Minor Beneficial	222
332	12882	15220	2339	50.6	53.7	3.1	Moderate Adverse	14
333	22318	24269	1951	56	56.6	0.6	Minor Adverse	28
334	4065	5413	1348	41.3	42.8	1.5	Minor Adverse	116
335	10534	8956	-1577	48.3	46.6	-1.6	Minor Beneficial	190
336	7781	9386	1604	45.4	47.1	1.7	Minor Adverse	196
337	9858	12013	2155	47.6	49.7	2.2	Moderate Adverse	21
338	22570	24313	1744	56.1	56.6	0.5	Minor Adverse	20
339	58368	59779	1411	64.6	64.8	0.2	Negligible	25
340	58351	59762	1411	64.6	64.8	0.2	Negligible	37
341	899	2287	1389	37.7	39.3	1.6	Minor Adverse	131
342	27837	29625	1788	57.7	58.2	0.5	Minor Adverse	40
343	2450	4084	1634	39.5	41.4	1.9	Minor Adverse	267
344	4004	2963	-1041	41.3	40.1	-1.2	Minor Beneficial	41
345	45861	43994	-1867	62.2	61.8	-0.4	Minor Beneficial	40
346	29336	26878	-2458	58.1	57.4	-0.7	Minor Beneficial	52
347	4053	5252	1199	41.3	42.7	1.3	Minor Adverse	44
348	14369	12174	-2195	52	49.9	-2.1	Moderate Beneficial	33
349	6205	3600	-2605	43.7	40.8	-2.9	Moderate Beneficial	118
350	8541	6458	-2083	46.2	44	-2.2	Moderate Beneficial	52
351	28813	30568	1755	57.9	58.4	0.5	Minor Adverse	32
352	9272	10831	1559	47	48.6	1.6	Minor Adverse	42
353	7843	10330	2488	45.5	48	2.6	Moderate Adverse	176
354	13651	15904	2252	51.3	53.9	2.6	Moderate Adverse	101
355	16993	19336	2343	54.3	55.1	0.8	Minor Adverse	76
356	8612	9970	1359	46.3	47.7	1.4	Minor Adverse	45

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
357	4065	5413	1348	41.3	42.8	1.5	Minor Adverse	118
358	33987	36075	2088	59.4	59.9	0.5	Minor Adverse	159
359	33987	36075	2088	59.4	59.9	0.5	Minor Adverse	117
360	4793	5932	1139	42.2	43.4	1.3	Minor Adverse	40
361	9377	10521	1144	47.1	48.2	1.2	Minor Adverse	54
362	19881	9107	-10774	55.2	46.8	-8.5	Significant Beneficial	332
363	41847	38990	-2857	61.3	60.6	-0.7	Minor Beneficial	53
364	7602	6501	-1101	45.2	44	-1.2	Minor Beneficial	65
365	46755	47907	1152	62.4	62.7	0.2	Negligible	25
366	10107	11156	1049	47.8	48.9	1.1	Minor Adverse	10
367	42749	43984	1235	61.5	61.8	0.3	Negligible	9
368	38217	39335	1118	60.4	60.7	0.3	Negligible	10
369	43371	44729	1357	61.7	62	0.3	Negligible	15
370	46719	48358	1639	62.4	62.8	0.3	Negligible	25
371	37223	38278	1055	60.2	60.5	0.3	Negligible	37
372	41636	42832	1196	61.3	61.5	0.3	Negligible	474
373	42600	43828	1228	61.5	61.8	0.3	Negligible	6
374	55496	56899	1403	64.1	64.4	0.2	Negligible	56
375	46718	48358	1640	62.4	62.8	0.3	Negligible	10
376	46714	48359	1645	62.4	62.8	0.3	Negligible	10
377	6698	7713	1016	44.2	45.3	1.1	Minor Adverse	266
378	9936	11413	1477	47.6	49.1	1.5	Minor Adverse	22
379	13763	15282	1518	51.4	53.7	2.3	Moderate Adverse	66
380	12350	13833	1483	50.1	51.5	1.4	Minor Adverse	41
381	14677	16183	1506	52.3	54	1.7	Minor Adverse	30
382	10107	11156	1049	47.8	48.9	1.1	Minor Adverse	17
383	4081	5270	1189	41.4	42.7	1.3	Minor Adverse	59
384	2073	3269	1195	39.1	40.4	1.4	Minor Adverse	111
385	3476	4622	1146	40.7	42	1.3	Minor Adverse	70
386	9889	11200	1311	47.6	48.9	1.3	Minor Adverse	113

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
387	4004	2964	-1040	41.3	40.1	-1.2	Minor Beneficial	157
388	43371	44726	1355	61.7	62	0.3	Negligible	10
389	46756	47908	1152	62.4	62.7	0.2	Negligible	11
390	42742	43974	1233	61.5	61.8	0.3	Negligible	34
391	42710	43935	1225	61.5	61.8	0.3	Negligible	43
392	34242	35444	1202	59.4	59.7	0.3	Negligible	54
393	10106	11155	1049	47.8	48.9	1.1	Minor Adverse	20
394	10097	11143	1046	47.8	48.9	1.1	Minor Adverse	45
395	10107	11156	1049	47.8	48.9	1.1	Minor Adverse	50
396	10098	11144	1046	47.8	48.9	1.1	Minor Adverse	46
397	14677	16183	1506	52.3	54	1.7	Minor Adverse	11
398	2073	3269	1195	39.1	40.4	1.4	Minor Adverse	30
399	2073	3269	1195	39.1	40.4	1.4	Minor Adverse	43
400	46735	47886	1152	62.4	62.7	0.2	Negligible	10
401	46710	47857	1147	62.4	62.6	0.2	Negligible	10
402	46712	47854	1142	62.4	62.6	0.2	Negligible	10
403	43327	44672	1345	61.7	62	0.3	Negligible	30
404	46672	48302	1629	62.4	62.7	0.3	Negligible	30
405	46684	48330	1646	62.4	62.7	0.3	Negligible	58
406	8369	9836	1467	46	47.5	1.5	Minor Adverse	44
407	10408	11433	1025	48.1	49.2	1	Minor Adverse	125
408	8369	9836	1467	46	47.5	1.5	Minor Adverse	46
409	8367	9833	1466	46	47.5	1.5	Minor Adverse	31
410	8365	9830	1465	46	47.5	1.5	Minor Adverse	40
411	8366	9832	1466	46	47.5	1.5	Minor Adverse	60
412	31329	33684	2355	58.7	59.3	0.6	Minor Adverse	117
413	32418	33524	1106	58.9	59.2	0.3	Negligible	221
414	34774	36733	1959	59.6	60.1	0.5	Minor Adverse	134
415	34774	36733	1959	59.6	60.1	0.5	Minor Adverse	230
416	10406	9207	-1200	48.1	46.9	-1.2	Minor Beneficial	19
417	32416	33518	1102	58.9	59.2	0.3	Negligible	291

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
418	37275	38484	1209	60.2	60.5	0.3	Negligible	236
419	33906	36685	2779	59.3	60.1	0.7	Minor Adverse	49
420	23632	25249	1616	56.4	56.9	0.5	Minor Adverse	71
421	17746	20217	2471	54.6	55.4	0.8	Minor Adverse	33
422	9482	11267	1785	47.2	49	1.8	Minor Adverse	45
423	4161	2949	-1212	41.4	40.1	-1.4	Minor Beneficial	276
424	3515	2487	-1028	40.7	39.5	-1.2	Minor Beneficial	80
425	19817	23775	3957	55.2	56.5	1.2	Minor Adverse	101
426	20164	24046	3882	55.3	56.5	1.2	Minor Adverse	50
427	24705	23680	-1025	56.7	56.4	-0.3	Negligible	317
428	6605	7717	1111	44.1	45.3	1.2	Minor Adverse	59
429	15668	14583	-1085	53.9	52.2	-1.7	Minor Beneficial	50
430	9482	11256	1774	47.2	49	1.8	Minor Adverse	160
431	10069	8915	-1154	47.8	46.6	-1.2	Minor Beneficial	19
432	9474	8321	-1153	47.2	46	-1.2	Minor Beneficial	97
433	3874	2678	-1196	41.1	39.8	-1.4	Minor Beneficial	34
434	4969	8518	3549	42.4	46.2	3.8	Moderate Adverse	344
435	18428	19548	1120	54.8	55.1	0.4	Negligible	78
436	10381	9270	-1111	48.1	47	-1.1	Minor Beneficial	30
437	4964	8514	3550	42.3	46.2	3.8	Moderate Adverse	193
438	4969	8519	3549	42.4	46.2	3.8	Moderate Adverse	45
439	10411	14606	4195	48.1	52.2	4.1	Significant Adverse	199
440	9884	14625	4741	47.6	52.2	4.6	Significant Adverse	178
441	8493	7296	-1196	46.2	44.9	-1.3	Minor Beneficial	325
442	9402	8359	-1043	47.1	46	-1.1	Minor Beneficial	30
443	16160	18569	2409	54	54.8	0.8	Minor Adverse	42
444	11019	12771	1751	48.7	50.5	1.7	Minor Adverse	186
445	12692	14680	1988	50.4	52.3	1.9	Minor Adverse	64

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
446	12736	14972	2236	50.4	52.6	2.1	Moderate Adverse	55
447	18443	19567	1124	54.8	55.1	0.4	Negligible	47
448	10381	9271	-1110	48.1	47	-1.1	Minor Beneficial	13
449	14376	13208	-1168	52	50.9	-1.1	Minor Beneficial	172
450	7415	8457	1042	45	46.1	1.1	Minor Adverse	200
451	14362	13192	-1170	52	50.9	-1.1	Minor Beneficial	46
452	9932	8780	-1152	47.6	46.5	-1.2	Minor Beneficial	27
453	6820	7834	1015	44.4	45.5	1.1	Minor Adverse	224
454	5060	6321	1260	42.5	43.8	1.4	Minor Adverse	105
455	9993	11322	1330	47.7	49	1.3	Minor Adverse	172
456	4161	2947	-1214	41.4	40.1	-1.4	Minor Beneficial	74
457	10878	14264	3387	48.6	51.9	3.3	Moderate Adverse	300
458	11510	12846	1336	49.2	50.5	1.3	Minor Adverse	50
459	5859	6972	1113	43.3	44.5	1.2	Minor Adverse	78
460	3731	2520	-1212	41	39.6	-1.4	Minor Beneficial	21
461	10365	9253	-1112	48.1	46.9	-1.1	Minor Beneficial	93
462	14376	13208	-1167	52	50.9	-1.1	Minor Beneficial	18
463	9894	11224	1330	47.6	48.9	1.3	Minor Adverse	170
464	14442	13031	-1411	52.1	50.7	-1.3	Minor Beneficial	160
465	11124	8137	-2987	48.8	45.8	-3.1	Moderate Beneficial	64
466	4076	5460	1384	41.4	42.9	1.5	Minor Adverse	32
467	7243	9862	2619	44.8	47.6	2.7	Moderate Adverse	46
468	19707	9194	-10513	55.2	46.9	-8.3	Significant Beneficial	64
469	23949	16051	-7898	56.5	54	-2.5	Moderate Beneficial	64
470	15645	11068	-4577	53.9	48.8	-5.1	Significant Beneficial	56
471	11125	8139	-2986	48.8	45.8	-3.1	Moderate Beneficial	45
472	12017	13672	1655	49.7	51.3	1.6	Minor Adverse	35

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
473	12958	9496	-3462	50.6	47.2	-3.5	Moderate Beneficial	31
474	10265	11340	1074	48	49.1	1.1	Minor Adverse	60
475	11889	13177	1287	49.6	50.9	1.3	Minor Adverse	66
476	18632	21475	2842	54.8	55.8	0.9	Minor Adverse	69
477	11827	10751	-1076	49.5	48.5	-1.1	Minor Beneficial	54
478	15318	17070	1752	53.7	54.3	0.6	Minor Adverse	56
479	8548	9624	1076	46.2	47.3	1.1	Minor Adverse	91
480	6168	7832	1664	43.7	45.5	1.8	Minor Adverse	79
481	7242	9862	2620	44.8	47.6	2.7	Moderate Adverse	34
482	6168	7832	1664	43.7	45.5	1.8	Minor Adverse	28
483	16253	17359	1106	54.1	54.4	0.4	Negligible	20
484	26586	27710	1124	57.3	57.6	0.3	Negligible	105
485	15443	16478	1035	53.8	54.1	0.3	Negligible	41
486	12240	13258	1018	50	50.9	1	Minor Adverse	186
487	11519	12638	1118	49.2	50.3	1.1	Minor Adverse	150
488	9839	12045	2206	47.5	49.8	2.2	Moderate Adverse	52
489	8104	9156	1051	45.7	46.8	1.1	Minor Adverse	101
490	8867	10076	1210	46.5	47.8	1.2	Minor Adverse	44
491	8184	9238	1054	45.8	46.9	1.1	Minor Adverse	58
492	19918	9247	-10671	55.3	46.9	-8.3	Significant Beneficial	10
493	34021	36118	2098	59.4	59.9	0.5	Minor Adverse	36
494	34450	36617	2167	59.5	60	0.6	Minor Adverse	60
495	8173	9211	1038	45.8	46.9	1.1	Minor Adverse	77
496	8173	9211	1038	45.8	46.9	1.1	Minor Adverse	118
497	12939	9450	-3489	50.6	47.1	-3.5	Moderate Beneficial	69
498	12949	9483	-3466	50.6	47.2	-3.5	Moderate Beneficial	55
499	7239	9857	2618	44.8	47.6	2.7	Moderate Adverse	141
500	7239	9857	2618	44.8	47.6	2.7	Moderate Adverse	74

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
501	16245	17348	1104	54.1	54.4	0.4	Negligible	88
502	16252	17358	1106	54.1	54.4	0.4	Negligible	93
503	16097	17188	1091	54	54.4	0.4	Negligible	80
504	12948	9480	-3468	50.6	47.2	-3.5	Moderate Beneficial	22
505	12960	9497	-3463	50.7	47.2	-3.5	Moderate Beneficial	77
506	7239	9857	2618	44.8	47.6	2.7	Moderate Adverse	79
507	11409	13522	2113	49.1	51.2	2.1	Moderate Adverse	31
508	11402	13511	2109	49.1	51.2	2.1	Moderate Adverse	25
509	11399	13501	2102	49.1	51.2	2.1	Moderate Adverse	177
510	9185	11113	1929	46.9	48.8	1.96	Minor Adverse	39
511	15309	17047	1738	53.7	54.3	0.6	Minor Adverse	122
512	15307	17049	1741	53.7	54.3	0.6	Minor Adverse	124
513	11511	12625	1114	49.2	50.3	1.1	Minor Adverse	81
514	11515	12631	1116	49.2	50.3	1.1	Minor Adverse	62
515	12390	13402	1013	50.1	51.1	1	Minor Adverse	14
516	12385	13395	1009	50.1	51.1	1	Minor Adverse	142
517	11107	8102	-3004	48.8	45.7	-3.1	Moderate Beneficial	127
518	6163	7824	1660	43.7	45.4	1.8	Minor Adverse	46
519	5945	7780	1835	43.4	45.4	1.98	Minor Adverse	117
520	7234	9848	2613	44.8	47.6	2.7	Moderate Adverse	58
521	20156	24028	3871	55.3	56.5	1.2	Minor Adverse	179
522	2679	1575	-1104	39.8	38.5	-1.3	Minor Beneficial	130
523	2679	1575	-1105	39.8	38.5	-1.3	Minor Beneficial	119
524	2754	1641	-1113	39.8	38.6	-1.3	Minor Beneficial	200
525	26687	27806	1119	57.3	57.7	0.3	Negligible	133
526	34449	36616	2167	59.5	60	0.6	Minor Adverse	3
527	11408	13523	2116	49.1	51.2	2.1	Moderate Adverse	106
528	11408	13524	2116	49.1	51.2	2.1	Moderate Adverse	17

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration (µg/m^3)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
529	12520	13617	1097	50.2	51.3	1.1	Minor Adverse	45
530	18351	7722	-10629	54.8	45.3	-9.4	Significant Beneficial	10
531	16797	6108	-10688	54.2	43.6	-10.6	Significant Beneficial	10
532	16797	6108	-10688	54.2	43.6	-10.6	Significant Beneficial	10
533	2249	24	-2225	39.3	36.6	-2.6	Moderate Beneficial	15
534	17643	9090	-8553	54.5	46.8	-7.7	Significant Beneficial	30
535	2249	24	-2225	39.3	36.6	-2.6	Moderate Beneficial	15
536	28171	29706	1535	57.8	58.2	0.4	Minor Adverse	28
537	57645	56223	-1422	64.5	64.3	-0.2	Negligible	438
538	32930	31051	-1879	59.1	58.6	-0.5	Minor Beneficial	110
539	20578	18559	-2019	55.5	54.8	-0.6	Minor Beneficial	71
540	29717	28481	-1236	58.2	57.9	-0.4	Negligible	34
541	32823	31161	-1662	59.1	58.6	-0.5	Minor Beneficial	220
542	16610	14367	-2244	54.2	52	-2.2	Moderate Beneficial	97
543	12405	13446	1041	50.1	51.1	1	Minor Adverse	115
544	42762	39953	-2809	61.5	60.9	-0.7	Minor Beneficial	344
545	6224	7305	1081	43.7	44.9	1.2	Minor Adverse	24
546	64868	61936	-2932	65.6	65.2	-0.4	Minor Beneficial	1343
547	23833	25077	1244	56.5	56.9	0.4	Negligible	335
548	26820	28039	1219	57.4	57.7	0.4	Negligible	286
549	19127	20438	1311	55	55.4	0.4	Minor Adverse	167
550	24887	26021	1134	56.8	57.1	0.3	Negligible	78
551	32930	31051	-1879	59.1	58.6	-0.5	Minor Beneficial	70
552	29194	28003	-1190	58.1	57.7	-0.3	Negligible	105
553	29717	28481	-1236	58.2	57.9	-0.4	Negligible	101
554	27820	26636	-1184	57.7	57.3	-0.3	Negligible	273
555	21651	22956	1306	55.8	56.2	0.4	Minor Adverse	230
556	30228	32145	1917	58.3	58.9	0.5	Minor Adverse	92
557	18256	19899	1643	54.7	55.3	0.5	Minor Adverse	230

Link Reference	Traffic Flow (veh/day)			Predicted NO_2 Concentration ($\mu g/m^3$)			Significance of Impact	Road length (m)
	DM	DS	Change	DM	DS	Change		
558	17503	19117	1614	54.5	55	0.5	Minor Adverse	564
559	18126	19723	1597	54.7	55.2	0.5	Minor Adverse	396
560	23436	24786	1350	56.4	56.8	0.4	Minor Adverse	186
561	18811	20135	1325	54.9	55.3	0.4	Minor Adverse	87
562	14054	12341	-1713	51.7	50	-1.6	Minor Beneficial	51
563	30117	27988	-2129	58.3	57.7	-0.6	Minor Beneficial	80
564	21519	22827	1308	55.8	56.2	0.4	Minor Adverse	110

Appendix H: Environmental Data Sources

Category	Dataset	Source
Sensitive Site	National Nature Reserve	English Nature
	Scheduled Ancient Monument	English Heritage
	Special Area of Conservation	English Nature
	Special Protection Area	English Nature
	Site of Special Scientific Interest	English Nature
	World Heritage site	English Heritage
Designated Landscape	Metropolitan Open Land	Greater London Authority
	Green Belt	Not available
Site of Importance for Nature Conservation	Metropolitan	Greater London Authority
	Borough grade 1	Greater London Authority
	Borough grade 2	Greater London Authority
	Local significance	Greater London Authority
TfL habitat site	TfL habitat sites	Transport for London Ecological Survey 2005
Protected Species	All Protected Species	Greenspace Information for Greater London (GIGL)
Heritage Conservation Area	Archaeological priority area	Local Authority Data.
	Conservation area	Local Authority Data.
	Locally Listed Building	Local Authority Data.
	Nationally listed building	English Heritage
	Millennium Greens	Defra
	London Square	English Heritage
	Registered Battlefields	English heritage
	Registered park or garden	English heritage
Flood Risk	Flood Zone 2	Environment Agency
	Flood zone 3	Environment Agency
	Flood risk area	Environment Agency
	Flood defences	Environment Agency
	Flood events (TLRN only)	Transport for London Asset Information Management System
	Increase hard surfaced area	N/A
Noise Data	Important Areas for Noise	Defra
Air Quality	Areas of air quality standard exceedance	TfL