

# Managing environmental impacts, current and future performance



■ Crossrail is reusing excavated materials at Wallasea Island for the Royal Society for the Protection of Birds

# Carbon, energy and climate resilience

## Reducing carbon emissions and preparing for the potential impacts of climate change and extreme weather

We are currently the single biggest consumer of electricity in London and one of the top 10 in the UK. Electricity consumption is a significant contributor to climate change and we have a responsibility to use energy efficiently.

As we continue to invest in transport infrastructure and service capacity, one of our major challenges is how to reduce total carbon emissions. Progressively improving the efficiency of our operations is essential if this is to be achieved.

Approximately half of our carbon dioxide (CO<sub>2</sub>) emissions come from electricity used for powering the Tube; the other half is associated with hydrocarbon fuel use in buses, support fleet vehicles and emissions from the taxis and private hire vehicles that we license.

### Achievements

We set a target to reduce the normalised CO<sub>2</sub> emissions (measured in grams of CO<sub>2</sub> per passenger kilometre) from our main public transport services by 20 per cent in 2017/18, against a 2005/06 baseline (equivalent to 1990 emissions). In 2013, we reported a fall in normalised emissions to 61 grams equivalent CO<sub>2</sub> (CO<sub>2</sub>e) per passenger kilometre, slightly more than 20 per cent below the baseline (77 grams CO<sub>2</sub> per passenger kilometre). As a result, we achieved the 2017/18 target in 2013. We are now setting a more ambitious goal to support the Mayor's aim of a 60 per cent CO<sub>2</sub> reduction in London by 2025.

We have looked at how we purchase electricity, including considering lower carbon and diversified sources, and have introduced

procurement processes to develop this further. We have also put in place a range of measures to help monitor and manage our electricity use. These include installing automatic meters at more than half of our Tube stations and in many surface transport operational premises and demonstrate carbon assessment into project decision-making and management.

In addition, we have implemented energy efficiency initiatives across our head offices, Underground and Surface Transport business areas. Those that ensure efficient use of electricity to power Tube trains are best delivered as lines and trains are upgraded. Measures implemented during recent improvement work, for instance on the Victoria line, include using regenerative braking – where energy otherwise lost when trains slow down is captured and made available for use by following trains.

A number of innovative measures have been tested at Vauxhall bus station, Walworth bus garage, head office buildings and at Leicester Square and Sloane Square Tube stations. These include renewable energy, lighting, centralised cooling and heat recovery systems, plus automation and control technology. The most successful measures will be introduced elsewhere across our organisation.

We have significantly reduced CO<sub>2</sub> emissions from our bus fleet by introducing hybrid engines. Also, in our support fleet, the specification for grams per kilometre of engine emissions has consistently improved. There is also the successful ongoing Destination Green staff engagement campaign and awards,

Head Office Environment Champions and LU's Energy Saving Challenge.

We have assessed and evaluated the impacts of extreme weather and future climate change on our assets and services, referencing the 2009 United Kingdom Climate Projections (UKCP 09). We have focused on the predictions for Greater London rainfall and temperature in the 2020s, 2050s and 2080s. With today's extreme weather, we have a proactive planning approach in response to forecasts. We aim to run as many services as possible and provide accurate real-time information as a situation develops, and this has received positive feedback following the winter storms and rain of 2013/14.

**Objectives**

- We will minimise our energy use and therefore the carbon emissions of assets, buildings and vehicles
- We will use energy-efficient and low-carbon principles are embedded across all levels of the organisation
- Our energy will come from verifiable low-carbon or renewable energy sources
- We will minimise the risks to people, operations and assets from extreme weather and climate change

**Targets**

We will contribute towards achieving the Mayor's target of a 60 per cent reduction in CO<sub>2</sub> emissions by 2025 (against a 2013

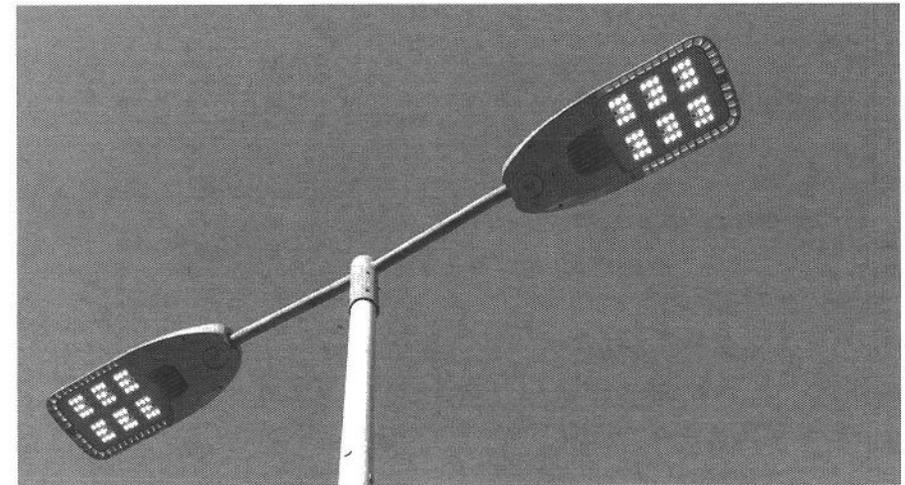
baseline) by aiming for a 40 per cent cut in TfL CO<sub>2</sub> emissions.

We will further reduce the amount of carbon per passenger journey by cutting emissions of CO<sub>2</sub> per passenger kilometre by 40 per cent by 2025 (against a 2013 baseline).\*

A 40 per cent reduction in overall CO<sub>2</sub> emissions is a stretching target as our planned increase in services and infrastructure will result in a further rise in energy use. To fully meet our targets requires the reduction in the carbon intensity of grid electricity as projected by the Government's Committee on Climate Change.

We will achieve these targets by:

- Diversifying energy supply to increase the amount of decentralised energy from local generators in London. Our aspiration is to achieve 20 per cent of annual demand from these sources by 2016 and 40 per cent by 2020
- Embedding energy efficiency and resilience in business processes, for example business cases, design and procurement
- Introducing a programme of energy efficiency improvements for our assets and buildings, using the GLA's RE:FIT methodology where appropriate
- Developing a culture of energy efficiency and low-carbon behaviour across the organisation through, for example, staff engagement initiatives and performance management



TfL is delivering energy efficient lighting at many tramstops, stations, tunnels and buildings

- Using low-carbon fuels and vehicles in our fleet, including the hybrid bus roll-out; biodiesel bus pilot; trialling and promoting electric vehicle and hydrogen fuel cell technology for buses, Dial-a-Ride vehicles and our support fleet; and working with Government agencies to achieve our goals
- Taking a risk-based approach to identifying and managing key weather and climate vulnerabilities. We will keep our identified risks as low as is reasonably practical and will review them on a regular basis

**Measuring progress**

We will measure and publicly report on our carbon emissions against an annual forecast. This will cover the emissions that we have control over, for instance arising from buses, Underground and Overground trains, DLR, Tramlink and head office buildings.

We will also report on weather and climate change resilience reviews and plans.

# Air quality

## Reducing polluting emissions and exposure to air pollution in London

We are a key partner in delivering the Mayor's Air Quality Strategy, through policy measures such as the Low Emission Zone, delivering sustainable transport options and promoting low-emission vehicles, walking, cycling and smarter travel choices.

We aim to reduce emissions to air from our bus fleet, the taxis and private hire vehicles we license and our support fleet. We also aim to lead by example, demonstrating good practice in the type of vehicles we use and how they are operated. Combustion of fuel results in emissions of pollutants into the air as particulate matter (PM) and oxides of nitrogen (NO<sub>x</sub>).

The Transport Emissions Action Plan sets out our continuing work to achieve air quality improvements from wider, private transport in the Capital. This includes plans to develop an Ultra Low Emission Zone in central London by 2020. The environmental performance related to this is outside the scope of this framework.

### Achievements

We are proud to have the cleanest bus fleet in the UK as a result of fitting diesel particulate filters (DPFs) to Euro II and III vehicles and introducing diesel-electric hybrid buses, including the New Routemaster. NO<sub>x</sub> emissions will be reduced further with the early replacement of approximately 900 Euro III vehicles with Euro VI models and retrofitting the remaining Euro III buses in the fleet with selective catalytic reduction equipment.

Similar efforts are being made to reduce emissions from other parts of our fleet. Trials

of ultra low-emission vehicles will continue in the support fleet and DPFs are being fitted to Woolwich Ferry vessels. We are also working with the taxi and private hire industry to encourage the introduction of ultra low-emission vehicles.

The Mayor has called on local authorities to introduce innovative measures to improve air quality through the Mayor's Air Quality Fund. This builds on lessons learnt from the Government-funded Clean Air Fund, which:

- Trialled dust suppressants
- Fitted DPFs on buses on routes through air quality priority areas
- Encouraged behaviour change through public campaigns and advice for drivers of taxis and private hire vehicles
- Researched the air quality benefits of green walls

We have reduced dust from our construction activities, for example, at the Tottenham Court Road and Victoria station upgrade projects, and cut vehicle air emissions associated with freight transport by developing detailed delivery and equipment removal plans.

### Objectives

- We will work towards zero pollutant emissions from our fleet vehicles
- We will include air quality requirements in policies, projects and contracts



■ Our electric bus on trial from Victoria to Waterloo

### Targets

We will seek to support the Mayor's air quality targets for London by delivering a 50 per cent reduction in NO<sub>x</sub> emissions from the bus fleet by 2020, against a 2013 baseline.

We will reduce PM emissions from the bus fleet by 25 per cent by 2020, against a 2013 baseline.

These targets are ambitious but will be achievable through a range of measures including:

- Delivering selective catalytic reduction to reduce NO<sub>x</sub> emissions from Euro III buses
- Introducing 1,700 hybrid buses by 2016
- Implementing a technology and fuel demonstration programme to reduce emissions from buses, including trialling hydrogen and electric buses

- Continuing to implement our support fleet environmental policy, working with the Office for Low Emission Vehicles to achieve air quality and carbon reduction goals

- Working in partnership with Government, the EU and other transport organisations and technical experts to continue trialling new technologies and fuels. Hydrogen buses are a small but important part of the fleet and the first electric buses began running in London 2014. Infrastructure development will continue to support these emerging technologies and trials of wireless induction charging is the next important step

- Specifying, through procurement and contracts, that our suppliers must meet emission requirements for their vehicle fleets

### Measuring progress

We will measure and report publicly on the 50 per cent reduction target for NO<sub>x</sub> and 25 per cent reduction target for PM emissions by 2020, against an annual forecast.

# Noise

## Effectively managing and controlling transport-related noise and vibration

Noise is an important part of determining quality of life in the Capital. Sound levels or vibration from transport, such as train and vehicle movements, construction works or public announcements, can affect those who work or live close to the transport system.

We want to ensure that noise disturbance is minimised wherever possible. As a result we make every effort to specify noise limits and good practice on construction sites, trains and vehicles that are at least as good as statutory standards. We also make sure public announcements at stations are limited to the minimum required.

We have to balance the need to deliver improvement projects quickly with an obligation to reduce noise nuisance, especially at night, to residential and business neighbours, in partnership with local planning authorities.

### Achievements

Construction activities are monitored carefully to ensure that agreed noise limits and operating hours are adhered to. We communicate plans for out-of-hours working to neighbours in advance.

We have recently seen a significant increase in construction works as part of our improvements, including for Crossrail and on major LU projects. This is in addition to our regular maintenance. While associated noise complaints often mirror the amount of construction work taking place, there has been a gradual decline in the number of noise complaints that we receive.

Much has been done to reduce noise from buses, trains, support fleet vehicles, rail and road surfaces, and we will continue to trial and use improved technology and materials. Measures have been implemented that help us minimise noise, especially during night-time engineering hours.

### Objectives

- We will reduce noise and vibration from our vehicles and rolling stock
- We will reduce noise and vibration from our transport infrastructure and operations
- We will reduce noise and vibration from our maintenance and improvement programmes
- We will develop a target for surfacing the TLRN with lower-noise materials

### Targets

- Reduce the number of noise-related complaints
- Respond to 100 per cent of noise and vibration complaints regarding rail services within 10 working days, and deal with 90 per cent of these within the target date
- Review the Section 61 (construction noise consenting) process and deliver improvements applicable to large, medium and small projects
- Ensure 90 per cent of buses in our fleet are at least two decibels quieter than the required legal limit by 2015

We will achieve these targets by:

- Continuing to test and use improved technology and materials, including targeted trials for solutions relevant to specific locations, with the aim of reducing noise impacts
- Ensuring effective communication with local residents and businesses potentially affected by noise or vibration from construction and maintenance activities
- Producing a regular summary of rail complaints by, for instance, service area
- Developing a tool showing areas with jointed track and a programme for replacement
- Completing the roll-out of quieter trains on all LU sub-surface lines by 2016

### Measuring progress

We will measure and report annually on progress in achieving our noise targets and the associated delivery plans.



■ Our new trains are quieter for customers and neighbours

# Materials and resources management

## Using resources (including water) wisely and minimising waste

We aim to ensure that we use resources responsibly, by minimising our consumption of natural resources and encouraging the reuse and recycling of materials. The amount of waste produced increases or decreases in direct relation to the volume of maintenance or construction activities carried out as we expand our transport services. We intend to minimise waste as much as possible and reach a position where 'unwanted' materials are no longer referred to as 'waste', but are considered a potential resource.

Some of our businesses have a good track record in recycling up to 99 per cent of waste materials, but we can do more by sharing good practice across the entire organisation. While the amount of unwanted materials produced depends on the nature of the work being carried out, opportunities for designing-out waste and reusing and recycling apply to all construction projects.

### Achievements

Our head offices achieve the Department for Environment, Food and Rural Affairs (Defra) good practice water consumption target of 6m<sup>3</sup> per full time equivalent (FTE) person per year. They also achieve recycling rates of 62 per cent (working towards a target of 75 per cent).

We have standards promoting the use of sustainable drainage. There are also growing numbers of water recycling systems for train, bus and coach depots and stations. Green roofs have been installed at key head offices, depots and stations to help capture rainfall.

We have worked to achieve excellent local reuse of waste on construction or maintenance projects. For example, some of the work on the Metropolitan line embankments achieved 100 per cent reuse of waste materials.

### Objectives

- We will continue to minimise generation of waste as far as possible
- For any waste still generated, we will develop a normalised target for reduction, for example, per project spend or passenger kilometre
- We will develop a target for reducing hazardous waste
- We will prioritise reuse of resources and maximise opportunities for recycling unavoidable waste, using innovation and new systems where practical
- We will optimise opportunities to recover energy from remaining waste
- We will continue to purchase reused materials or those with a high recycled content

### Targets

- We will reuse, recover and recycle 99 per cent of non-hazardous waste, with interim targets of 30 per cent for recovery by 2031, in line with The London Plan

- Our head offices will aim to achieve a shift from current Defra good practice performance of 6m<sup>3</sup> water consumption per FTE to Defra best practice of 4m<sup>3</sup> per FTE

We will achieve these targets by:

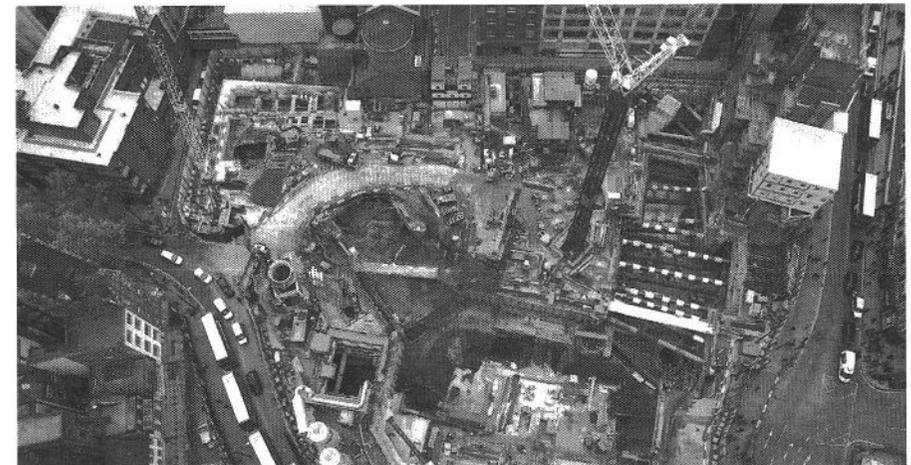
- Designing-out waste in construction and design
- Delivering a reduction programme for hazardous waste
- Continuing to invest in low-use and recycled water technologies
- Developing a system to quantify how much

we spend on having our waste treated, recycled and disposed of to help us target priorities for where to reduce waste

- Creating a waste exchange process for our organisation and contractors
- Requiring larger capital projects and programmes to achieve external sustainable building or infrastructure certification, equivalent to 'very good' or 'excellent' where possible

### Measuring progress

We will measure and report annually on progress made towards achieving our targets and key programme delivery.



■ Our construction site at Tottenham Court Road is recycling and reusing all of its waste

# Pollution prevention

Proactively managing activities to minimise and control pollution

Our activities require the use of materials and substances such as fuels, oils and solvents that could pose an environmental risk if not managed properly. Our HSEMS puts controls in place to prevent spills, leaks and incidents. There are opportunities to further prevent pollution through designing-out or minimising the use of harmful substances where possible, as well as good management practices.

## Achievements

We have assessed the risk of pollution and ensured controls and contingencies are built into local emergency plans. Our HSEMS, along with training for staff and contractors, helps to encourage good management practices, but there is more that could be done to improve some of our operating premises, and those of our main suppliers. Opportunities to 'design-out' pollution will be taken, where possible, for new premises or during refurbishment.

Audits are carried out to check that procedures are being followed at our buildings, construction sites and main suppliers' operational premises. We follow an incident reporting procedure to establish trends and inform the audit and remedial works programme.

## Objectives

- We will embed best practice to prevent pollution
- We will minimise the risk of pollution and ensure no pollution incidents occur as a result of our activities

## Targets

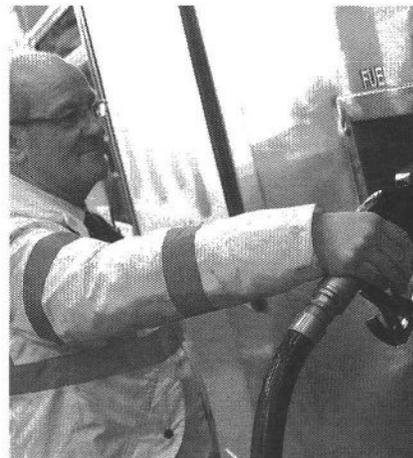
- Zero pollution incidents each year

We will achieve this target by:

- Annually assessing and reducing risk for our highest risk sites
- Improving processes for reporting and investigating environmental incidents

## Measuring progress

We will measure and report annually against our pollution prevention target and on progress with our delivery programmes.



■ We regularly deliver spill prevention training

# The built environment

Respecting, protecting and improving the built environment and enhancing the travel experience and wider quality of life that London offers

We are helping to achieve the London-wide aim of improving the built environment, or urban realm. This contributes to the quality of life in the Capital and helps to create a strong sense of place, for example at interchanges.

Through sustainable design and construction, we can reduce exposure to pollution and noise and help to prevent crime. We aim to lead the way in designing measures to manage rainwater run-off and make the city increasingly resilient to more frequent extreme weather events.

In addition, many of our buildings, stations and assets have a strong heritage that contributes to London's identity, that we have a responsibility to preserve.

## Achievements

Steps have been taken to enhance the pedestrian environment by removing clutter, recognising the needs of people with disabilities and improving the appearance of the urban realm. In addition to improving our own networks, we support work through the boroughs' Local Implementation Plans.

Huge efforts have been made to improve cycling infrastructure, stations and interchanges, which is helping to enhance London's reputation as a place to visit and do business. Working with other transport authorities and partners, we have achieved excellent design on schemes including Windrush Square in Brixton, Kingsland High Street in Hackney, the King's Cross terminal

and new Crossrail stations. Several projects have received honours, including Civil Engineering Environmental Quality Assessment awards and Building Research Establishment Environmental Assessment Method awards, in recognition of best practice.

We share experience and good practice with borough councils, housing associations and built environment professionals through guidance documents that make up the Streetscape toolkit and supporting Urban Design London to share best practice.

## Objectives

- We will develop a target for the number of schemes achieving an improvement in urban realm scores
- We will improve the built environment to support an integrated, safe and seamless travel experience
- We will protect and restore our heritage assets
- We will embed sustainable design and maintenance solutions to enhance development of the built environment
- We will apply a holistic approach to design governance across the organisation
- We are recognised as a leader in design standards for the built environment

# The natural environment

Respecting, protecting and enhancing the natural environment and its contribution to the quality of life

We will achieve these objectives by:

- Implementing a programme to update design and material guidance and, in 2014, we will publish:
  - Refreshed London cycling design standards
  - Refreshed Streetscape guidance for the TLRN
  - Guidance for the development of our stations and interchanges
  - Pedestrian Design Guidance
- Surveying, recording and understanding our assets and their heritage value, to identify opportunities for conservation and restoration

- Exploring and developing a method to measure improvements in the quality of the built environment starting in 2015
- Continuing to work with English Heritage, conservation officers and other interested stakeholders to share information and develop best practice
- Communicating the value of the built environment across our organisation

## Measuring progress

We will measure and report annually on progress against our built environment activities and delivery plans.

We have significant land holdings across London, particularly along track sides and the verges of the TLRN. These spaces provide vital habitat for flora and fauna as well as green links through the Capital. The natural environment is a key contributor to improving the quality of life in London.

In addition, adding 'green infrastructure' can provide ecosystem services including ecological benefits, capturing polluting particulate matter, providing shading and cooling and reducing the speed and nature of run-off water.

The pressures on the natural environment continue to increase as there is more competition for space, both on and off our networks. We are also seeing a rise in pests, diseases and weed species such as Japanese knotweed.

## Achievements

LU's Biodiversity Action Plan and the Green Estate Management Plan for the TLRN set out our plans to continue managing the natural environment responsibly, and to look for opportunities to enhance the value of our land as a habitat and resource to be enjoyed by residents and visitors.

We have robust processes in place to protect the natural environment and install green infrastructure whenever possible. These also help us to react quickly to threats, such as outbreaks of oak processionary moth caterpillars.

## Objectives

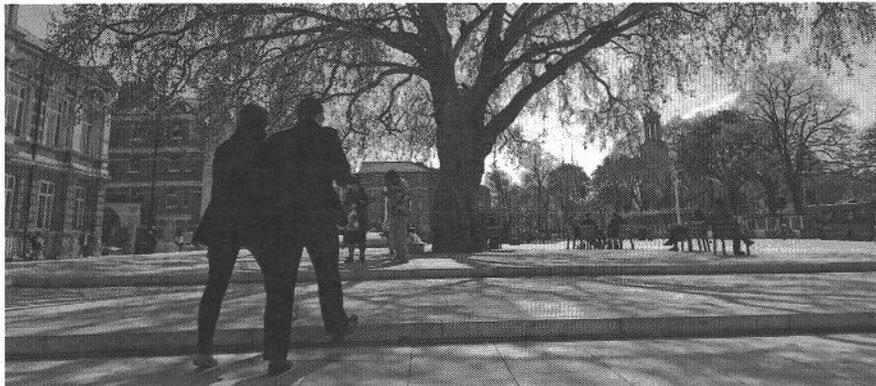
- We will protect, manage and enhance the natural environment within our land holding
- We will develop the habitat and biodiversity potential of the natural environment
- We will develop a valuation system to measure losses and gains, building on the experience we gained when working with the boroughs to place a value on street trees
- We will manage the natural environment to help alleviate the impacts of extreme weather and climate change

## Target

- We will measure and report on the percentage of our land holding with improved habitat and biodiversity quality

We will achieve this by:

- Publishing a refreshed Green Estate Management Plan for the TLRN
- Communicating the value of the natural environment across the organisation, including improving skills and competence relating to key biodiversity issues
- Developing a method to measure biodiversity losses and gains starting in 2015
- Surveying and recording the biodiversity value of our assets to identify priority areas for protection and enhancement as part of management plans



■ We deliver schemes to improve all aspects of the urban realm



■ The Emirates Air Line

- Developing and improving plans to inform future management and enhancement of the natural environment and to help reduce the impacts of extreme weather events and climate change. Starting in 2015, this will include:

- Biodiversity protection and enhancement
- Succession planting
- Control of pest and diseases
- Control of harmful weeds and invasive plants

- Continuing to work with Natural England, the Forestry Commission, the London Tree Officers Association, RSPB and other interested stakeholders to share information and develop best practice

**Measuring progress**

We will measure and report annually on progress against our objectives and target for improved habitat and biodiversity quality.

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**Appendix 3: Environmental Planned General Inspection Template**



## F5456 A2 LU COO Asset – Stations EPGI Checklist

Asset Area:		Location Inspected:	
EPGI conducted by:		Date:	
Contact Number:		Conducted: E/H, T/H, Both	
Accountable DER:		PGI No.	EPGI/APS/ / - . (e.g. PGI/APS/SYS/07-001)
Contact Number:			
DLO/Contractor:		SPC Name:	
Sub-Contractor:		Supplier Contact No.	

**NOTE:** Please obtain a copy of the PiCER and/or Evacuation Register, from the Customer Service Supervisor/Manager, to show all the people involved with inspected works Site and attach to this PGI Form when complete.

Summary of Works: (Planned Works/Maintenance/Fault/Inspection/Survey/Project/Minor Works etc)

- Refer to QUENSH for specific guidance to on-site requirements.
- Refer to Site File for site specific risk assessments and method statements.

**Instructions:**

**YES:** if satisfactory or assessment complete – **NO:** if unsatisfactory and list on sub-standards condition form – **N/A:** if not applicable.

**Note:** If the space provided is insufficient to record document reference numbers, use the reverse of this page to record the details.

QUENSH Clause/ Legislation	QUESTION	YES(Y) NO(N) or N/A	IF NO ENTER HAZARD CODE	REFERENCE NUMBERS, DATES DUE FOR RENEWAL, COMMENTS
<b>Site Preparation</b>				
EPA 1990 PtIII	Is waste generated on site taken to transfer station or back to work compound?			
	Is waste/litter segregated, labelled (identified) to avoid pests & odour?			
	Is waste stored away from the nearest sensitive receptor?			
	Are compound are blank transfer/consignment notes available?			
	Are spoils re-used on site where ever possible to avoid land fill disposal?			
WFD Directive 2008	Does the Site File contain the waste carriers Licence for removing waste from site?			
HASAWA 1974	Has SPC notified his employers of any changes to MS and works scope that may be required?			
SWMP 2008	Is the site waste management plan or arrangement available (if CDM notifiable project is F10 in site file)?			
WEEE 2013	Does the site waste management plan include the arrangement for the removal of liquid waste, WEEE & waste exemption (for projects >£250k)?			
S1552 para 32	Is the site being well maintained free from clutter, spills, litter and settled dust?			
<b>Nuisance (inc: dust, odours, noise, vibration, smoke, other emissions)</b>				
EPA 1990 Pts I+III & CNWR 2005 CVWR 2005	Are environmental nuisance's being controlled, for example: <ul style="list-style-type: none"> <li>• Dust suppression/damping down</li> <li>• Noise screening/silencing</li> <li>• Vibration control</li> <li>• Position and intensity of lighting</li> <li>• Plant emissions (inc odour)</li> </ul>			
CNWR 2005	Is noise being controlled in accordance with the best practical means?			

QUENSH Clause/ Legislation	QUESTION	YES(Y) NO(N) or N/A	IF NO ENTER HAZARD CODE	REFERENCE NUMBERS, DATES DUE FOR RENEWAL, COMMENTS
CNWR 2005 CoPA 1974	Do noise levels fall within any agreed section 61 consents? <b>NOTE:</b> Have all personnel or contractors been informed on the site that a section 61 CoPA has been issued and the conditions that must be maintained?			
HA 1980	Are pavements, roadways free from obstruction by unnecessary site activities (vehicles, materials etc)?			
ASBA 2003	Could activities be re-planned using best practical means to reduce negative environmental impacts?			
<b>Hazardous Substances</b>				
HASAWA 1974 applied to EHS	Are potentially hazardous substances correctly identified & labelled?			
	Does the method statement provide instruction on the correct use, storage and emergency procedures are in place in case of spillages and disposal etc			
	Are employees aware of the risks associated with the hazardous substance in use also in case of emergency or spillage? <b>NOTE:</b> Have staff received environmental training and are able to identify asbestos, Japanese knot weed etc.			
COSHH 2002	Are all substances used on site are accompanied with a COSHH data sheet? • Please reference the document numbers			
	Are staffs aware of the COSHH regulations?			
	Are hazardous liquids bunded? Bunds must hold <110% capacity of the containers when stored or in use.			
	Have hazardous liquids & gases been identified & maintained by competent individual			
S1552 44.3	Are hazardous materials being transported in accordance with the MS and or MOM licence?			
CAWR 2002	Has an asbestos survey been conducted?			
	Are staff aware of the procedure if asbestos is discovered?			
<b>Atmospheric Pollution</b>				
PUWER 1998	Are equipment/vehicles properly maintained to prevent the emissions to the atmosphere? (dust, odours, noise, vibration, smoke, other emissions)			
<b>Pollution Of Water Systems &amp; Land Contamination</b>				
WRA Act Amended 2009	Are fluids discharges, ingress and waterways being adequately managed?			
	Are receptors (e.g. drains) been identified and protected in the event of emergency			
	Are spill kits available and ready for use			
EA 1995	Are generators and compressors being used with drip trays and has the fuel feed cable from the fuel container armoured or protected?			
	Is there evidence of unreported incidents, including spillages & leaks?			
<b>Natural Resources &amp; Energy Consumption</b>				
S1552	Are water supplies, gas and electrical appliances turned off when not in use? <b>NOTE:</b> Including temporary site accommodation in disused station areas and portable cabins, etc.			
	Are new materials stored in a manner that avoids damage?			

QUENSH Clause/ Legislation	QUESTION	YES(Y) NO(N) or N/A	IF NO ENTER HAZARD CODE	REFERENCE NUMBERS, DATES DUE FOR RENEWAL, COMMENTS
S1552	Are vehicles, site plant and machinery turned off or isolated when not in use?			
	Is waste minimised by not over-producing site manufactured products e.g. cement, plaster etc?			
<b>Harm To Wildlife, Landscape &amp; Heritage</b>				
S1552	Are the local flora and fauna protected during access/egress to the site			
	Have protected species or breeding birds, mammals been considered			
TCPA 1990	If the work is carried out on a listed building, has English Heritage or other LU been consulted and approved (including the fixing of temp fencing, bunting, hoarding, lighting and signs)?			
	Does the site have local authority consents for any obstruction of pavement, roadway including parking bays and car parks?			
	Does the site have enough security to prevent theft, vandalism etc?			
<b>End Of Inspection Criteria – Please Agree Findings, Then Sign And Date The EPGI Form</b>				
Name of Inspector: (Print Name)		Contact number:		
Signature of Inspector:		Date:		
SPC/Site Manager: (Print Name)		Contact number:		
Signature of SPC/Site Manager:		Date:		

## Hazard Codes

Classification	Description	Actions and Timescales
A1	The identified condition(s) should be rectified within 24 hours or work must cease immediately and not restart until appropriate controls have been put in place to reduce the hazard classification to at least A2.	Contravention of a legal requirement and/or LU standards and/or practice likely to cause, death, permanent disability, loss of body part, extensive loss / impact on structure, equipment, materials, major pollution, destruction of local eco-systems, habitat or other environmental impact.
A2	The identified condition(s) should be rectified as soon as practicable in less than 14 days or as directed by the inspecting authority.	Contravention of Health and Safety and Environmental legal requirements and/or LU regulations, standards, procedures, industry standard good practices or failure to adequately contain and store material, fuels or waste.
B	The identified condition(s) should be rectified as soon as practicable in less than 28 days.	A condition or practice likely to cause injury, illness, pollution, destruction of local eco- systems, habitat, or extensive loss / damage to equipment, materials and structures. Less severe or disruptive than Class A1, or A2
C	The identified condition(s) should be rectified as soon as practicable in less than 3 months.	A condition or practice likely to cause injury, illness, pollution, destruction of local eco- systems, habitat, or extensive loss / damage to equipment, materials and structures. Less severe or disruptive than Class B.
GP	None required	Good Practice – this information should be shared with other areas and contractors to promote learning and continuous improvement.
Obs	None required	Observation – this finding is not a concern, but other areas maybe showing higher levels of compliance. You should seek to improve your methods.

## Abbreviations

QUENSH Clause/Legislation abbreviations	
Abbreviation	Legislation
ASBA	Anti-social Behaviour Act 2003
CNWR	Control of Noise at Work Regulations 2005
CoPA	Control of Pollution Act 1974
COSHH	Control of Substances Hazardous to Health 2002 (COSHH)
CVWR	Control of Vibration at Work Regulations 2005
EA	Environment Act 1995
EPA 1990 PtII	Environmental Protection Act 1990 Part II
HA	Highways Act 1980
HASAWA	The Health and Safety at Work etc Act 1974
HASAWA applied to EHS	The Health and Safety at Work etc. Act 1974 (application to Environmentally Hazardous Substances) (Amendment) Regulations 2007
PUWER	Provision and Use of Work Equipment Regulations 1998
SWMP	Site Waste Management Plan Regulations (2008)
TCPA 1990	Town and Country Planning Act 1990
WEEE	The Waste Electrical and Electronic Equipment Regulations 2013
WFD 2008	Waste Framework Directive 2008/98/EC
WRA Act Amended 2009	The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009

**Appendix 4**

F5410 A3

## Site Noise and Vibration Evaluation and Control

### 1.1 Purpose

The purpose of this form is to identify:

1. What controls are needed to reduce noise and vibration from your worksite
2. If your work needs A Section 61 Consent
3. If your work needs a letter drop and liaison with local residents or stakeholders

### 1.2 Guidance

**This form must be completed when:**

- 1) Local environmental risk assessment identifies noise and vibration as a issue.
- 2) TfL Pathway Project Management Framework Applicability Questionnaire identifies construction is taking place.

The Environmental Management Plan must be updated accordingly once this form has been completed. Risks must be transferred to the Risk Register/ARM / as appropriate

This form must be approved by the Project Manager (or equivalent in AP) and reviewed by an HSE Manager or Environment Manager. Review helps ensure effective internal communications in advance of works.

Before completing this form please read the Management of Site Noise from Maintenance and Construction Work Activities ([G1374](#)) document. G1374 contains a list of Best Practicable Means to control noise. Also in Appendix 1 of G1374 an events timeline is provided detailing the main actions to complete when dealing with noisy work.

### 1.3 Site Noise and Vibration Evaluation and Control

**Note:** Best Practicable Means to control noise and vibration needs to be applied at all times, even if a Section 61 is not needed.

#### Part 1: Works details

1	Location of works	
2	Job reference number	
3	Job title	
4	Start date on site (including enabling works)	
5	End date	

Printed copies of this document are uncontrolled.

Page 1 of 3



6	Hours of work	
7	Scope of work	
8	Brief description of the work activities (including enabling works).	
9	Are other works, including 3rd party work, taking place near to your work site?	

Part 2: Site noise and vibration evaluation				
	Question	Yes	No	Notes
1	Are there residential properties / schools / places of worship, or other noise or vibration sensitive premises nearby?			Please include a site plan and photos showing the location of the work and the nearest receptors. State approximate distances to receptors.
2	If the site access is separate from the worksite - are there residential properties / schools / places of worship, or other noise or vibration sensitive premises near the access point?			Please include a site plan and photos showing the location of the work and the nearest receptors. State approximate distances to receptors. Will works be carried out in multiple locations?
3	If your work is near a station according to the <u>Noise Sensitivity Register</u> / <u>Web GIS</u> is it a red or amber station?			
4	Have there been complaints before in the area where you are working?			You can find out from the Community Relations Team.
5	Will works take place at unsocial hours?*			If yes, state duration of such works? If yes, explain why this work cannot be done in normal daytime working hours
6	Will noisy equipment be used? For example: Diesel generator Angle grinder Chainsaw Breaker Digger Piling rig			Please provide plant dB levels, if available.
7	Will there be materials or waste moved in and out of the site?			Provide details



8	Will materials be loaded and unloaded at street level near residents			Provide details
9	Are there designated parking places and welfare facilities?			How many employees on site? How many vehicles on site? Where will staff congregate?
10	Will disruptive works continue for 3 or more nights?			
11	Will disruptive works continue for 10 or more days?			
12	Will noise or vibration be generated frequently or continuously? i.e. for more than half the shift			
13	Will people hear or feel noise and vibration from outside the worksite?			

\*Unsocial hours are from 1800 to 0800 weekdays, 1300 Saturday to 0800 Monday morning and throughout Bank Holidays.

**If yes is answered to any questions above then it is likely a Section 61 consent will be needed. Consult your HSE Manager or Environment team**

Does this site need a Section 61 consent?	Yes	No	Maybe
Reason for decision			
Action to be taken if the answer is Yes or Maybe			
Does this site need a letter drop or some other public liaison? A letter drop is needed as part of a Section 61. However if S61 is not needed but work is still noisy a letter drop may still be required.	Yes	No	Maybe
Reason for decision			
Action to be taken if the answer is Yes or Maybe			

Best Practicable Means will always apply even if a Section 61 is not needed.

	Name & Role	Date
Completed by		
Approved by		
Reviewed by		



**Appendix 5**



## Waste Management Plan (WMP) (Stages 3-6)

### Purpose

To:

- ensure continuous compliance with legal duty of care obligations.
- improve how waste, and materials, is managed throughout the project and asset lifecycle; reducing whole life cost.
- meet TfL objectives and targets to reduce the amount of waste generated by projects and to reuse, recover and recycle 99% of non-hazardous materials by 2031, in line with the London Plan.

### Applicability

This product must be completed for all programmes, projects, and delivery portfolios that produce waste.

#### **Works with an Estimated Final Cost (EFC) greater than or equal to £250,000:**

Must use SMARTWaste to document their WMP.

Work with an overall EFC greater than £250,000 but has multiple sites with a value less than £250,000 each; a high level programme, project/portfolio waste management plan, covering the scope of all works, rather than each individual site/item of work, must be developed.

Designers must capture decisions taken to minimise resource use and design out waste in a Design Waste Management Plan (DWMP). The DWMP must be passed onto the principal contractor (TfL or supplier) in an accessible manner, using template below.

#### **Works with an EFC less than £250,000:**

A separate SMARTWaste WMP is not required. All waste and materials management arrangements can be recorded in the design plans and construction phase Environmental Management Plan (EMP) for the works.

All TfL Facilities projects must use their template below to record and submit waste data.

### Templates

- [Design Waste Management Plan](#)
- [SMARTWaste](#)

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Issue No.: A5

Issue date: December 2015

Review date: December 2018



# Waste Management Plan (WMP) (Stages 3-6)

Number PD0052  
Issue no: A5  
Issue date: September 2014

- TfL Facilities: Small Projects Waste Proforma
- Contractors are encouraged to use SMARTWaste template, for which a TfL project licence can be freely assigned. They can use their own waste management template as long as it delivers compliance and improved waste and materials management performance for both TfL and the contractor. The contractor's template must be based on best practice templates, e.g. the Waste and Resource Action Programme (WRAP) WMP template, and WRAP Netwaste Tool or BRE SMARTWaste tool.

## Contents

- Content is defined by the templates.

## Quality criteria

- Contractors, including designers, must be made aware of TfL's objectives and targets relating to waste and materials management during the procurement process. Contractors must be made aware that appropriate waste management targets will be set in the final contract to ensure compliance.
- A DWMP and WMP must be produced before works start on site.
- All design decision taken to reduce waste must be captured within the DWMP.
- The client, designer and principal contractor must sign the document before works commence on site to confirm quality of the document and declare that waste will be managed in line with their legal duty of care obligations.
- The document must be updated to reflect progress of the works (minimum every 6 months) for projects over £250,000 and for all projects on completion.
- The principal contractor must complete the document and return it once the project is complete and be involved with Lesson Learnt, where appropriate.
- Waste management data must be reported on a periodic basis, as instructed by the TfL client.

### Further reference:

- WRAP's Designing out Waste: a design team guide for Civil Engineering
- WRAP's Designing out Waste: a design team guide for Buildings
- WRAP's Netwaste Tool
- Guidance is also contained in the templates above.

## Document Management

WMP must be filed in accordance with the project filing structure described in the Planning and Controls handbook.

# Waste Management Plan (WMP) (Stages 3-6)

Number PD0052  
Issue no: A5  
Issue date: September 2014

## Roles and responsibilities

Responsible (Responsible for producing all or part of quality product)	Accountable (Accountable for ensuring timely delivery of quality product)	Consult (Must be consulted when product is being produced)	Inform (A copy of the signed-off product must be sent to)
Project Manager	Project Manager	Project Engineer  Designer  LU/LR/Corporate: HSE Manager or Environment Manager  ST: Environment Manager	

## Feedback

If you have any queries, feedback or improvement suggestions about this Product Description then please contact [tflppm@tfl.gov.uk](mailto:tflppm@tfl.gov.uk).

## Document history

Revision	Date	Reason for Change	Author
A2	08/04/2013	Issued for use	IPPM
A3	05/12/2013	Amendments to product description and new template included	TfL HSE SIG
A4	03/09/2014	Amendments to include TfL Facilities works and new template included	TfL HSE SIG
A5	03/12/2015	DRACCT 03483	TfL HSE SIG

## SCHEDULE 9: DEED OF NOVATION

THIS DEED is made [●] day of [●] 20[●]

BETWEEN:

**TRANSPORT FOR LONDON** or **TfL**, a statutory corporation established under the Greater London Authority Act 1999 of 55 Broadway, London SW1H 0BD (the "Company" which expression shall include its successors, transferees and assignees); and

[●] a company registered in [England and Wales] under number [●] and having its registered office at [●] (the "Supplier"); and

[●] a company registered in [England and Wales] under number [●] and having its registered office at [●] (the "New Company").

WHEREAS:

- (A) The Company has an agreement dated [●] and referenced [insert contract number] with the Supplier for the provision of [describe in brief the scope of work/services] (the "Contract").
- (B) The Company wishes to transfer [part of] its benefit and burden under the Contract to the New Company.
- (C) The Supplier and the New Company have agreed to such transfer upon the terms and conditions of this Deed.

IT IS AGREED AS FOLLOWS:

- 1. In this Deed:
  - 1.1 "Transfer Date" means [●].
- 2. With effect from the Transfer Date:
  - 2.1 the New Company undertakes to perform the obligations of the Company under the Contract and be bound by its terms in every way as if the New Company is and had been named at all times as a Party to the Contract in lieu of the Company;
  - 2.2 the Supplier releases and discharges the Company from all demands and claims whatsoever in respect of the Contract and accepts the liability of the New Company in relation to the Contract in lieu of the liability of the Company and agrees to be bound by the terms of the Contract in every way as if the New Company were and had been a Party to the Contract at all times in lieu of the Company;
  - 2.3 for the avoidance of doubt, it is hereby expressly agreed that:
    - (A) any and all rights, claims, counter-claims, demands and other remedies of the Supplier against the Company accrued under or in connection with the Contract prior to the date hereof shall be exercisable and enforceable by the Supplier against the New Company; and

(B) any and all rights, claims, counter-claims, demands and other remedies of the Company against the Supplier accrued under or in connection with the Contract prior to the date hereof shall be exercisable by the New Company against the Supplier.

2.4 the Company transfers its rights and obligations under the Contract to the New Company.

3. A person who is not a Party to this Deed may not enforce any of its terms by virtue of the Contracts (Rights of Third Parties) Act 1999.

Executed as a deed by the Parties and delivered on the date of this Deed

Executed as a deed by affixing the Common Seal of )

Transport for London )

in the presence of: )

.....

[Authorised Signatory]

Executed as a Deed by [SUPPLIER] )

acting by ).....

) Authorised Signatory

and ).....

) Authorised Signatory

Executed as a Deed by [NEW COMPANY] )

acting by ).....

) Authorised Signatory

and ).....

) Authorised Signatory

**SCHEDULE 10: FORM OF PARENT COMPANY GUARANTEE AND PERFORMANCE  
BOND**

THIS GUARANTEE is made the \_\_\_\_\_ day of \_\_\_\_\_ 201[●]

**BETWEEN:**

- (1) [●] a company registered in England and Wales under number [●] and having its registered office at [•] (the "Guarantor");
- (2) [●] a company registered in England and Wales under number [●] and having its registered office at Windsor House, 42-50 Victoria Street, London SW1H 0TL (the "Company" which expression shall include its successors in title and assigns); and
- (3) [●] a company registered in England and Wales under number [●] and having its registered office at [•] (the "Supplier").

**WHEREAS:**

- (A) This Guarantee is supplemental to a contract (the "Contract") for the carrying out of [●] at [●] made between (1) the Company and (2) the Supplier.
- (B) The Guarantor has agreed to guarantee to the Company the due and punctual performance of the Contract by the Supplier in the manner hereinafter appearing.
- (C) The Supplier is a party to this Guarantee in order to confirm its request that the Guarantor provide this Guarantee on the terms set out herein.

**NOW IT IS HEREBY AGREED** as follows:

1. The Guarantor unconditionally guarantees to the Company the proper and punctual performance and observance by the Supplier of all its obligations, warranties, duties, undertakings and responsibilities under the Contract and shall forthwith make good any default thereunder on the part of the Supplier and the Guarantor shall pay or be responsible for the payment by the Supplier to the Company of all sums of money, liabilities, awards, losses, damages, costs, charges and expenses that may be or become due and payable under or arising out of the Contract in accordance with its terms or otherwise by reason or in consequence of any such default on the part of the Supplier.
2. This Guarantee shall be a continuing guarantee and indemnity and accordingly shall remain in full force and effect until all obligations, warranties, duties and undertakings now or hereafter to be carried out or performed or observed by the Supplier under or arising out of the Contract have been duly and completely performed and observed in full.
3. The Guarantee is in addition to and not in substitution for any other security or warranty which the Company may at any time hold for the performance of any obligations, warranties, duties and undertakings under the Contract and may be enforced by the Company without first taking any proceedings or exhausting any right or remedy against the Supplier or any other person or taking any action to enforce any other security, bond or guarantee.

4. The Guarantor shall be under no greater obligation or greater liability under this Guarantee than it would have been under the Contract if it had been named as the Supplier in the Contract.
5. The obligations and liabilities hereunder shall remain in full force and effect and shall not be affected, lessened, impaired or discharged by:
  - (A) any alteration or variation to the terms of the Contract;
  - (B) any alteration in the extent or nature or sequence or method or timing or scope of the works, services or supplies to be carried out under the Contract;
  - (C) any extension of time being given to the Supplier or any other indulgence or concession to the Supplier or any forbearance, forgiveness or any other thing done, omitted or neglected to be done under the Contract;
  - (D) any other bond, security or guarantee now or hereafter held for all or any part of the obligations of the Supplier under the Contract;
  - (E) the release, modification, exchange or waiver of any such bond, security or guarantee;
  - (F) any amalgamation or reconstruction or dissolution including liquidation of the Supplier;
  - (G) the making of a winding up order, the appointment of a provisional liquidator, the passing of a resolution for winding up, liquidation, administration, receivership or insolvency of the Supplier;
  - (H) any legal limitation, disability or incapacity relating to the Supplier (whether or not known to the Guarantor);
  - (I) any invalidity in, irregularity affecting or unenforceability of the obligations of the Supplier under the Contract;
  - (J) the termination of the Contract; or
  - (K) anything the Company or the Supplier may do or omit or neglect to do including, but without limitation, the assertion of or failure or delay to assert any right or remedy of the Company or the pursuit of any right or remedy by the Company.
6. Until all amounts which may be or become payable and all liabilities, obligations, warranties, duties and undertakings in respect of the Supplier's obligations have been irrevocably paid, performed or discharged in full, the Guarantor shall not, after a claim has been made or by virtue of any payment, performance or discharge by it under this Guarantee:
  - (A) be subrogated to any rights, security or moneys held, received or receivable by the Company or be entitled to any right of contribution or indemnity in respect of any payment made or moneys received on account of the Guarantor's liability under this Guarantee;

- (B) claim, rank, prove or vote as a creditor of the Supplier or its estate in competition with the Company unless the Company so directs; or
  - (C) receive, claim or have the benefit of any payment distribution or security from or on account of the Supplier, or exercise any right of set-off against the Supplier unless the Company so directs.
7. This Guarantee is irrevocable.
8. The benefit of this Guarantee may be assigned by the Company at any time to any assignee of the benefit of the whole of the Contract. No further or other assignments shall be permitted.
9. The Guarantor:
- (A) gives the guarantee contained in this Guarantee as principal obligor and not merely as surety;
  - (B) agrees to indemnify the Company on written demand against any loss or liability suffered by it if any provision set out in the Contract guaranteed by the Guarantor becomes unenforceable, invalid or illegal, and
  - (C) waives any right it may have of first requiring the Company to proceed against, or enforce any other rights or security or claim payment from, any person before claiming from the Guarantor under this Guarantee.
10. Until all amounts which may be or become payable in respect of the Supplier's obligations have been irrevocably paid in full by the Guarantor, the Company may:
- (A) refrain from applying or enforcing any other moneys, security or rights held or received by the Company in respect of those amounts, or apply and enforce the same in such manner and order as it sees fit (whether against those amounts or otherwise) and the Guarantor shall not be entitled to the benefit of the same; and
  - (B) hold in a suspense account any moneys received from the Supplier on account of these Supplier's obligations or on account of the Guarantor's liability under this Guarantee.
11. The Company is entitled to make any number of demands under this Guarantee.
12. The invalidity, illegality or unenforceability in whole of or in part of any provisions of this Guarantee shall not affect the validity, legality and enforceability of the remaining part or provisions of this Guarantee.
13. This Guarantee may be executed in any number of counterparts each of which shall be an original and all of such counterparts taken together shall be deemed to constitute one and the same instrument.
14. No person other than the Company and its subsidiaries (as defined in section 1159 of the Companies Act 2006) shall have any right to claim or remedy under or pursuant to this Guarantee and the provisions of the Contracts (Rights of Third Parties) Act 1999 are hereby excluded.

15. This Guarantee, executed and delivered as a deed, shall be governed by and interpreted according to the laws of England and the Courts of England shall have exclusive jurisdiction save that the Company shall have the right to bring proceedings in the courts of any other jurisdiction in which any of the Guarantor's assets may be situated.

16. [For non-UK resident Guarantors only:

For the purposes of this Guarantee the Guarantor hereby appoints [•] of [•] [to be a London address] to accept service of process on its behalf, and service on the said [•] at the said address shall be deemed to be good service on the Guarantor; and the Guarantor hereby irrevocably agrees not to revoke or terminate such appointment).]

Executed as a deed by the Parties and delivered on the date of this Guarantee

Executed as a Deed by [GUARANTOR] )  
acting by ).....  
) Authorised Signatory  
and ).....  
) Authorised Signatory

Executed as a deed by affixing the Common Seal of )  
[COMPANY] )  
in the presence of:- )

.....  
[Authorised Signatory]

Executed as a Deed by [SUPPLIER] )  
acting by ).....  
) Authorised Signatory  
and ).....  
) Authorised Signatory

## SCHEDULE 11: FORM OF ON DEMAND PERFORMANCE BOND WITH APPENDIX 1

### BOND

(Letterhead of Guarantor)

To: [Company name] (its successors in title and assigns)

### Contract Bond No. [ • ]

1. Whereas our clients [ • ] (the "Supplier") have entered into a contract with you dated [ • ] (the "Contract") in respect of [ • ], we [ • ] (the "Guarantor", which term shall include our successors in title and assigns) hereby irrevocably undertake as a primary obligation upon first demand in writing made by you upon us from time to time or at any time to pay to you on each occasion the sum demanded by you within five (5) banking days upon service of your demand.

### PROVIDED THAT:

1. This Bond shall come into force on the date hereof.
2. Any demand hereunder shall be substantially in the form of Appendix 1 (Form of Demand from the Company to the Guarantor) to this Bond, and as between you and us the facts set out in that demand shall be: (a) deemed to be true and (b) accepted by us as conclusive evidence for the purposes of this Bond that the amount claimed in the demand is due and payable to you hereunder, it being our intention that the event upon which payment must be made hereunder is the service of your demand without any rights on our part to raise any objections, irrespective of the validity or the effectiveness of the Contract and the obligations arising thereunder and irrespective of the underlying facts or their significance under the Contract.
3. All sums payable under this Bond shall be paid in pounds sterling to such bank account as may be specified in your demand in immediately available funds, free of any restriction or condition and free and clear of and without any deduction or withholding whether for or on account of tax, by way of set-off, or otherwise, except to the extent required by law.
4. For the purpose of this paragraph 4, the expression "Expiry Date" means [•]. Our liability hereunder shall be limited as follows:
  - (A) we shall have no liability in respect of any demand received after the Expiry Date; and
  - (B) in respect of a demand or demands received on or before the Expiry Date, our liability shall not exceed the aggregate sum of £ [Amount of Bond to be Confirmed].
5. Our obligations hereunder shall remain in full force and effect and shall not in any way be affected, reduced or discharged by:
  - (A) any alteration to the terms of the Contract made by agreement between you and the Supplier; and/or

- (B) any defence, counterclaim, set-off or other deduction available to the Supplier under the Contract; and/or
  - (C) any alteration in the extent or nature or sequence or method or timing of the works/services to be carried out under the Contract; and/or
  - (D) any time being given to the Supplier or any other indulgence or concession to the Supplier or any forbearance, forgiveness or any other thing done, omitted or neglected to be done under the Contract; and/or
  - (E) any other bond, security or guarantee now or hereafter held by you for all or any part of the obligations of the Supplier under the Contract; and/or
  - (F) the release or waiver of any such other bond, security or guarantee; and/or
  - (G) any amalgamation or reconstruction or dissolution including liquidation or change in control or constitution of the Supplier; and/or
  - (H) the termination of the Contract; and/or
  - (I) any other event which might operate to discharge a guarantor at law or in equity.
6. Terms defined in the Contract and not otherwise defined herein shall have the same meaning in this Bond unless inconsistent with the context.
  7. This Bond shall be governed by, and interpreted according to, the laws of England and the Courts of England shall have exclusive jurisdiction in relation to any claim, dispute or difference concerning this Bond and any matter arising from it save that you shall have the right to bring proceedings in the Courts of any other jurisdiction in which any of our assets may be situated.
  8. This Bond may be assigned or transferred without our prior consent to any member of the TfL Group. Any other assignment or transfer of this Bond by either Party shall require the consent of the other Party, such consent not to be unreasonably withheld or delayed.
  9. This Bond may not be amended, varied or supplemented in any manner whatsoever without your prior written consent, other than in accordance with its express terms.
  10. Each of the provisions of this Bond is severable and distinct from the others, and if at any time any such provision is or becomes ineffective, inoperable, invalid or unenforceable it shall be severed and deemed to be deleted from this Bond, and in such event the remaining provisions of this Bond shall continue to have full force and effect.
  11. All bank charges and other fees payable in relation to or in connection with this Bond are for the account of the Supplier and you shall have no liability or responsibility therefor.
  12. Except to the extent it is inconsistent with the express terms of this Bond, this Bond is subject to the ICC Uniform Rules for Demand Guarantees, 2010 revision, ICC Publication No. 758.

Executed as a deed by the Parties and delivered on the date of this Bond.

Executed as a Deed by [GUARANTOR] )  
acting by ).....  
) Authorised Signatory  
and ).....  
) Authorised Signatory

Executed as a deed by affixing the Common Seal of )  
[COMPANY] )  
in the presence of:- )

.....  
[Authorised Signatory]

## APPENDIX 1: FORM OF DEMAND FROM THE COMPANY TO THE GUARANTOR

Dear Sirs

**[Contract Title]**

**Contract No: [●]** (the "Contract")

We refer to the Bond given by you to us dated [●].

An event has occurred of the type described in Clause [●] of the Contract.

We hereby demand payment from you of the sum of £[●] under the Bond. Please make payment by CHAPS made payable to [Company name / bank account details].

Yours faithfully

.....  
[Company name]  
55 Broadway  
London  
SW1H 0BD

## SCHEDULE 12: FORM OF COLLATERAL WARRANTY

THIS AGREEMENT is made the \_\_\_\_\_ day of \_\_\_\_\_ 201[●]

### BETWEEN: -

- (1) **TRANSPORT FOR LONDON** or **TfL**, a statutory corporation established under the Greater London Authority Act 1999 of 55 Broadway, London SW1H 0BD (the "Company" which expression shall include its successors, transferees and assignees);
- (2) [●] a company registered in England and Wales under number: [●] and having its registered office at [●] (the "Sub-Contractor"); and
- (3) [●] a company registered in England and Wales under number: [●] and having its registered office at [●] (the "Supplier").

### WHEREAS:-

- (A) The Company has entered into a contract with the Supplier (the "Main Contract") pursuant to which the Supplier is to undertake and complete the following services: [●] (the "Services").
- (B) The Sub-Contractor has submitted a tender to the Supplier for the carrying out and completion of certain parts (the "Sub-Contract Services") of the Services referred to above as more particularly described in the tender.

**NOW IN CONSIDERATION** of the payment of £1 (one pound) by the Company to the Sub-Contractor (receipt of which the Sub-Contractor hereby acknowledges) IT IS HEREBY AGREED as follows:

1. The Sub-Contractor warrants to the Company that:
  - (A) the Sub-Contract Services have been and will be carried out with the skill and care to be expected of appropriately qualified and experienced professional contractors with experience in carrying out works or services of a similar type, nature and complexity to the Sub-Contract Services;
  - (B) reasonable skill and care has been and will continue to be exercised in connection with:
    - (1) the design of any goods, works or services to the extent that the Sub-Contractor has or will be responsible for such design;
    - (2) the selection of all goods and materials comprised in the Sub-Contract Services (in so far as such goods and materials have been or will be selected by the Sub-Contractor);
    - (3) the satisfaction of any performance specification or requirement in so far as the same are included or referred to in the contract between the Supplier and the Sub-Contractor in relation to the Sub-Contract Services (the "Sub-Contract");

- (4) the execution and completion of the Sub-Contract Services;
  - (5) the Sub-Contract Services will, on completion of the Main Contract, comply with all Applicable Laws and Standards (as such capitalised terms are defined in the Main Contract);
- (C) the Sub-Contract Services will be reasonably fit for the purposes for which they are intended (awareness of which purposes the Sub-Contractor hereby acknowledges) and in particular but without limitation will be so fit for the period and with a rate of deterioration reasonably to be expected of high quality, reliable, well designed and engineered goods, materials and construction; and
- (D) it has the right to grant to the Company all licences (including without limitation all rights to sub-licence) of all intellectual property rights as contemplated in this Framework Agreement.

For the purposes of construing the warranties in this Clause 1 references to the Sub-Contract Services shall include any part of the Sub-Contract Services. Each warranty shall be construed as a separate warranty and shall not be limited by reference to, or reference from, the terms of any other warranty or any other term of the Sub-Contract.

2. The Sub-Contractor shall, save in so far as he is delayed by any event in respect of which the Supplier is granted an extension of time under the Main Contract for completion of the Services:
- (A) execute and complete the Sub-Contract Services in accordance with the provisions of the Sub-Contract; and
  - (B) ensure that the Supplier shall not become entitled to any extension of time for completion of the Services or to claim any additional payment under the Main Contract due to any failure or delay by the Sub-Contractor.
3. The Sub-Contractor shall from time to time supply the Company and the Supplier with such information as either may reasonably require.
4. To the extent that the intellectual property rights in any and all Documents have not already vested in the Company or the Supplier, the Sub-Contractor hereby grants to the Company an irrevocable, non-exclusive, non-terminable, royalty-free licence to copy and make full use of any and all Documents and all amendments and additions to them and any works, designs or inventions of the Sub-Contractor incorporated or referred to in them for the following purposes:
- (A) understanding the Services;
  - (B) operating, maintaining, repairing, modifying, altering, enhancing, re-figuring, correcting, replacing, re-procuring and re-tendering the Services;
  - (C) extending, interfacing with, integrating with, connecting into and adjusting the Services;

- (D) enabling the Company to carry out the operation, maintenance repair, renewal and enhancement of the TfL Network and/or Sites (as such capitalised terms are defined in the Main Contract);
- (E) executing and completing the Services; and
- (F) enabling the Company to perform its functions and duties as Infrastructure Manager and Operator of the TfL Network and/or Sites (as such capitalised terms are defined in the Main Contract)

provided always that the Supplier shall not be liable for the consequences of any use of the Documents as aforesaid for any other purpose. Such licence shall carry the right to grant sub-licences and shall be transferable to third parties without the prior consent of the Sub-Contractor.

For the purposes of this Clause, the term "Documents" shall mean documents, items of information, data, reports, drawings, specifications, plans, software, designs, inventions and any other materials provided by or on behalf of the Sub-Contractor in connection with the Sub-Contract (whether in existence or to be made).

5. The Sub-Contractor agrees:

- (A) on request at any time to give the Company or any persons authorised by the Company access to the material referred to in Clause 4 and at the Company's expense to provide copies of any such material; and
- (B) at the Sub-Contractor's expense to provide the Company with a set of all such material on completion of the Sub-Contract Services.

6. The Parties hereby agree that:

- (A) this Framework Agreement shall be personal to the Sub-Contractor;
- (B) the Company may assign the benefit of this Framework Agreement to any third party;
- (C) the rights and remedies contained in this Framework Agreement are cumulative and shall not exclude any other right or remedy available to either Party in law or equity.

7. The Sub-Contractor warrants and undertakes to the Company that he has maintained and will continue to maintain all insurances required to be maintained pursuant to the terms of the Sub-Contract and that, insofar as he is responsible for the design of the Sub-Contract Services, he has professional indemnity insurance with a limit of indemnity of not less than two million pounds (£2,000,000) in respect of each and every claim which may be made against the Sub-Contractor in respect of the Sub-Contract Services. The Sub-Contractor shall maintain such professional indemnity insurance for a period of 12 years from completion of the Services provided such insurance remains available at commercially reasonable rates and shall notify the Company forthwith if such insurance ceases to be so available. When deciding whether such insurances are available at commercially reasonable rates, no account shall be taken of any increase in the premium or imposition of terms which arise as a result of the Sub-Contractor's insurance claims record.