

## What we are already doing

### Recycled plastic railway sleepers

For the circular economy to be successful, it is not enough to simply recycle waste, products must also be purchased that are made from recycled material. A practical example of us contributing to the circular economy is the use of plastic railway sleepers which are made from 99 per cent recycled materials. The sleepers replace timber sleepers in above-ground sections of the London Underground, and have been used successfully since 2019. The recycled plastic sleepers also have reliability and maintenance advantages, as well as being lighter and therefore easier to handle with the associated health and safety benefits for those installing them. In addition, the manufacturer will take back the sleepers at the end of their life for further onward recycling. The same material is also being used for depot and siding walkways.

We embed principles to reduce waste in projects' early planning and design stages

Recycled plastic railway sleepers can improve reliability on the network





# Case study

## Reuse of materials in major projects

The Northern Line Extension (NLE) is a major project that involved the construction of two new Underground stations, two ventilation shafts and two 3.2km-long tunnels extending the existing Northern Line to Battersea. In total, more than 845,000 tonnes of excavated material was transported from Battersea by barge. This material was taken down the River Thames to Goshems Farm, near Tilbury in Essex, where it was used to restore a Victorian landfill to useful arable land. With 701 barge movements in total, and one barge equivalent to 66 wagons, that equates to taking 46,965 wagons off the streets. As a result, the NLE has achieved CO<sub>2</sub> savings of 2,009 tonnes by using River Transport as opposed to road.

The CEEQUAL framework was used to drive sustainable design and construction. The CEEQUAL tool helped establish sustainability as a key objective to: deliver the civil engineering elements of the project; encourage local community engagement; improve relations with affected stakeholders; select energy-efficient machinery; set up a waste transfer station to ensure efficient material reuse; consider other transport users; and educate staff about sustainable construction methods.

The project being assessed through the CEEQUAL criteria led to innovative workshops that promoted sustainable design. This led the exploration of opportunities such as energy harvesting and PV technologies. The project also investigated what measures could be employed to reduce the energy consumption of the tunnel boring machine.

A carbon assessment was undertaken which identified decisions that were incorporated into the design of the project. These resulted in fewer or no carbon emissions, overall.

These design changes have led to significant savings through measures, including reducing the thickness of tunnel linings, reducing the length of launch tunnels and removing waste by barge rather than road. The project sought to maximise off-site manufacturing of components where possible, which helped minimise excess waste. The concrete platforms, columns, beams, ceiling slabs, stairs and tunnel segments were all manufactured off site, significantly reducing the concrete waste associated with in-situ concreting. The supply chain was challenged to reduce packaging where possible, with reusable stillages used and only high-quality pallets permitted, which were then collected for reuse.

Much of the temporary infrastructure required to construct the NLE was sold on to other construction projects, such as the nearby Thames Tideway project, or for other uses. Surplus materials were offered to local charities or returned to the supplier, where possible.

These measures enabled the NLE to achieve extremely high rates of reuse and recycling, with remaining waste going to incineration, enabling energy recovery, and less than one per cent going to landfill.

The project also sought to use local and recycled materials, where possible. Another construction project, less than one kilometre away from the Battersea site, needed to dispose of clean excavated material and the NLE site took advantage of this to use the material as backfill. Nearly 1,000 tonnes of this material were used to fill voids around the new Battersea Power Station structure, saving costs and avoiding the material being sent further afield as waste.





## Best environmental practices

Deliver our activities responsibly and be a good neighbour







# Managing our impact

## Our ambitions

- Be a good neighbour
- Comply with our obligations and legal requirements
- Go beyond our minimum obligations to apply environmental and sustainability best practice
- Benchmark our environmental performance with similar organisations, encourage innovation and share our learnings with others
- Be transparent about our performance

## How will this be reached?

- Our projects and programmes self-assess their sustainability issues and environmental risks, and are independently verified, where appropriate, to improve their sustainable design principles
- Continually improve our management system, provide guidance and training to colleagues and suppliers, and undertake assurance activity to improve compliance
- Ensure compliance with our carbon and energy disclosure requirements and regularly report on our performance
- We test and use improved technology and materials, including targeted trials for solutions relevant to reducing noise impact
- Apply Best Practicable Means to try to reduce the number of noise-related complaints from our operations and projects and ensure any complaints are promptly and fully addressed

## Our targets

- Aim to meet 'no net increase in noise' in Defra 'noise important areas' for our schemes
- Projects where the estimated total cost exceeds £5m or the contractor's costs exceed £25m must achieve CEEQUAL certification award level of at least 'Very Good', ideally 'Excellent', and BREEAM rating level of at least 'Very Good' and ideally 'Excellent'. Ensure no significant environmental incidents attributable to our activities across the network

## How will this be monitored?

- We already monitor our performance through incidents and complaints, and will continue to do so
- Where sustainability rating systems are applied, these will be externally verified, and performance ratings made available to the public



## What we are already doing

### Our Sustainability Staff Network Group and Sustainability Champions

The TfL Sustainability Staff Network Group celebrated its first year of operation in June 2021. It is open to all colleagues who would like to help make TfL a more sustainable organisation and personally help combat the climate crisis and progress the UN Sustainable Development Goals more broadly. With a positive and constructive focus, the group aims to raise awareness of issues and opportunities, foster exploration of solutions and support to overcome challenges and grow from successes along the way.

The group has grown rapidly and continues to build membership, knowledge and capacity through its intranet activity, regular events and online discussion sessions. It also connects through quarterly and annual reporting activity. As this network matures and grows it will continue to positively impact on our environmental performance across the organisation.

Meanwhile, we also aim to have a sustainability champion in each team across the business. The sustainability champions encourage discussions of sustainability issues in day-to-day life at TfL and help empower staff to make improvements where they can.

The champions engage their teams in the best ways to suit their specific circumstances. The first tranche of 50 sustainability champions link with environmental champions in the Surface and Major Projects directorates as well as energy champions at London Underground stations.

### Collaboration with suppliers on innovative materials

We are working with suppliers to pursue and implement circular economy solutions. Annually, 40 million waste tyres are generated in the UK. Tarmac has developed the technology to allow granulated rubber use in asphalt and has recently received approval for use on the strategic road network. As a result, Tarmac, Kier, Matis Consultants and TfL have been assessing the viability of using such mixes on strategic roads in London.

The UltraPave R mix which incorporates one per cent rubber has recently been laid on a section of the TfL Road Network in south-east London – the A205 Stanstead Road between Stanstead Grove and St Dunstan's College access road, near Catford. Early assessments show this new asphalt mix is viable and could be considered as a default surfacing treatment across the TfL Road Network in the future. Approximately 750 waste tyres would be recycled for every kilometre of road surfaced.

We aim to have a sustainability champion in each team across the business



# Our roadmap of environmental improvements\*



\* We will add to and update our roadmap of environmental improvement as part of our regular public reporting on progress



# Delivering our Corporate Environment Plan

We will ensure environmental sustainability is a core part of our culture. It is already a central theme of our new Internal Vision and Values plan. The plan outlines the kind of organisation we want to be and was developed with extensive input from colleagues across the business, who told us that sustainability matters a great deal to them.

Our ambition and targets will be embedded in our plans for all business areas. We will use these to help drive and track improvements in environmental performance and outcomes.

We will go beyond our own activity and set high expectations on environmental performance and ambition from anyone that we work with.





# How we will monitor and report on progress

We are committed to being transparent about our performance. While we already have extensive systems for monitoring our environmental performance, we recognise that improving our environmental data reporting capability is key to delivering a successful Corporate Environment Plan. We have developed an improvement programme to achieve this.

Progress against the roadmap milestones will be tracked and reported in both the Safety, Health and Environment annual reports and future Sustainability Reports. As our delivery plans develop, we will add to and update the roadmap as part of this regular reporting.

Internally, we will be reporting on our carbon emissions through the TfL Scorecard which is reported to our Board, and other environmental metrics are embedded in the relevant scorecards from 2021/22 onwards.

We want to  
improve our  
environmental  
data reporting  
and capability



We will report on our progress against this plan



Glossary

Biodiversity	Term used to describe the enormous variety of life on Earth, including plants, bacteria, animals, and humans. It can be used more specifically to refer to all the species in one region or ecosystem
Biodiversity net gain	An approach to development that leaves biodiversity in a better state than before
Biosecurity	Procedures or measures designed to protect the population against harmful biological or biochemical substances
Building Research Establishment Environmental Assessment Method (BREEAM)	The world's longest-established method of assessing, rating, and certifying the sustainability of buildings
Carbon	A shorthand term used to mean Carbon Dioxide (CO <sub>2</sub> ) and other greenhouse gases that contribute to climate change. These are increased by human activities
Carbon dioxide (CO <sub>2</sub> )	Principal greenhouse gas related to climate change
Carbon footprint	The total greenhouse gas emissions caused by an individual, event, organisation, service, or product, expressed as carbon dioxide equivalent
Carbon offsetting	The reduction in, or extraction from the atmosphere of, emissions of carbon dioxide or other greenhouse gases made in one place in order to compensate for emissions made elsewhere
Circular economy	System based on the principles of designing out waste and pollution, keeping products and materials in use and regenerating natural systems
Civil Engineering Environmental Quality Assessment and Awards Scheme (CEEQUAL)	Evidence-based sustainability assessment, rating and awards scheme for civil engineering, infrastructure, landscaping and works in public spaces
Climate change adaptation	Improvements to the built environment, assets or processes that lead to a reduction in harm or risk of harm, or realisation of benefits associated with climate variability and climate change. Adaptation policies can lead to greater resilience of communities and ecosystems to climate change
Commercial and Industrial waste (C&I waste)	Consists of a wide variety of office product packaging, including cardboard, wood, metal, glass, textiles, containers and aggregates. For TFL, this includes waste from stations, tenanted properties, depots and head offices

Construction, demolition and excavation waste (CDE waste)	The largest waste stream generated in London. It can contain bricks, slabs, concrete, plaster (gypsum), plasterboard, insulation, and excavation materials such as soil, sand and wood
Decarbonise	To remove or reduce the potential carbon dioxide emissions to the atmosphere from a process or structure
Department of Environment, Food and Rural Affairs (Defra)	Government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities in the UK
Downstream activities	The final processes in the production and sale of goods, where finished products are created, sold and used
Ecosystem services	The benefits provided by ecosystems that contribute to making human life both possible and worth living
Embodied carbon	The carbon footprint of a material. It considers how much carbon is released throughout the supply chain and is often measured from cradle to (factory) gate, or cradle to site (of use). In construction projects, this is also referred to as Capital Carbon or Infrastructure Carbon
Geographic Information System (GIS)	A system that creates, manages, analyses and maps data.
Greenhouse gas	Any gas that induces the greenhouse effect, trapping heat within the atmosphere that would normally be lost to space, resulting in an increase in average atmospheric temperatures, contributing to climate change. Examples include carbon dioxide, methane and nitrous oxides
Green infrastructure	The network of parks, green spaces, gardens, woodlands, rivers, green roofs, street planting, rail and road verges and wetlands that is planned, designed and managed to: promote healthier living; lessen the impacts of climate change; improve air quality and water quality; encourage walking and cycling; store carbon; and improve biodiversity and ecological resilience
Greenspace Information for Greater London (GiGL)	London's environmental records centre. GiGL provides a hub for collating and sharing data about London's wildlife, habitats, green space and related data
Low Emission Zone (LEZ)	Encourages the most polluting heavy diesel vehicles driving in London to become cleaner. The LEZ covers most of Greater London and is in operation 24 hours a day, every day of the year



Scope 2 emissions	Indirect greenhouse gas emissions from the consumption of purchased electricity, heat or steam
Scope 3 emissions	Other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities not covered in scope 2
Sites of Importance for Nature Conservation (SINCS)	Areas of land chosen to represent the best wildlife habitats in London and areas of land where people can experience nature close to where they live and work
Solar photovoltaics (PV)	Technology for generating electricity using energy from the sun
Supply chain	The entire process of making and selling commercial goods, including every stage from the supply of materials and the manufacture of the goods, products and services through to their distribution and sale
Sustainable drainage systems (SUDS)	Systems designed to efficiently manage the drainage of surface water in the urban environment. The use of SUDS in London helps reduce the impact on, and cost of upgrading, London's largely Victorian, insufficient drainage infrastructure
Ultra Low Emission Vehicles (ULEV)	Vehicles that emit extremely low levels of motor vehicle emissions compared to other vehicles
Ultra Low Emission Zone (ULEZ)	To improve air quality, the Ultra Low Emission Zone operates 24/7 in central London. Vehicles need to meet ULEZ emission standards or drivers have to pay a daily fee to drive into the zone
Upstream activities	Points in production that originate early in the processes
Urban Greening Factor	A tool that evaluates and quantifies the amount and quality of urban greening that a scheme provides, to inform decisions about appropriate levels of greening in new developments
Zero carbon	The state in which no greenhouse gases are released through an activity

Natural capital account	The set of environmental resources – including green space, air, water, wildlife – that provides services, such as flood protection or cleaner air, that benefit the wellbeing of Londoners and the city's economy. Like other forms of capital, such as human capital and goods and services, natural capital is a valuable asset that must be managed sustainably to maintain and improve these benefits
Net-zero carbon	Making the amount of carbon emitted into the atmosphere equal to the amount taken out of atmosphere. Reaching zero carbon on a net basis, where any residual greenhouse gas emissions are offset
Non-Road Mobile Machinery (NRMM)	A significant contributor to London's air pollution, especially in the construction sector, including generators, diggers, pumps, powerful hand tools and lighting rigs
Oxides of Nitrogen (NO <sub>x</sub> ) consisting of nitric oxide (NO) and nitrogen dioxide (NO <sub>2</sub> )	Two gases whose molecules are made of nitrogen and oxygen atoms. These nitrogen oxides contribute to the problem of air pollution, impacting on human health and life expectancy and playing a role in the formation of both smog and acid rain
Particulate matter	Sum of all solid and liquid particles suspended in the air, many of which are hazardous. This complex mixture includes both organic and inorganic particles such as dust, pollen, soot, smoke and liquid droplets. These particles vary greatly in size, composition and origin. Sources include burning fuels in internal combustion engines and heating boilers, tyre and brake wear, chemical reactions in the atmosphere and dust blown in from outside areas
PM10	Inhalable Particulate Matter, with diameters that are generally 10 micrometres and smaller. PM10 does not penetrate as deeply into the body as PM2.5 but still has serious health implications, including compromised lung function and disease
PM2.5	Particles that have diameter less than 2.5 micrometres (more than 100 times thinner than a human hair). These particles can penetrate deep in the lungs and other organs, causing a wide range of health problems
Resilience	The ability of a system to recover from the effect of an extreme load that may have caused harm
Scope 1 emissions	All direct greenhouse gas emissions from owned or controlled sources such as company vehicles and gas boilers



About TfL

Part of the Greater London Authority family led by Mayor of London Sadiq Khan, we are the integrated transport authority responsible for delivering the Mayor's aims for transport.

We have a key role in shaping what life is like in London, helping to realise the Mayor's vision for a 'City for All Londoners' and helping to create a safer, fairer, greener, healthier and more prosperous city. The Mayor's Transport Strategy sets a target for 80 per cent of all journeys to be made by walking, cycling or using public transport by 2041. To make this a reality, we prioritise sustainability, health and the quality of people's experience in everything we do.

We run most of London's public transport services, including the London Underground, London Buses, the DLR, London Overground, TfL Rail, London Trams, London River Services, London DIAL-a-Ride, Victoria Coach Station, Santander Cycles and the Emirates Air Line. The quality and accessibility of these services is fundamental to Londoners' quality of life. By improving and expanding public transport and making more stations step

free, we can make people's lives easier and increase the appeal of sustainable travel over private car use.

We manage the city's red route strategic roads and, through collaboration with the London boroughs, we are helping to shape the character of all London's streets. These are the places where Londoners travel, work, shop and socialise. Making them places for people to walk, cycle and spend time will reduce car dependency, improve air quality, revitalise town centres, boost businesses and connect communities. As part of this, the Ultra Low Emission Zone scheme and more environmentally friendly bus fleets are helping to tackle London's toxic air.

During the coronavirus pandemic we have taken a huge range of measures to ensure the safety of the public. This includes enhanced cleaning using hospital-grade cleaning substances that kill viruses and bacteria on contact, alongside regular cleaning of touch points, such as poles and doors, and introducing more than 1,000 hand sanitiser points across the public transport network.

Working with London's boroughs we have also introduced Streetspace for London, a temporary infrastructure programme providing wider pavements and cycle lanes so people can walk and cycle safely and maintain social distancing.

At the same time, we are constructing many of London's most significant infrastructure projects, using transport to unlock much needed economic growth. We are working with partners on major projects like the extension of the Northern line to Battersea, Barking Riverside and the Bank station upgrade.

Working with Government, we are in the final phases of completing the Elizabeth line which, when open, will add 10 per cent to central London's rail capacity. Supporting the delivery of high-density, mixed-use developments that are planned around active and sustainable travel will ensure that London's growth is good growth. We also use our own land to provide thousands of new affordable homes and our own supply chain creates tens of thousands of jobs and apprenticeships across the country.

We are committed to being an employer that is fully representative of the community we serve, where everyone can realise their potential. Our aim is to be a fully inclusive employer, valuing and celebrating the diversity of our workforce to improve services for all Londoners.

We are constantly working to improve the city for everyone. This means using data and technology to make services intuitive and easy to use and doing all we can to make streets and transport services accessible to all. We reinvest every penny of our income to continually improve transport networks for the people who use them every day. None of this would be possible without the support of boroughs, communities and other partners who we work with to improve our services.

By working together, we can create a better city as London recovers from the pandemic and moves forward.







### **Appendix 3**

#### Documents relating to the Carbon Resource Plan





## Carbon and Resource Plan (CRP)

<b>Directorate</b>	Name of Directorate
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<b>Project *</b> <b>Programme *</b>	Name of Project or Programme
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<b>Reference</b>	Central Project List (CPL) item ID
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<b>Pathway Stage</b>	Pathway Stage
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<b>Responsible <sup>(1)</sup></b>	Project Engineer	Name
	Signature	Date

<b>Accountable</b>	Project Manager	Name
	Signature	Date

<b>Reviewed by <sup>(2)</sup></b>	Project Engineer	Name
	Signature	Date

Product History	Version	Date	Author	Summary of changes
	0.1	dd/mm/yyyy	Insert Name	First draft

\* Delete as appropriate

<sup>(1)</sup> The person(s) responsible for the design should produce this document. All designers should be consulted and all project stakeholders aware of any actions to ensure Carbon is considered in decision making.



(2) If Designer signs as Responsible, then Project Engineer signs Reviewed by

## Product Context

<b>Purpose</b>	The purpose of the Carbon and Resource Plan is to encourage and facilitate the reduction of whole life carbon emissions, energy consumption and waste production through the application of the carbon, energy, and waste reduction hierarchies.
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<b>Applicability</b>	The Carbon and Resource Plan must be produced for all projects/programmes impacting assets or creating new assets. This product is normally created at project level, but if appropriate and agreed with the SHE Sustainability and Corporate Environment team, it may be produced for a group of projects or programme.
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<b>Consult</b> Consider these roles when developing this document.	<b>Role</b>	<b>Detail</b>
	Sponsor	To be involved in carbon and resource workshops so that carbon, energy and waste are considered and captured in the development of the business case
	Operations Representative	To propose savings initiatives and ensure those proposed by others consider the benefits and disbenefits of each option from their perspective.
	Maintenance Representative	To propose savings initiatives and ensure those proposed by others consider the benefits and disbenefits of each option from their perspective.
	Commercial Lead	To propose savings initiatives and ensure those proposed by others consider the benefits and disbenefits of each option from their perspective.
	Subject Matter Experts	To propose savings initiatives and ensure those proposed by others consider the benefits and disbenefits of each option from their perspective.
	Construction Lead / Manager	To propose savings initiatives and ensure those proposed by others consider the benefits and disbenefits of each option from their perspective.
	SHE Corporate Environment	Subject Matter Expert for carbon and the environment who may audit this document. Will also propose savings initiatives and ensure those proposed by others consider the benefits and disbenefits of each option from their perspective.





Characterisation Table	Category Level			
	Simple	Standard	Significant	Major
All sections	Required	Required	Required	Required

**General Notes:**

- The whole life carbon management process for projects can be found on [this page](#) including relevant links to each lifecycle stage specific process and guidance.

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



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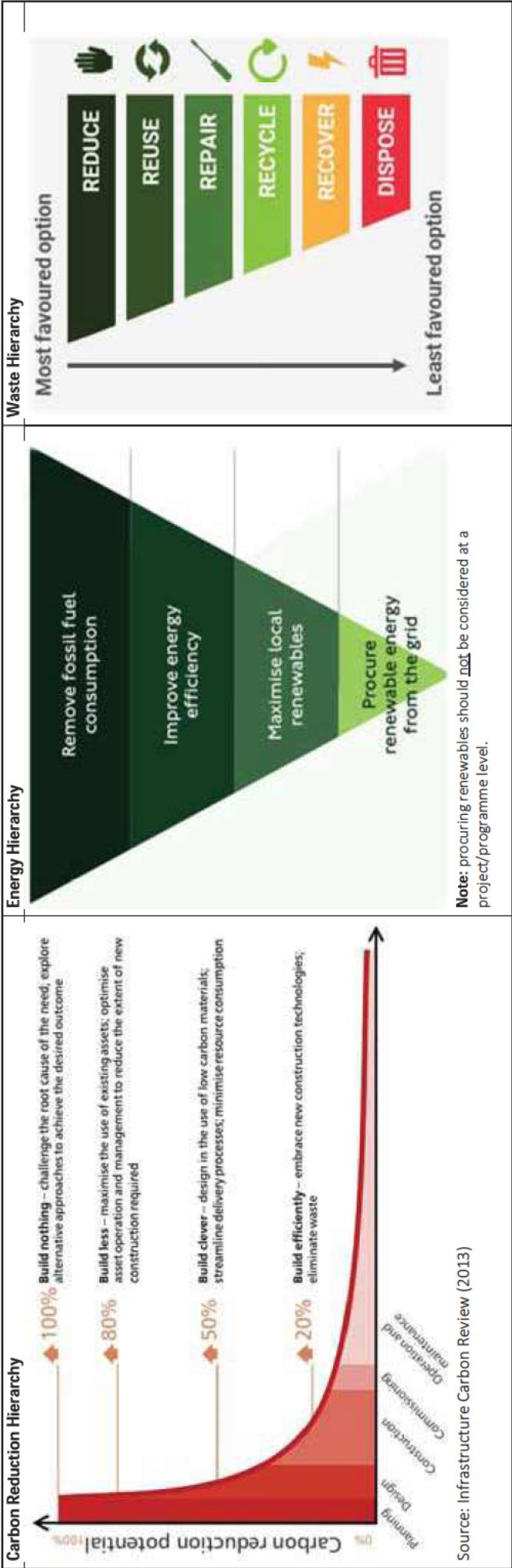
Distinguishing elements of the Carbon Management Process

Carbon and Resource Plan		Whole Life Carbon Model		Carbon Management Plan
Applicability	All projects impacting existing assets and installing new assets.	All projects impacting existing assets and installing new assets.		Schemes applying to DFT for funding.
Responsible	Project Engineer* *The person(s) responsible for the overall design should produce this document. All designers should be consulted and all project stakeholders aware of any actions to ensure Carbon is considered in all decision making.	Project Engineer		Project Manager
Purpose of deliverable	Support the identification of carbon, energy and waste reduction opportunities and their implementation to enable low carbon, energy, and waste outcomes: <ul style="list-style-type: none"><li>Provides guidance for Carbon and Resource Workshops and supports capture of discussions</li><li>Tracks Carbon, Energy and Waste reduction opportunities and their outcomes</li></ul>	Quantitative assessment of whole life carbon.		Integrated or separate component of a schemes Management Case that details the plan for Carbon Management on a project, including assumptions, boundaries and scope of Whole Life Carbon assessment and modelling; RACI for enacting Carbon Management; monitoring and reporting plans, and Whole Life Carbon reporting.
Creation and Updates	The CRP is Created at Option Selection and reviewed and updated at each Pathway Stage.	The Pathway Stage at which to begin modelling is defined in the Environmental Evaluation according to <ul style="list-style-type: none"><li>Major/Significant – Outcome Definition<ul style="list-style-type: none"><li>Quantitative modelling at longlist and shortlist</li></ul></li><li>Standard – Option Selection<ul style="list-style-type: none"><li>Qualitative assessment at longlist</li><li>Quantitative model at shortlist</li></ul></li><li>Simple – Concept Design</li><li>The first quantitative Whole Life Carbon model produced for project is the <u>Carbon Baseline</u>.</li><li>Updates or replacement of the Carbon Baseline must be managed by Change Control and only occur under specific circumstances.</li><li>Throughout the project, Live/Realised Carbon Models continuously track the latest design of a project. These may be produced as “updates” of previous Carbon Models or created new depending on the changes to the underlying assumptions and data used to create the Models.</li></ul>		Multiple per project (one report or report revision per stage). A <u>carbon management plan template</u> is held within business case guidance.



# Introduction to completing the Carbon and Resource Plan: the Carbon, Energy and Waste Reduction Hierarchies

Transport for London must support London's ambitions to become a zero-carbon and zero-waste city. To reduce the Carbon, Energy and Waste associated with Transport for London's activities, projects impacting existing assets or installing new assets must complete the Carbon and Resource Plan (CRP). The CRP supports London's ambitions by requiring projects to identify and implement opportunities aligned with the Carbon, Energy and Waste Reduction Hierarchies:



The CRP provides a framework for projects to use the hierarchies by:

- providing guidance for using the hierarchies in "Carbon and Resource Workshops" to identify reduction opportunities and supports capture of these discussions
- tracking identified opportunities and their outcomes





## Step 1: Carbon and Resource Workshops

- At the start of each Pathway Stage, the Designer must lead a Carbon and Resource Workshop with the project team and stakeholders to identify Carbon, Energy and Waste reduction opportunities for the project. Attendees should include the Designer, Project Manager, Engineers, Sponsor, SHE Business Partners, Construction Managers (where assigned), Maintenance or Operations representatives (where appropriate).
- The workshop may be structured by using the prompting questions below to explore opportunities for minimising carbon, energy and waste and discuss their validity. Where quantified information is available, resource and carbon Hotspots (Tables 2 and 5) should be explicitly considered. Projects may also use their cost and schedule Risk Registers to identify opportunities for cost reductions that also impacts carbon, energy, and waste.
- This section supports these workshops by:
  - Providing prompts for workshop discussion in line with the Carbon, Energy and Waste reduction hierarchies to spark conversation and ideas of opportunities in the categories of: Materials, Transport, Delivery, Maintenance & Replacement, Operational Energy, and End of Life
  - Providing space for projects to make notes during the workshops
- As projects develop their quantitative Whole Life Carbon Models, Energy models and Waste estimates (summarised in Tables 2-7), they should prioritise discussion of opportunities aimed at reducing the identified hotspots.
- Note: Words like 'build' in the table below can be easily swapped for 'deliver, manufacture, procure' to suit the needs of the project.

For further guidance, resources, and examples of reduction opportunities, please review [Part 2 of the Carbon Management Training Suite](#).

Option Selection				Concept Design		Detailed Design		Delivery	
Date of Workshop									
Workshop led by (Designer and Organisation Name):									

Materials & End of Life	Build Nothing	What can be descope? How can the functionality be achieved without buying and/or constructing a new asset? What alternatives could achieve the same outcomes and benefits?
	Build Less	How can existing assets and systems be retrofitted, modified, or repurposed to achieve the project outcomes? How can existing communication systems be used? How can the life of existing assets be maximised? How can the design be made smaller? How can the quantities of materials be minimised? How can the reuse of site material be maximised (e.g., from demolition and site clearance)? Can elements of the existing infrastructure or materials be re-used (rather than building from new)?
	Build Clever	Can off-site construction be used? Can modular construction be used? Are nature-based solution possible? Can less carbon intensive materials be used? (e.g., lower carbon cement and concrete alternatives, high-recycled content steel, higher recycled content) Can sustainable and regenerative material be used (e.g., timber)? Can materials be sourced locally? How can reusability at end of life be maximised? Can Circular Economy principles be considered in asset/material selection? What consideration has been given to sourcing materials for re-use from other TfL sites or other users? What steps have been taken to maximise the use of materials with recycled content? Can use be made of the sharing economy or using products as a service?
	Build Efficiently	How can rework be minimised? (Get It Right initiative) How can overordering be minimised?
Brainstorm		

Transport	Transport Nothing	What is already on-site that can be used (e.g., plant, materials etc)?
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	Transport Less	How can transport distances be minimised? How can the number of deliveries be minimised? Can materials be sourced from TfL stores or sites?
	Transport Clever	Is there a lower carbon transport option? Can lorries and vehicles be removed from the road?
	Transport Efficiently	How can vehicle loading be maximised? How can dead mileage be minimised?
Brainstorm		
Delivery	Deliver Nothing	What is already on-site that can be used (e.g., site electricity connection, site water supply)?
	Deliver Less	How can temporary works be minimised? How can the re-use of temporary works maximised? How can site electricity, fossil fuel and water consumption be minimised? How can time on site be minimised? Can more energy efficient plant be used?
	Deliver Clever	How can fossil fuel consumption be removed or minimised? How can plant use be minimised? Can renewable energy be used to power site cabins and facilities? Can SUDS be used on longer term construction sites? Can use be made of the sharing economy / using products as a service?
	Deliver Efficiently	How can rework be minimised? (Right First-Time initiative) How can plant utilisation be minimised?
Brainstorm		
Maintenance & Replacement	Use Nothing	How can the design life be maximised? Can maintenance be designed out?
	Use Less	How can maintenance be minimised? How can the durability of the design be maximised (to lessen the need for repairs in future)? How can durability be maximised?
	Use Clever	How can the future replacement of assets with lower carbon alternatives be supported? How can the resilience of other assets in the system be supported? How can the design be improved to make it resilient to extreme weather and climate change?
	Use Efficiently	How can asset condition be monitored?
Brainstorm		
Operational Energy	Use Nothing	How can fossil fuel consumption be removed? Are passive options available? (e.g., skylights for maximising natural light, passive cooling, green/blue roof, sunshades)
	Use Less	How can energy efficiency be maximised? How can energy consumption be minimised? Can more energy efficient products be chosen e.g., from the Energy Technology List?
	Use Clever	How can the use of local renewables be maximised on the asset or in the vicinity? <sup>1</sup> Can a heat pump be installed for heating?
	Use Efficiently	How can the utilisation of energy consuming assets be minimised? (e.g., motion sensors, heating/cooling programmes) Can out of hours consumption of energy be controlled/minimised?

<sup>1</sup> It is TfL strategic policy for all new build structures to install solar photovoltaic panels for electricity generation.





Brainstorm													
End of life	<table><tr><td>Reduce</td><td>How can waste be minimised? How can the cut and fill balance be optimised to reduce the quantity of excavated material taken off site? Can less wasteful construction processes be used?</td></tr><tr><td>Reuse</td><td>Are there identifiable projects or organisations that could make use of, or reuse, the project's waste? How can the reuse of site materials be maximised (e.g., from demolition and site clearance)? Can topsoil be reused on site or locally? How can the project aid disassembly for reuse?</td></tr><tr><td>Repair</td><td>How can the project aid disassembly for repair?</td></tr><tr><td>Recycle</td><td>How can the project aid disassembly for recycling? How can the recyclability of used materials be maximised? Can the recycling rates of transfer stations and/or recycling facilities be considered when selecting facilities to be used?</td></tr><tr><td>Recover</td><td>After exhausting the above considerations, are there options for recovering energy or other useful returns from the waste?</td></tr><tr><td>Dispose</td><td>How can the disposal of waste be minimised?</td></tr></table>	Reduce	How can waste be minimised? How can the cut and fill balance be optimised to reduce the quantity of excavated material taken off site? Can less wasteful construction processes be used?	Reuse	Are there identifiable projects or organisations that could make use of, or reuse, the project's waste? How can the reuse of site materials be maximised (e.g., from demolition and site clearance)? Can topsoil be reused on site or locally? How can the project aid disassembly for reuse?	Repair	How can the project aid disassembly for repair?	Recycle	How can the project aid disassembly for recycling? How can the recyclability of used materials be maximised? Can the recycling rates of transfer stations and/or recycling facilities be considered when selecting facilities to be used?	Recover	After exhausting the above considerations, are there options for recovering energy or other useful returns from the waste?	Dispose	How can the disposal of waste be minimised?
Reduce	How can waste be minimised? How can the cut and fill balance be optimised to reduce the quantity of excavated material taken off site? Can less wasteful construction processes be used?												
Reuse	Are there identifiable projects or organisations that could make use of, or reuse, the project's waste? How can the reuse of site materials be maximised (e.g., from demolition and site clearance)? Can topsoil be reused on site or locally? How can the project aid disassembly for reuse?												
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Recycle	How can the project aid disassembly for recycling? How can the recyclability of used materials be maximised? Can the recycling rates of transfer stations and/or recycling facilities be considered when selecting facilities to be used?												
Recover	After exhausting the above considerations, are there options for recovering energy or other useful returns from the waste?												
Dispose	How can the disposal of waste be minimised?												
Brainstorm													

## Step 2: Carbon and Resource Opportunities Tracker

- Once opportunities are captured through the Carbon and Resource Workshops, they must be transferred to *Table 1 – Carbon and Resource Opportunities Tracker* for monitoring through to the end of the project. This process of transferring new opportunities will occur after each Pathway Stage Workshop.
- Projects may choose to add their CRP opportunities to their Risk Registers, so carbon, energy and waste opportunities are tracked and reviewed alongside the cost and schedule risk review process.

Table 1 – Carbon and Resource Opportunities tracker

*\*if available*

Hierarchy	Hierarchy principle	Proposal with brief narrative of benefits	Status	Responsible	Status notes	Projected Cost saving*	Other projected savings*
Carbon / Energy / Waste	Hierarchy principle e.g, Build Nothing, Remove fossil fuels, Reuse	Proposed initiative/intervention with a high-level summary of the expected benefits.	Proposed/ Implemented/ Rejected	Entity/role responsible for opportunity	Notes should be based on status: <ul style="list-style-type: none"><li>• Proposed – salient points, action to progress</li><li>• Implemented – point at which (e.g., Detailed Design Review) proposal was implemented.</li><li>• Rejected – reason why proposal was not adopted. This is to demonstrate the work the project has undertaken and prevent later stages repeating work (or understanding why proposal was initially discounted if item is being revisited).</li></ul>	Cost saved. Quantitative if information available, if not qualitative.	Carbon/ waste/ energy saved. Quantitative if information available, if not qualitative.



## Step 3: Carbon and Resource Trackers

### Summary of Whole Life Carbon Models

- The Pathway Stage at which to begin modelling is defined in the digital Environmental Evaluation according to characterisation:
  - Major/Significant – Option Selection
    - Quantitative modelling at longlist and shortlist
  - Standard – Option Selection
    - Qualitative assessment at longlist
    - Quantitative model at shortlist
  - Simple – Concept Design
- For further guidance for Whole Life Carbon Modelling, please review the [Carbon Management Training Suite](#).

Table 2 – Summary of Whole Life Carbon Models

Model	Date produced	Modeller(s) and organisations	Tool(s) used	Major Boundaries and Assumptions	Document Reference(s)
Baseline	*Insert date*		E.g., IStructE carbon tool, TfL Infrastructure Carbon Model Tool, City Planning Carbon Model Tool (eTool), RSSB Carbon tool etc.		Document references of the Whole Life Carbon Model and any accompanying carbon reports produced.
Concept Design v1	*Insert date*				
Concept Design v2	*Insert date*				
Detailed Design	*Insert date*				
Delivery	*Insert date*				
Add/remove as required					



Table 3 – Summary of Whole Life Carbon Model results (tCO2e)

- For further guidance for Whole Life Carbon Modelling, please review the Carbon Management Training Suite.
- Delete or separate lifecycle module columns dependant on the Scope of the project's Whole Life Carbon Models.

Project stage	A0	A1-3	A4	A5	B1	B2-3, 5	B4	B6	B7	B8	C1-4	D	Total	High level narrative
Baseline														
Concept Design v1														
Concept Design v2														
Detailed Design														
Delivery														
Add/remove as required														

Table 4 – Whole Life Carbon Model Hotspots

This table records the hotspots from the current Whole Life Carbon Model. Note that the hotspots may change through the project lifecycle as opportunities and risks and realised.

Hotspot	Description	Estimated Whole Life Carbon emissions (tCO2e)	% of project Whole life Carbon emissions	Description of Table 1 opportunities being pursued that will reduce the impact of the hotspot
Hotspot 1 name	E.g., energy			
Sub-hotspot 1 name	E.g., lighting			
Sub-hotspot 2 name	E.g., HVAC plant			
Hotspot 2 name	E.g., Superstructure			
Hotspot 3 name	E.g., Concrete			
Hotspot 4 name				
Add/remove as required				





## Summary of Resource Use

This table records the estimated and measured resource usage of a project in absolute terms to aid understanding of the amount of change in Whole Life Carbon Emissions due to application of Build Nothing and Build Less.

Table 5 – Summary of Resource Use

Please add more columns for significant resources used by a project as required (e.g., asphalt, timber, water etc.).

Pathway Stage	Concrete (m³)	Steel (t)	Asphalt (m³)	Aggregates (m³)	Add other key resources here	Add other key resources here	Add other key resources here	High level narrative
Baseline								E.g., Concrete figure only includes superstructure.
Concept Design no. 1 (2021)								
Concept Design no. 2 (2022)								
Detailed Design (2023)								
Delivery (2025)								
Add/remove as required								



## Summary of Energy Use

This table records the estimated and measured energy consumption and generation of a project in absolute terms.

Table 6 – Summary of Energy Use

Please add more columns for significant energy sources used by a project as required.

Project stage	Construction Electricity Consumption (kWh)	Construction Diesel (litres)	Operational Electricity Consumption (kWh/annum)	Operational Electricity Generation (kWh/annum) <sup>2</sup>	Operational Natural Gas (m <sup>3</sup> /annum)	Add other key energy source here	High level narrative
Baseline							
Concept Design no. 1 (2021)							
Concept Design no. 2 (2022)							
Detailed Design (2023)							
Delivery (2025)							
Add/remove as required							

<sup>2</sup> It is TfL strategic policy for all new build structures to install solar photovoltaic panels for electricity generation.





## Summary of Waste Streams

This table records the estimated and measured waste streams in absolute terms. (The Site Waste Management Plan should be used to track actual waste performance against estimated.)

Table 7a – Summary of Non-Hazardous Waste Streams

Project stage	Quantity (tonnes)	% Reused	% Recycled	% Recovered	% Landfilled	High level narrative
Baseline						Include brief details of significant sources of waste
Concept Design no. 1 (2021)						
Concept Design no. 2 (2022)						
Detailed Design (2023)						
Delivery (2025)						
Add/remove as required						

Table 7b – Summary of Hazardous Waste Streams

Project stage	Quantity (tonnes)	% Reused	% Recycled	% Recovered	% Landfilled	High level narrative
Baseline						
Concept Design no. 1 (2021)						
Concept Design no. 2 (2022)						
Detailed Design (2023)						
Delivery (2025)						
Add/remove as required						



Table 7c – Summary of Excavated Material

Project stage	Quantity (tonnes)	% Reused	% Recycled	% Recovered	% Landfilled	High level narrative
Baseline						
Concept Design no. 1 (2021)						
Concept Design no. 2 (2022)						
Detailed Design (2023)						
Delivery (2025)						
Add/remove as required						





*This section is for the use of the TfL PMO Process & Guidance Team only*

## Product Details

Name:	Carbon and Resource Plan
Document No:	PD0232
SME:	Senior SHE Environment Manager – Corporate Environment
Accountable:	Senior SHE Environment Manager – Corporate Environment
Review Date:	March 2026

## Product Version History

Revision	Date	Reason for Change
A1	14/07/2017	Addition of Front Sheet and Pathway Info Sheet.
A2	09/11/2018	TfL Pathway Refresh - Product updated to align with PD0245 (Environmental Evaluation).
A3	04/04/2019	Improved guidance made minor quality of life improvements. Created and signposted SharePoint site.
A4	17/02/2020	Amended ECA and added ability to add tabs.
A5	20/05/2022	Changed to MS Word format (from macro enabled Excel) and other minor changes including general simplification.
A6	13/03/2023	Improved link to Energy, Resource and Waste reduction and simplified tables. Name changed to Carbon and Resource Plan.



## **Appendix 4**

### **TfL Pathway Resource and Waste Management Plan**

TfL Pathway

Part of the TfL Management System

## Resource and Waste Management Plan

Project * Programme *	Name of Project or Programme		
Reference	Recognised reference code (e.g. profit centre, UIP, etc.)		
Stage	Pathway Stage		
Responsible	Project Engineer (Stage 1-4) / Construction Manager (Stage 5)*	Name	
	Signature	Date	
Accountable	Project Manager	Name	
	Signature	Date	
Product History	Version	Date	Summary of changes
	0.1	dd/mm/yy	First draft

This document must be filed in accordance with [document filing structure](#)

\* Delete as Appropriate



# Product Context

Purpose	The purpose of this product is to improve how resources and materials are managed throughout the project lifecycle; reducing the cost of materials and waste over whole life; to ensure compliance with legal obligations, including implementing the waste hierarchy (as required by The Waste (England and Wales) Regulations 2011) and the waste duty of care, and to meet TfL objectives and targets to reduce the amount of waste generated by projects
---------	--

Applicability	Project	This product must be completed for all projects with an estimated final cost of £250,000, involving construction, demolition and excavation or any other potential to produce waste eg discarded equipment.
	Programme	Where a Programme constitutes a number of similar projects one Resource Waste Management Plan may be produced for the whole Programme with agreement from the Environment Manager.

Consult	Role	Detail
	Environment Manager	Provide details of the consultation required and / or the contribution needed for completion of this product.
	HSE Manager	Provide details of the consultation required and / or the contribution needed for completion of this product where appropriate.

Inform	Role	Detail
	HSE Manager	To have sight of document and any subsequent changes to underpin first line support provided to teams.

Characterisation	Category			
	Simple	Standard	Significant	Major
Resource and Waste Management Plan	Required for all levels			

## Characterisation Notes:

- What is Characterisation? Find out [here](#).
- Where a section has been characterised as not being required (shown by 'X' in the above table), the following note should be entered into the corresponding section in the Product - "not required by

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

## General Notes:

- \* If a Construction Manager is not in place, the Project Engineer must retain responsibility for this product.



Contents

EVERY JOURNEY MATTERS

- [Sheet1 Instructions]
- [Sheet2 Design Efficiency]
- [Sheet3 RWMP Summaries]
- [Sheet4 for Facilities]
- [Sheet5 if TfL is PC]



EVERY JOURNEY MATTERS

## Sheet 1 - Instructions

<b>Purpose</b>		<p>TfL has a role to bring value and corporate responsibility by designing out, reducing and managing waste and contributing to the Mayor's Goals on Responsible Procurement and the Circular Economy.</p> <p>The best opportunities for designing out waste and improving materials efficiency in construction projects occur during the design stage. Implementing these opportunities can also result in significant cost savings. TfL must also manage its resources and waste in a compliant way.</p> <p>Contractors, including designers, must be made aware of TfL's objectives and targets relating to resource management, materials and waste management during the procurement process. This is set out in the Corporate Environment Framework or in the Works Information environmental section. Contractors must be made aware that appropriate waste management targets will be set in the contract to ensure compliance.</p> <p>The purpose of this document is to provide the documented process to ensure that TfL manages resources and waste to ensure legal compliance and good practice:</p> <ol style="list-style-type: none"><li>1. materials and waste are considered early in the project or programme</li><li>2. decisions made regarding resource use and waste management during the design stage are recorded and passed on to the Principal Contractor in an accessible manner</li><li>3. TfL manages its resources and waste according to legal and policy requirements</li></ol>
<b>Roles and Responsibilities</b>	<b>Stage</b>	
	1 to 4	The Project Manager (PM) is accountable for ensuring that a Resource and Waste Management Plan (Sheet 2 - Design Efficiency) is completed for all projects with an estimated final cost of above £250,000, involving construction, demolition and excavation. Projects below £250,000 must complete the Small Projects template (sheet 4) during construction.
	1 to 4	Where a Programme constitutes a number of similar projects one Resource Waste Management Plan may be produced for the whole Programme with agreement from the Environment Manager.
	1 to 4	The PM must instruct the designer (including TfL internal design) to do Sheet 2 Design Efficiency.
	1 to 4	All design decisions taken to reduce waste and manage resources more efficiently must be captured within the Sheet 2 Design Efficiency.
	1 to 5	The document must be produced to reflect progress of the design and works (minimum at every project stage) and on completion.
	1 to 5	The designer is responsible for completing sheet 2 Design Efficiency and recording results in the relevant tables on Sheet 3.
	1 to 5	The tables on sheet 3 RWMP summaries must be approved by the Project Manager following review by an HSE Manager.
	1 to 5	The tables on sheet 3 RWMP summaries must be handed over to the Principal Contractor (PC) (supplier) as part of the HSE Pre-Construction Information Pack.
	5	In order to ensure compliance and capture information about waste handled on site the PC must use an appropriate system to capture waste movements. This may be via an online system such as Smart Waste. Where the work is under £250,000 or it is a facilities project the 'small projects' site waste management plan must be used. See sheet 4.
	5	Where TfL is the PC information about waste handled on site can be captured in the small projects waste management plan (see sheet 4)
	5	Before any work starts on site the relevant site waste management plan must be completed.
	5	The tables on Sheet 3 RWMP Summaries must be reviewed throughout the project at key stage design, e.g. end of concept design and detailed design.
	5	The principal contractor must complete Sheet 2 Design Efficiency and return it once the project is complete and be involved with Lesson Learnt, where appropriate.



	5 and 6	Waste management data must be reported by the PC on a periodic basis through the Informatic Exchange system, as instructed by the TfL client.
<b>Guidance</b>		<p>Designers must consider the relevant industry guidance in designing out waste, specifically:  <a href="#">WRAP's Designing out Waste: a design team guide for Civil Engineering</a>  <a href="#">WRAP's Designing out Waste: a design team guide for Buildings</a></p> <p>If the WRAP "Designing out waste" tools are used, this information must be retained by the project and shared with the Principal Contractor.</p> <p>Your Environment Manager can organise and facilitate a Resource Efficiency workshop during the design stage (of significant and standard projects) to help identify where efficiencies can be made.</p>
<b>Programmes</b>		For projects or programmes where individual sites produce minimal waste and are of low cost, but where the project covers multiple sites, a high level programme, project/portfolio resource and waste management plan covering the scope of all works, rather than each individual site/item of work is developed.
<b>Facilities</b>		For compliance, all TfL Facilities projects must use the correct template to record and submit waste data:
<b>Templates</b>		<p>Sheet 2 - Design Efficiency</p> <p>Sheet 3 - RWMP Summaries</p> <p>Sheet 4 - Small Projects Waste Proforma</p>

Sheet 2 - Design Efficiency

The following question set must be considered to consider different opportunities for material use and waste minimisation.

Action No.	Aim	Question	Stage(s)	Response	To be done at Stage Number	Predicted Benefits / Estimated Cost Saving	Action Required	By Who	By When (Project stage & date)	Details of How Action Completed (Including Benefits Realised)	Guidance
1	Prevent / Reduce Materials Use	Have alternatives that would avoid the need for the development, or lessen the amount of resources used or waste generated been considered?	• Outcome Definition	Type here response for the Outcome Definition stage							
			• Option Selection	Type here response for the Option Selection stage							
			• Concept Design	Type here response for the Concept Design stage							
2	Reduce Materials Use	Can elements of the existing infrastructure or materials be re-used (rather than building from new)?	• Outcome Definition	Type here response for the Outcome Definition stage							
			• Option Selection	Type here response for the Option Selection stage							
			• Concept Design	Type here response for the Concept Design stage							
3	Prevent / Reduce Materials Use	How have you prevented or reduced the amount of materials required?	• Option Selection	Type here response for the Option Selection stage							1 – Understand the Waste Hierarchy: <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/694036/613530-waste-hierarchy-guidance.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/694036/613530-waste-hierarchy-guidance.pdf</a> This document provides guidance on what the waste hierarchy is, and how it can be applied. 2 – Consider all ways to design out waste and reduce material use: WRAP – Designing out Waste lists technical solution by <a href="http://www.wrap.org.uk/node/21343">http://www.wrap.org.uk/node/21343</a> . This website contains a number of resources and guidance for designing out waste – including a guide for civil engineering projects, and a Designing out Waste Tool. WRAP – Resource Efficiency: <a href="http://www.wrap.org.uk/">http://www.wrap.org.uk/</a> The website contains a number of resources and guidance on designing for resource efficiency and resource efficient construction. 3 – Calculate predicted benefits: WRAP – Net Waste Tool: <a href="http://www.wrap.org.uk/content/net-waste-tool-0">http://www.wrap.org.uk/content/net-waste-tool-0</a> The Net Waste Tool can be used to: • calculate potential costs and quantities of waste arising on construction projects • show you how to improve your recycled content quantity against Net Waste
			• Detailed Design	Type here response for the Detailed Design stage							
			• Delivery	Type here response for the Delivery stage							
4	Prevent / Reduce Materials Use	How have you maximised the durability of the design (to lessen the need for resources to be used for repairs etc in the future)?	• Detailed Design	Type here response for the Detailed Design stage							WRAP – Optimising durability and lifespan <a href="http://www.wrap.org.uk/node/20343">http://www.wrap.org.uk/node/20343</a> Information on how to optimise the durability and lifespan of construction products and assets
			• Concept Design	Type here response for the Concept Design stage							
			• Detailed Design	Type here response for the Detailed Design stage							
5	Maximise Re-Use of Materials & Minimise Waste	How has the cut and fill balance been optimised to reduce the quantity of excavated material taken off site?	• Concept Design	Type here response for the Concept Design stage							WRAP – A Design Team Guide for Civil Engineering <a href="http://www.wrap.org.uk/content/designing-out-waste-design-team-guide-civil">http://www.wrap.org.uk/content/designing-out-waste-design-team-guide-civil</a> Part 1 – Page 27 Part 2 – Page 50 (Part 1 of the Guide covers the principles of Designing out Waste, and provides a structured approach to implementing it in civil engineering Part 2 provides information on design solutions and engineering techniques which can be used to improve materials resource efficiency)
			• Detailed Design	Type here response for the Detailed Design stage							
			• Delivery	Type here response for the Delivery stage							
6	Maximise Re-Use of Materials & Minimise Waste	How have you maximised the reuse of site materials (e.g. from demolition and site clearance)?	• Concept Design	Type here response for the Concept Design stage							WRAP – A Design Team Guide for Civil Engineering <a href="http://www.wrap.org.uk/content/designing-out-waste-design-team-guide-civil">http://www.wrap.org.uk/content/designing-out-waste-design-team-guide-civil</a> Part 1 – Section 3.2 Part 2 – Pages 33-36
			• Detailed Design	Type here response for the Detailed Design stage							
			• Delivery	Type here response for the Delivery stage							
		What consideration has been	• Detailed Design	Type here response for the Detailed Design stage							Consider CLAIRE Register of Materials:







[illegible]

## **Appendix 5**

### Company's Site Noise and Vibration Evaluation and Control



## 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 3 <sup>rd</sup> 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 <a href="#">Noise Sensitivity Register</a> / <a href="#">Web GIS</a> 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		



**Schedule 17**

**Responsible Procurement**



## **Schedule 17**

### **Responsible Procurement**

#### **1 Equality, Diversity and Inclusion**

- 1.1 For the purposes of this Schedule 17 (*Responsible Procurement*), unless the context indicates otherwise, the terms set out in Appendix 1 (*Equality, Diversity and Inclusion Definitions*) to this Schedule 17 (*Responsible Procurement*) shall have the meaning set out in that appendix and the following expressions shall have the following meanings:

<b>“EDI Action Plan”</b>	means the strategic equality, diversity and inclusion action plan as negotiated and agreed by the Parties and set out in Appendix 2 ( <i>EDI Action Plan</i> ) to this Schedule 17 ( <i>Responsible Procurement</i> );
<b>“Equality Statement”</b>	means a short written statement setting out how the Supplier will embed equality, diversity and inclusion in its performance of this Contract; and
<b>“Minimum Records”</b>	means all information relating to the Supplier's performance of and compliance with this Schedule 17 ( <i>Responsible Procurement</i> ) and the adoption and implementation of an EDI Action Plan, by each Sub-Contractor and, where applicable, subject to the provisions of paragraph 1.3, indirect subcontractor, of the Supplier.

#### **EDI Policy**

- 1.2 On the Commencement Date, the Supplier shall provide the Company with a copy of its EDI Policy. The Supplier shall keep its EDI Policy under review for the duration of this Contract and shall provide the Company with any such revised EDI Policy once available.

#### **EDI Action Plan**

- 1.3 The Supplier shall comply with the agreed EDI Action Plan and for any contract that the Supplier enters into in connection with the performance of the Services which has a total value of £5 million or more shall procure that each of its Sub-Contractors:
- (a) adopts and implements; and
  - (b) uses reasonable endeavours to procure that any indirect subcontractors adopt and implement,

a strategic equality and diversity plan in respect of their respective employees engaged in the performance of the Contract which is at least as extensive in scope as that agreed with the Company and set out in the EDI Action Plan.

### **Equality Statement**

- 1.4 The Supplier shall submit to the Company and keep under review an Equality Statement setting out how it will embed equality, diversity and inclusion in the performance of this Contract.

### **Monitoring and Reporting**

- 1.5 The Supplier shall use reasonable endeavours to provide the Company within ten (10) Working Days of the first and each subsequent anniversary of the Commencement Date (or such other frequency as the Company may reasonably request) with an annual report on performance and compliance with the equality, diversity and inclusion provisions set out in paragraph 1.3 of this Schedule 17 (Responsible Procurement). The annual report shall set out:

- (a) the performance of the Supplier over the past twelve (12) months in relation to the EDI Action Plan;
- (b) employee breakdown: the proportion of its employees engaged in the performance of the Contract and to the extent reasonably possible, the proportion of the employees of its Sub-Contractors or indirect subcontractors engaged pursuant to the terms of the relevant subcontracts in the performance of the Contract who are:
  - (i) of non-white British origin or who classify themselves as being non-white British;
  - (ii) female;
  - (iii) from the local community; and
  - (iv) disabled;
- (c) expenditure breakdown: a statement broken down by activity and material type of how they have used and how much has been spent with:
  - (i) Small and Medium Enterprises;
  - (ii) BAME businesses;
  - (iii) suppliers from other under-represented or protected groups; and
  - (iv) suppliers demonstrating a diverse workforce composition.

- 1.6 Progress and approval (where due) of actions in relation to the EDI Action Plan will be monitored via the Periodic progress meetings referred to in Table 5 of Schedule 10 (*Contract*

*Management*) or as otherwise agreed between the Parties. The Supplier shall provide a written update prior to the progress meetings and should request additional meetings (if necessary) with the Company to discuss progress or seek sign-off for completed actions.

- 1.7 The Supplier shall ensure at all times that it complies with the requirements of any applicable Data Protection Legislation in the collection and reporting of the information to the Company pursuant to paragraph 1.5 of this Schedule 17 (*Responsible Procurement*).

#### **EDI Audit**

- 1.8 The Company or its nominee may from time to time undertake any audit or check of any and all information regarding the Supplier's compliance with this Schedule 17 (*Responsible Procurement*). The Company's rights pursuant to this paragraph shall include the audit of any and all documents and records of the Supplier and its Sub-Contractors and, where applicable, subject to the provisions of paragraph 1.3 of this Schedule 17 (*Responsible Procurement*), indirect subcontractors, and shall include the Minimum Records.

- 1.9 The Supplier shall maintain and retain the Minimum Records for a minimum of six (6) years from the termination or expiry of the Contract. The Supplier shall procure that each of its Sub-Contractors and, where applicable subject to the provisions of paragraph 1.3, indirect subcontractors, shall maintain and retain records equivalent to the Supplier's Minimum Records for a minimum of six (6) years from the termination or expiry of this Contract. The Supplier shall procure that:

- (a) each Sub-Contract between it and its Sub-Contractors; and
- (b) subject to the provisions of paragraph 1.3 of this Schedule 17 (*Responsible Procurement*), each subcontract between its Sub-Contractors and any indirect subcontractors of the Supplier,

shall contain rights of audit in favour of and enforceable by the Company substantially equivalent to those granted by the Supplier pursuant to this Schedule 17 (*Responsible Procurement*).

- 1.10 The Company shall use reasonable endeavours to co-ordinate its audits and to manage the number, scope, timing and method of undertaking audits so as to ensure that the Supplier and each Sub-Contractor is not, without due cause, disrupted or delayed in the performance of its obligations under the Contract and each relevant Sub-Contract.
- 1.11 The Supplier shall promptly provide, and procure that its Sub-Contractors and, where applicable subject to the provisions of paragraph 1.3 of this Schedule 17 (*Responsible Procurement*), indirect subcontractors, promptly provide all reasonable co-operation in relation to any audit or check including, to the extent reasonably possible in each particular circumstance:

- (a) granting or procuring the grant of access to any premises used in the Supplier's performance of the Contract or in its relevant Sub-Contractor or indirect subcontractor's performance of its subcontract, whether the Supplier's own premises or otherwise;
- (b) granting or procuring the grant of access to any equipment (including all computer hardware and software and databases) used (whether exclusively or non-exclusively) in the performance of the Supplier's or the relevant subcontractor or indirect subcontractor's obligations specified in paragraph 1.3 of this Schedule 17 (*Responsible Procurement*), wherever situated and whether the Supplier's own equipment or otherwise; and
- (c) complying with the Company's reasonable requests for access to senior personnel engaged in the Supplier's performance of the Contract or the relevant subcontractor or indirect subcontractor's performance of its subcontract.

### **Gender Neutral Language**

- 1.12 The Supplier shall, for the duration of the Contract, endeavour to employ gender-neutral language in all communications relating to this Contract, including but not limited to communications with job applicants, employees, apprentices, contractors, customers and members of the public. Gender-neutral language includes avoidance of male or female pronouns and male or female forms of job titles where unnecessary.

## **2 Mayor's Good Work Standard**

- 2.1 Within sixty (60) days of the Commencement Date the Supplier shall:
- (a) undertake and complete the Good Work Standard self-assessment at the following website:  
  
<https://www.london.gov.uk/what-we-do/business-and-economy/supporting-business/what-mayors-good-work-standard#acc-i-54389>; and
  - (b) submit the results of the self-assessment to the Company together with a SMART Action Plan outlining the activities the Supplier proposes to undertake in order to meet the 'Achievement' level of the Good Work Standard.
- 2.2 The Supplier will take into account any comments or recommendations made by the Company in respect of the Supplier's proposed SMART Action Plan and the Parties shall agree (or failing such agreement the Company shall determine) the final content of the SMART Action Plan within ninety (90) days of the Commencement Date.



**Appendix 1****Equality, Diversity and Inclusion Definitions**

<b>Definitions and terminology</b>	<b>Meaning</b>
Black Asian and Minority Ethnic (BAME) Groups	Ethnic groups who have a common experience of discrimination based on their skin colour or ethnic origin. Individuals may self-identify in different ways but BAME is the collective term used by the Company to describe people who may have this range of experiences.
Disability	Physical or mental impairment that has a 'substantial' and 'long-term' negative effect on a person's ability to do normal daily activities.
Diversity	Recognising, respecting and valuing a wide set of differences and understanding that an individual's opportunities are impacted by characteristics beyond those protected by legislation, e.g. class, family background, political views, union membership etc.
Equality	<p>Recognising and respecting differences, including different needs, to ensure that everyone:</p> <ul style="list-style-type: none"> <li>• can live their lives free from discrimination;</li> <li>• knows their rights will be protected; and</li> <li>• has what they need to succeed in life.</li> </ul> <p>Equality is about ensuring equality of opportunity by tackling the barriers that some groups face and making London fairer by narrowing the social and economic divides that separate people. The characteristics protected by equality legislation are age, disability, gender, gender reassignment, ethnicity, pregnancy and maternity, religion and/or belief and sexual orientation.</p>
Equality Impact Assessments (EqIA)	As a public body, the Company is bound by the Public Sector Equality Duty (PSED) under the Equality Act 2010. An EqIA is a tool used to demonstrate that the Company has met its PSED duties. Like a risk assessment process, an EqIA is a process that helps the Company to make more inclusive decisions and to make sure that the Company's programmes, policies, projects and the way the Company designs, builds and operates services works well for Company staff and customers.

Ethnicity	An individual's identification with a group sharing any or all of the following: nationality, lifestyles, religion, customs and language.
Gender	The social differences between women and men that have been learned are changeable over time and have wide variations both within and between cultures. The term is often used to differentiate from 'sex', a term referring to biological differences. It is important to note that some people consider themselves to be 'gender fluid' (someone whose sense of their gender may vary) or 'gender non-binary' (someone who does not wish to be defined as male or female).
Gay	Refers to a man who has a romantic and/or sexual orientation towards men. Also a generic term for lesbian and gay sexuality - some women define themselves as gay rather than lesbian.
Inclusion	Removing barriers and taking steps to create equality, harness diversity and produce safe, welcoming communities and cultures that encourage innovative and fresh ways of thinking and allow people to speak up, especially to suggest where things could be done better.
Inclusive Design	Creating environments which everyone can use to access and benefit from the full range of opportunities available, confidently, independently, with choice and dignity, which avoids separation or segregation and is made up of places and spaces that acknowledge diversity and difference, meeting the needs of everyone in society.
Pay gap	Difference between the average pay of two different groups of people, for example men and women, or groups from different ethnic backgrounds.
Sexual Orientation	A person's emotional, physical and/or sexual attraction, and the expression of that attraction.
Supplier Diversity	<p>Diverse suppliers are from one of the following five categories:</p> <p>1. Small and Medium Enterprises (SMEs).</p> <p>A small enterprise is a business which has both 0-49 full-time equivalent employees and either:</p> <ul style="list-style-type: none"> <li>• turnover per annum of no more than £5.6 million net (or £6.72 million gross) in the last financial year; or</li> <li>• balance sheet total of no more than £2.8 million net (£3.36 million gross).</li> </ul>

	<p>A medium enterprise is a business which has both 50-249 full-time equivalent employees and either;</p> <ul style="list-style-type: none"> <li>• turnover per annum of no more than £22.8 million net (or £27.36 million gross) in the last financial year; or</li> <li>• balance sheet total of no more than £11.4 million net (or £13.68 million gross).</li> </ul> <p>2. A minority-led business is a business which is 51% or more owned by members of one or more BAME groups. Minority ethnic groups are all people including those who have classified themselves as members of ethnic groups other than 'white British'. The minority ethnic classification groups used by The Company for monitoring purposes are those taken from the census:</p> <table border="1"> <thead> <tr> <th data-bbox="526 887 756 958">Ethnic group</th><th data-bbox="756 887 1382 958">Racial Origin</th></tr> </thead> <tbody> <tr> <td data-bbox="526 958 756 1106">White British</td><td data-bbox="756 958 1382 1106">Irish  Any other White background</td></tr> <tr> <td data-bbox="526 1106 756 1397">Mixed</td><td data-bbox="756 1106 1382 1397">White &amp; Black Caribbean  White &amp; Black African  White &amp; Asian  Any other Mixed background</td></tr> <tr> <td data-bbox="526 1397 756 1688">Asian or Asian British</td><td data-bbox="756 1397 1382 1688">Indian  Pakistani  Bangladeshi  Any other Asian background</td></tr> <tr> <td data-bbox="526 1688 756 1912">Black or Black British</td><td data-bbox="756 1688 1382 1912">Caribbean  African  Any other Black background</td></tr> <tr> <td data-bbox="526 1912 756 2020">Chinese or other Ethnic Group</td><td data-bbox="756 1912 1382 2020">Chinese</td></tr> </tbody> </table>	Ethnic group	Racial Origin	White British	Irish  Any other White background	Mixed	White & Black Caribbean  White & Black African  White & Asian  Any other Mixed background	Asian or Asian British	Indian  Pakistani  Bangladeshi  Any other Asian background	Black or Black British	Caribbean  African  Any other Black background	Chinese or other Ethnic Group	Chinese
Ethnic group	Racial Origin												
White British	Irish  Any other White background												
Mixed	White & Black Caribbean  White & Black African  White & Asian  Any other Mixed background												
Asian or Asian British	Indian  Pakistani  Bangladeshi  Any other Asian background												
Black or Black British	Caribbean  African  Any other Black background												
Chinese or other Ethnic Group	Chinese												

	<table border="1" data-bbox="528 194 1385 271"> <tr> <td data-bbox="528 194 756 271"></td><td data-bbox="756 194 1385 271">Any other ethnic group</td></tr> </table> <p>3. A supplier from an under-represented group which is 51% or more owned by members of one or more of the following groups (where not covered by previous definitions):</p> <ul style="list-style-type: none"> <li>• women;</li> <li>• disabled people;</li> <li>• lesbians, gay men, bisexual people;</li> <li>• trans people;</li> <li>• older people (aged 60 or over); and</li> <li>• younger people (aged 24 or under).</li> </ul> <p>4. A supplier from a protected group is one which is 51% or more owned by members of a group for which protection is provided by anti-discriminatory legislation and which is not already covered by the above (such as religious, faith or belief groups or alternatively, ownership by a social enterprise or a voluntary/community organisation).</p> <p>5. Suppliers demonstrating a diverse workforce composition are those with full time equivalent employees in the supplier's workforce who may be from one or more minority ethnic groups, and/or under-represented groups and/or protected groups as listed above.</p>		Any other ethnic group
	Any other ethnic group		
Trans or transgender	Current terminology for people who do not want to live as the sex they were assigned at birth.		
Young adults, children and young people	<p>Young adults are people aged 16 to 24, whether in education or employment.</p> <p>Children and young people can be further subdivided into:</p> <p>i) Young children – those that use the transport network escorted by parents or carers.</p>		



	ii) School children – those, usually aged between 11-16 at secondary school, that use the transport network independently or with members of their peer group.
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### **Appendix 3**

#### **ETI Base Code**

#### **1 Employment Is Freely Chosen**

- 1.1 There is no forced, bonded or involuntary prison labour.
- 1.2 Workers are not required to lodge "deposits" or their identity papers with their employer and are free to leave their employer after reasonable notice.

#### **2 Freedom Of Association and The Right to Collective Bargaining Are Respected**

- 2.1 Workers, without distinction, have the right to join or form trade unions of their own choosing and to bargain collectively.
- 2.2 The employer adopts an open attitude towards the activities of trade unions and their organisational activities.
- 2.3 Workers representatives are not discriminated against and have access to carry out their representative functions in the workplace.
- 2.4 Where the right to freedom of association and collective bargaining is restricted under law, the employer facilitates, and does not hinder, the development of parallel means for independent and free association and bargaining.

#### **3 Working Conditions Are Safe and Hygienic**

- 3.1 A safe and hygienic working environment shall be provided, bearing in mind the prevailing knowledge of the industry and of any specific hazards. Adequate steps shall be taken to prevent accidents and injury to health arising out of, associated with, or occurring in the course of work, by minimising, so far as is reasonably practicable, the causes of hazards inherent in the working environment.
- 3.2 Workers shall receive regular and recorded health and safety training, and such training shall be repeated for new or reassigned workers.
- 3.3 Access to clean toilet facilities and to potable water, and, if appropriate, sanitary facilities for food storage shall be provided.
- 3.4 Accommodation, where provided, shall be clean, safe, and meet the basic needs of the workers.
- 3.5 The company observing the code shall assign responsibility for health and safety to a senior management representative.

#### **4 Child Labour Shall Not Be Used**

- 4.1 There shall be no new recruitment of child labour.
- 4.2 Companies shall develop or participate in and contribute to policies and programmes which provide for the transition of any child found to be performing child labour to enable her or him to attend and remain in quality education until no longer a child.
- 4.3 Children and young persons under 18 shall not be employed at night or in hazardous conditions.
- 4.4 These policies and procedures shall conform to the provisions of the relevant ILO standards.

## **5 Living Wages Are Paid**

- 5.1 Wages and benefits paid for a standard working week meet, at a minimum, national legal standards or industry benchmark standards, whichever is higher. In any event wages should always be enough to meet basic needs and to provide some discretionary income.
- 5.2 All workers shall be provided with written and understandable Information about their employment conditions in respect to wages before they enter employment and about the particulars of their wages for the pay period concerned each time that they are paid.
- 5.3 Deductions from wages as a disciplinary measure shall not be permitted nor shall any deductions from wages not provided for by national law be permitted without the expressed permission of the worker concerned. All disciplinary measures should be recorded.

## **6 Working Hours Are Not Excessive**

- 6.1 Working hours comply with at least UK national laws and benchmark industry standards, whichever affords greater protection.
- 6.2 In any event, workers shall not on a regular basis be required to work in excess of 48 hours per week and shall be provided with at least one day off for every 7 day period on average. Overtime shall be voluntary, shall not exceed 12 hours per week, shall not be demanded on a regular basis and shall always be compensated at a premium rate.

## **7 No Discrimination Is Practised**

- 7.1 There is no discrimination in hiring, compensation, access to training, promotion, termination or retirement based on race, caste, national origin, religion, age, disability, gender, marital status, sexual orientation, union membership or political affiliation.

## **8 Regular Employment Is Provided**

- 8.1 To every extent possible work performed must be on the basis of recognised employment relationship established through national law and practice.
- 8.2 Obligations to employees under labour or social security laws and regulations arising from the regular employment relationship shall not be avoided through the use of labour-only

contracting, sub- contracting, or home-working arrangements, or through apprenticeship schemes where there is no real intent to impart skills or provide regular employment, nor shall any such obligations be avoided through the excessive use of fixed-term contracts of employment.

## **9 No Harsh or Inhumane Treatment Is Allowed**

- 9.1 Physical abuse or discipline, the threat of physical abuse, sexual or other harassment and verbal abuse or other forms of intimidation shall be prohibited.

## **10 Note on the Provisions of the ETI Base Code**

- 10.1 The provisions of the ETI Base Code constitute minimum and not maximum standards, and this code should not be used to prevent companies from exceeding these standards. Companies applying this ETI Base Code are expected to comply with national and other applicable law and, where the provisions of law and this ETI Base Code address the same subject, to apply that provision which affords the greater protection.

## **11 Definitions**

- 11.1 In this Appendix 3 to Schedule 17 (Responsible Procurement):

**“Child”** shall mean any person less than 15 years of age unless local minimum age law stipulates a higher age for work or mandatory schooling, in which case the higher age shall apply. If, however, local minimum age law is set at 14 years of age in accordance with developing country exceptions under ILO Convention No. 11, the lower will apply.

**“Young person”** shall mean any worker over the age of a child as defined above and under the age of 18.

**“Child labour”** shall mean any work by a child or young person younger than the age(s) specified in the above definitions, which does not comply with the provisions of the relevant ILO standards, and any work that is likely to be hazardous or to interfere with the child's or young person's education, or to be harmful to the child's or young person's health or physical, mental, spiritual, moral or social development.

**Schedule 18**

*Performance Measurement*

**Schedule 18****Performance Measurement****Schedule 18a****Performance Measurement Mechanism****1. Definitions**

**“Abatement”** means the amount deducted from the Fee due to the Supplier in accordance with this Contract, as calculated in accordance with Schedule 18d (*Payment Abatement*).

**“Abating KPIs”** means the KPIs designated as being subject to Abatement in accordance with paragraph 2.2 of Schedule 18d (*Payment Abatement*) as set out in Schedule 18b (*Performance Measurement Matrix*).

**“Additional Works Clearance Times”** means the times set out in paragraph 2 of Schedule 18e (*Additional Works Clearance Times*) as may be amended where the Company agrees to an SLA Extension in accordance with the AMS Supplier Processes as set out in Appendix K (AMS Supplier Processes) to the Specification.

**“Breached Fault”** has the meaning given to it in paragraph 5 of the Specification.

**“Breached Planned Preventative Maintenance Work Order”** has the meaning given to it in paragraph 5 of the Specification.

**“Clearance Time”** means the applicable time set out in the final column of the table in Appendix 1 (*Reactive Maintenance and Isolation Services Clearance Times*) to Schedule 18c (*Key Performance Indicators (KPIs)*) as may be amended where the Company agrees to an SLA Extension in accordance with the AMS Supplier Processes as set out in Appendix K (AMS Supplier Processes) to the Specification.

**“Cumulative Scorecard”** means a report to be produced at the end of each Period illustrating the cumulative performance by the Supplier against KPIs during the year to date, in the form set out in Appendix 2 to this Schedule 18a (*Performance Measurement Mechanism*).

**“Escalation Procedure”** means the procedure set out at paragraph 4 of this Schedule 18a (*Performance Measurement Mechanism*).

**“Equipment Register”** has the meaning given to it in paragraph 5 of the Specification and **“ER”** shall be construed accordingly.

**“Interim Rectification”** has the meaning given to it in paragraph 5 of the Specification.

**“Key Performance Indicator”** or **“KPI”** means any or all, as the case may be, of the indicators set out in the column headed “Key Performance Indicator (KPI)” in Schedule 18b (*Performance Measurement Matrix*).

[REDACTED]

**“Level 1 Non-Conformance”** means a Non-Conformance identified in the relevant line of Table 1 in paragraph 4.8 of this Schedule 18a (*Performance Measurement Mechanism*).





“Level 1 Non-Conformance Notice” means a notice to be issued by the Company in the form set out in Appendix 3 to this Schedule 18a (*Performance Measurement Mechanism*).

“Level 1 Rectification Period” has the meaning given to it in paragraph 4.10(b)(i) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 1 Required Action” has the meaning given to it in paragraph 4.10(b)(ii) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 2 and 3 Non-Conformance Notice” means a notice to be issued by the Company in the form set out in Appendix 4 to this Schedule 18a (*Performance Measurement Mechanism*).

“Level 2 Non-Conformance” means a Non-Conformance identified in the relevant line of Table 1 in paragraph 4.8 of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 2 Non-Conformance Recovery Plan” has the meaning given to it in paragraph 4.11(b) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 2 Rectification Period” has the meaning given to it in paragraph 4.11(c)(i) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 2 Required Action” has the meaning given to it in paragraph 4.11(c)(ii) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 3 Non-Conformance” means a Non-Conformance identified in the relevant line of Table 1 in paragraph 4.8 of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 3 Non-Conformance Recovery Plan” has the meaning given to it in paragraph 4.12.b) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 3 Rectification Period” has the meaning given to it in paragraph 4.12.c)(i) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 3 Required Action” has the meaning given to it in paragraph 4.12.c)(ii) of this Schedule 18a (*Performance Measurement Mechanism*).

“Level 4 Non-Conformance” means a Non-Conformance identified in the relevant line of Table 1 in paragraph 4.8 of this Schedule 18a (*Performance Measurement Mechanism*).

“Maintenance Activity Record Submission” has the meaning given to it in paragraph 5 of the Specification.

“Non-Conformances” has the meaning given to it in paragraph 4.2 (*Escalation Procedure*) of this Schedule 18a (*Performance Measurement Mechanism*) and shall include levels of poor performance or breach relating to each Non-Conformance Level as applicable.

“Non-Conformance Levels” means, as applicable, each of Level 1 Non-Conformance, Level 2 Non-Conformance, Level 3 Non-Conformance and Level 4 Non-Conformance.

“Non-Conformance Meeting” means the meeting to be held between the Parties within five (5) Working Days of submission of a Recovery Plan.



“Period Performance Scorecard” means a report to be produced at the end of each Period in accordance with paragraph 3.1 of this Schedule 18a (*Performance Measurement Mechanism*), in the form set out in Appendix 1 to this Schedule 18a (*Performance Measurement Mechanism*).

“Permanent Rectification” has the meaning given to it in paragraph 5 of the Specification.

“QUENSH Inspection” has the meaning given to it in paragraph 5 of the Specification.

“QUENSH Work Order” has the meaning given to it in paragraph 5 of the Specification.

“Rectification Period” means, as applicable, a Level 1 Rectification Period, Level 2 Rectification Period or a Level 3 Rectification Period.

“Recovery Plan” means a plan to be provided by the Supplier upon request by the Company in the event that a performance issue has been raised to the Escalation Procedure in a form similar to that set out in Appendix 5 to this Schedule 18a (*Performance Measurement Mechanism*) setting out how the Supplier will address such non-performance.

“Root Cause Analysis” means the analysis to be provided by the Supplier upon request by the Company in the event that a performance issue has been raised to the Escalation Procedure in a form similar to that at Appendix 6 to this Schedule 18a (*Performance Measurement Mechanism*) setting out the Supplier’s analysis of the root cause of the Non-Conformance in question.

“Same Type Non-Conformance” means, in respect of any Non-Conformance Level, a Non-Conformance which relates to the same type of non-compliance or poor performance in respect of which that Non-Conformance Level was triggered, in accordance with Table 1 at paragraph 4.8 of this Schedule 18a (*Performance Measurement Mechanism*).

“SLA Extension” has the meaning given to it in paragraph 5 of the Specification.

“TfL Period Progress Meeting” means the meeting which is held each Period and during which any Level 1 Non-Conformances, Level 2 Non-Conformances and/or Level 3 Non-Conformances are reviewed.

## **2. Overview**

- 2.1. This Schedule 18 (*Performance Measurement*) comprises the performance measurement mechanism (“**PMM**”) applicable to the Services, in order to incentivise the Supplier to deliver the Services in accordance with the requirements of the Contract and to provide the Company with a remedy where the Supplier fails to do so.
- 2.2. The PMM set out in this Schedule 18 (*Performance Measurement*) shall, subject to paragraph 5 (*Exclusions*), come into effect on the Services Commencement Date and shall be applicable to the whole of the Services, including (where relevant) any Additional Works.
- 2.3. The PMM comprises and incorporates:
  - a) Schedule 18b (*Performance Measurement Matrix*) which sets out the Abating KPIs and the applicable Abatement being levied by the Company in respect of



each such KPI in the event of the Supplier's performance being assessed to be either "Below Requirements" or "Unsatisfactory" in relation to that KPI;

- b) Schedule 18c (*Key Performance Indicators (KPIs)*) which sets out the details as to how the KPIs are to be measured, the frequency and methodology of monitoring performance and the performance levels required; and
  - c) Schedule 18d (*Payment Abatement*) which sets out the method for calculating Abatements.
- 2.4. In respect of each KPI, a failure by the Supplier to meet the level of performance which corresponds to "Level 1 – Meets Requirements" as set out in Schedule 18c (*Key Performance Indicators (KPIs)*) shall entitle the Company to levy an Abatement and/or to enact the Escalation Procedure (at the Company's discretion). For the avoidance of doubt, in relation to a KPI which is subject to both the Escalation Procedure and Abatements, these processes may be carried out in parallel.
- 2.5. The provisions of Schedule 18d (*Payment Abatement*) and paragraph 4 (*Escalation Procedure*) of this Schedule 18a (*Performance Measurement Mechanism*) set out the remedy that the Company is entitled to and the circumstances in which the Company is entitled to that remedy.
- 2.6. At the end of each Period, the Company shall calculate the value of any Abatement in accordance with paragraph 2 of Schedule 18d (*Payment Abatement*). The Company may deduct any Abatement arising in respect of that Period (or any previous Period to the extent that a deduction has not previously been made) from the Fee due to the Supplier in respect of that Period in accordance with this Contract.

### **3. Reports**

#### **3.1. Period Performance Scorecard**

A Period Performance Scorecard shall be produced by the Company at the end of each Period, incorporating an analysis of the performance levels (as set out in respect of each KPI in Schedule 18c (*Key Performance Indicators (KPIs)*)) achieved by the Supplier in respect of each of the KPIs during the Period.

#### **3.2. Cumulative Scorecard**

A Cumulative Scorecard shall be produced by the Company at the end of each Period containing a summary of KPIs calculated for each Period up to and including that Period being reported in the Period Performance Scorecard in accordance with Schedule 18c (*Key Performance Indicators (KPIs)*).

#### **3.3. Assessment of KPIs**

- a) The KPIs shall be assessed by the Company in accordance with Schedule 18c (*Key Performance Indicators (KPIs)*), including the frequency and KPI monitoring method in each case as applicable to the relevant KPI.
- b) Each KPI shall be assessed in accordance with the performance levels applicable to it and may be escalated by the Company pursuant to paragraph 4 (*Escalation Procedure*) of this Schedule 18a (*Performance Measurement Mechanism*).

### **4. Escalation Procedure**



4.1. In the event:

- a) that any of the KPIs are assessed as achieving performance levels scores which correspond to:
  - i. “Below Requirements” for two or more consecutive Periods; or
  - ii. “Unsatisfactory” for one or more consecutive Periods,
 in each case as applicable to that KPI as set out in Schedule 18c (*Key Performance Indicators (KPIs)*) and as set out in the Period Performance Scorecard; or
- b) of any breach by the Supplier of its obligations under the Contract,

the Escalation Procedure may be invoked by the Company and the Company shall be entitled to do so in its absolute discretion.

- 4.2. The purpose of the Escalation Procedure is to provide a structured framework within which the Parties can address poor performance of the Services against the KPIs or any breach by the Supplier. For the purposes of the Escalation Procedure, notified levels of poor performance or breach will be termed “**Non-Conformances**”. Table 1 at paragraph 4.8 of this Schedule 18a (*Performance Measurement Mechanism*) sets out the relevant levels of poor performance or breach which shall trigger a Non-Conformance, the Non-Conformance Level applicable to such Non-Conformance, and associated consequences and required actions as a result of such Non-Conformance.
- 4.3. The Escalation Procedure operates by reference to the Non-Conformance Levels, with the lowest Non-Conformance Level being a Level 1 Non-Conformance.
- 4.4. In respect of each level of Non-Conformance, the Supplier shall provide the Company with its Recovery Plan within five (5) Working Days of such Non-Conformance arising. The Parties shall meet within five (5) Working Days from the submission of the Recovery Plan to review such plan and agree and resolve the relevant issues.
- 4.5. Where Non-Conformances are escalated, each Party shall ensure that such matters receive an appropriate level of management intervention (including appropriate personnel attending associated meetings) from the Company and the Supplier.
- 4.6. The Parties shall review any Level 2 Non-Conformance and the Supplier shall have the opportunity to carry out remedial actions to resolve the relevant issues before the Non-Conformance becomes a Level 3 Non-Conformance or a Level 4 Non-Conformance. Where a Level 4 Non-Conformance arises, the Company is entitled to terminate the Contract in whole or in part in accordance with Clause 43 (*Termination on Supplier Default*).
- 4.7. A Non-Conformance must either start the Escalation Procedure as a Level 1 Non-Conformance or a Level 2 Non-Conformance.
- 4.8. Table 1 sets out a summary of the Escalation Procedure and the roles and responsibilities within the procedure for each Non-Conformance Level.



**Table 1 – Summary of Escalation Procedure**

TRIGGER	NON-CONFORMANCE LEVEL	ACTION	OWNERS	RESULT
<p>A KPI being assessed as “Below requirements” as determined in the Period Performance Scorecards for two or more consecutive Periods</p> <p>or</p> <p>“Unsatisfactory” as determined in the Period Performance Scorecards for one or more consecutive Periods</p> <p>or</p> <p>the Supplier being in breach of any term of this Contract and the Company determining (in its absolute discretion) that such breach shall be treated as a Level 1 Non-Conformance</p>	Level 1 Non-Conformance	<p>Recovery Plan (including Root Cause Analysis) to be developed by the Supplier within five (5) Working Days of the Non Conformance arising with precise end date required &amp; Non Conformance Meeting held within five (5) Working Days after submission of Recovery Plan.</p> <p>Supplier has four (4) weeks to implement the Recovery Plan.</p>	<p>Action to be issued to the Supplier’s Representative (or their delegate)</p> <p>Action to be issued by the Company’s Representative (or their delegate)</p>	<p>Satisfactory – Non-Conformance ends</p> <p>Unsatisfactory - Non-Conformance escalated to Level 2 Non-Conformance</p>





TRIGGER	NON-CONFORMANCE LEVEL	ACTION	OWNERS	RESULT
<p>Level 1 Non-Conformance re-occurrence (two (2) or more occurrences)</p> <p>or</p> <p>Persistent re-occurrence (two (2) or more occurrences) of any KPI failure over three (3) or more periods</p> <p>or</p> <p>Safety Condition infringements</p> <p>or</p> <p>the Supplier being in breach of any term of this Contract and the Company determining (in its absolute discretion) that such breach shall be treated as a Level 2 Non-Conformance</p>	Level 2 Non-Conformance	<p>Recovery Plan (including Root Cause Analysis) to be developed by the Supplier within five (5) Working Days of the Non Conformance arising with precise end date required &amp; Non Conformance Meeting held within ten (10) Working Days after submission of Recovery Plan.</p> <p>Supplier has four (4) weeks to implement the Recovery Plan.</p>	<p>Action to be issued to the Supplier's Representative (or their delegate)</p> <p>Action to be issued by the Company's Representative (or their delegate)</p>	<p>Satisfactory – Non-Conformance ends</p> <p>Unsatisfactory – Non-Conformance escalated to Level 3 Non-Conformance</p>



TRIGGER	NON-CONFORMANCE LEVEL	ACTION	OWNERS	RESULT
<p>Level 2 Non-Conformance re-occurrence (two (2) or more occurrences)</p> <p>or</p> <p>the Supplier failing to remedy any breach of this Contract that has been treated as a Level 1 Non-Conformance or a Level 2 Non-Conformance and the Company determining (in its absolute discretion) that such continuing breach shall be treated as a Level 3 Non-Conformance</p>	Level 3 Non-Conformance	<p>Recovery Plan (including Root Cause Analysis) to be developed by the Supplier within five (5) Working Days of the Non-Conformance arising with precise end date required &amp; Non-Conformance Meeting held within ten (10) Working Days after submission of Recovery Plan.</p> <p>Supplier has four (4) weeks to implement the Recovery Plan.</p>	<p>Action to be issued to a director of the Supplier</p> <p>Action to be issued by a director of the Company (or their delegate)</p>	<p>Satisfactory - Non-Conformance ends</p> <p>Unsatisfactory - Non-Conformance escalated to Level 4 Non-Conformance</p>



TRIGGER	NON-CONFORMANCE LEVEL	ACTION	OWNERS	RESULT
Level 3 Non-Conformance re-occurrence (two (2) or more occurrences)  or  the Supplier failing to remedy any breach of this Contract that has been treated as a Level 3 Non-Conformance and the Company determining (in its absolute discretion) that such continuing breach shall be treated as a Level 4 Non-Conformance	Level 4 Non-Conformance	Termination of the Contract in whole or in part at Company's discretion pursuant to Clause 43 (Termination on Supplier Default).	Action to be issued by a director of the Company	Contract termination

4.9. As part of the Escalation Procedure and at any Non-Conformance Level, the Supplier shall supply a Recovery Plan (including a Root Cause Analysis) at its own cost.

4.10. **Level 1 Non-Conformance**

- a) As soon as reasonably practicable after the Company becomes aware of the occurrence of a Level 1 Non-Conformance, the Company shall notify the Supplier of such by issuing to the Supplier a Level 1 Non-Conformance Notice and the Level 1 Non-Conformance will be recorded by the Company. The Supplier shall, within five (5) Working Days of service of the Level 1 Non-Conformance Notice by the Company, prepare and submit to the Company its Recovery Plan (including Root Cause Analysis) required to rectify the issue. Such Recovery Plan shall set out:
  - i. confirmation of the date and details of the Level 1 Non-Conformance;
  - ii. the steps to be taken by the Supplier to ensure there is no re-occurrence of such Level 1 Non-Conformance (the "**Proposed Level 1 Required Action**"); and



- iii. the time within which such Level 1 Required Action is to be completed by the Supplier (which shall be within four (4) weeks) of the date on which such Level 1 Non-Conformance has arisen (the “**Proposed Level 1 Rectification Period**”).
- b) The Supplier and the Company shall, within five (5) Working Days of submission of the Recovery Plan by the Supplier, meet and use all reasonable endeavours to agree the details set out in the Recovery Plan and:
  - i. the Proposed Level 1 Rectification Period shall, subject to any changes agreed between the Parties pursuant to this paragraph, become the “**Level 1 Rectification Period**” (provided that in the event that the Supplier and the Company fail to agree the Level 1 Rectification Period, the Company shall be entitled to determine the Level 1 Rectification Period); and
  - ii. the Proposed Level 1 Required Action shall, subject to any changes agreed between the Parties pursuant to this paragraph, become the “**Level 1 Required Action**” (provided that in the event that the Supplier and the Company fail to agree the Level 1 Required Action, the Company shall be entitled to determine the Level 1 Required Action).
- c) If the agreed Level 1 Required Action is carried out by the Supplier (to the Company's reasonable satisfaction) within the agreed Level 1 Rectification Period, the Level 1 Non-Conformance will be classed as resolved.
- d) All Level 1 Non-Conformances shall be reviewed at each TfL Period Progress Meeting (whether resolved or not) to ensure that any re-occurrence is (where possible) prevented.

#### 4.11. Level 2 Non-Conformance

- a) Paragraph 4.11(b) shall apply where:
  - i. a Non-Conformance is a Level 2 Non-Conformance (which shall be determined by the Company at its absolute discretion); or
  - ii. the Supplier fails to make available to the Company a Level 1 Non-Conformance Recovery Plan within five (5) Working Days of service by the Company of the notice referred to in paragraph 4.11.b); or
  - iii. the Supplier fails to undertake the Level 1 Required Action within the Level 1 Rectification Period; or
  - iv. having undertaken the Level 1 Required Action, the Supplier fails to rectify the Level 1 Non-Conformance within the Level 1 Rectification Period; or
  - v. a Same Type Non-Conformance occurs within two (2) Periods of the end of the Level 1 Rectification Period; or
  - vi. the Supplier wilfully permits the occurrence of a Same Type Non-Conformance during the Level 1 Rectification Period; or
  - vii. the Supplier fails to meet the requirements of Schedule 16 (*Health, Safety, Quality and Environmental Requirements*).
- b) Where one or more of the circumstances described in paragraph 4.11(a) applies, this shall be a Level 2 Non-Conformance and the Company may



issue a Level 2 and 3 Non-Conformance Notice to the Supplier. Within five (5) Working Days of service by the Company of the Level 2 and 3 Non-Conformance Notice, the Supplier shall provide to the Company its Recovery Plan (including Root Cause Analysis) to the extent not provided by the Supplier previously)) setting out the Supplier's proposal (acting reasonably) in respect of the following:

- i. the steps it will take to ensure there is no re-occurrence of such Level 2 Non-Conformance (the "**Proposed Level 2 Required Action**"); and
- ii. the time within which the Supplier shall complete such Level 2 Required Action (which shall be no longer than four (4) weeks from the date on which the Level 2 and 3 Non-Conformance Notice is served by the Company) (the "**Proposed Level 2 Rectification Period**"),

in respect of each such Level 2 Non-Conformance (each a "**Level 2 Non-Conformance Recovery Plan**").

- c) Within ten (10) Working Days of receipt by the Company of a Level 2 Non-Conformance Recovery Plan, the Supplier and the Company shall meet and use all reasonable endeavours to agree the details set out in the Level 2 Non-Conformance Recovery Plan and:
  - i. the Proposed Level 2 Rectification Period shall, subject to any changes agreed between the Parties pursuant to this paragraph, become the "**Level 2 Rectification Period**" (provided that in the event that the Supplier and the Company fail to agree the Level 2 Rectification Period, the Company shall be entitled to determine the Level 2 Rectification Period); and
  - ii. the Proposed Level 2 Required Action shall, subject to any changes agreed between the Parties pursuant to this paragraph, become the "**Level 2 Required Action**". (provided that in the event that the Supplier and the Company fail to agree the Level 2 Required Action, the Company shall be entitled to determine the Level 2 Required Action).
- d) If the agreed Level 2 Required Action is carried out by the Supplier within the Level 2 Rectification Period, the Level 2 Non-Conformance will be classed as resolved.
- e) All Level 2 Non-Conformances shall be reviewed every Period at the TfL Period Progress Meeting (whether resolved or not) to ensure that any re-occurrence is (where possible) prevented.

#### 4.12. **Level 3 Non-Conformance**

- a) Paragraph 4.12.b) shall apply where:
  - i. a Non-Conformance is a Level 3 Non-Conformance (which shall be determined at the Company's absolute discretion); or
  - ii. the Supplier fails to make available to the Company a Level 2 Non-Conformance Recovery Plan within five (5) Working Days of service by the Company of the notice referred to in paragraph 4.11.b); or





- iii. the Supplier fails to undertake the Level 2 Required Action within the Level 2 Rectification Period; or
  - iv. having undertaken the Level 2 Required Action, the Supplier fails to rectify the Level 2 Non-Conformance within the Level 2 Rectification Period; or
  - v. a Same Type Non-Conformance occurs within two (2) Periods of the end of the Level 2 Rectification Period; or
  - vi. the Supplier wilfully permits the occurrence of a Same Type Non-Conformance during the Level 2 Rectification Period.
- b) Where one or more of the circumstances described in paragraph 4.12.a) applies, this shall be a Level 3 Non-Conformance and the Company may issue a Level 2 and 3 Non-Conformance Notice to the Supplier. Within five (5) Working Days of service by the Company of the Level 2 and 3 Non-Conformance Notice, the Supplier shall provide to the Company its Recovery Plan (including Root Cause Analysis (to the extent not provided by the Supplier previously)) setting out the Supplier's proposal (acting reasonably) in respect of the following:
  - i. the steps it will take to ensure that there is no re-occurrence of such Level 3 Non-Conformance (the "**Proposed Level 3 Required Action**"); and
  - ii. the time within which the Supplier shall complete such Proposed Level 2 Required Action (the "**Level 3 Rectification Period**"),

in respect of each such Level 3 Non-Conformance (each a "**Level 3 Non-Conformance Recovery Plan**").
- c) Within ten (10) Working Days of receipt by the Company of a Level 3 Non-Conformance Recovery Plan, the Supplier and the Company shall use all reasonable endeavours to agree the details set out in the Level 3 Non-Conformance Report and:
  - i. the Proposed Level 3 Rectification Period shall, subject to any changes agreed between the Parties pursuant to this paragraph, become the "**Level 3 Rectification Period**" (provided that in the event that the Supplier and the Company fail to agree the Level 3 Rectification Period, the Company shall be entitled to determine the Level 3 Rectification Period); and
  - ii. the Proposed Level 3 Required Action shall, subject to any changes agreed between the Parties pursuant to this paragraph, become the "**Level 3 Required Action**" (provided that in the event that the Supplier and the Company fail to agree the Level 3 Required Action, the Company shall be entitled to determine the Level 3 Required Action).
- d) If the agreed Level 3 Required Action is carried out by the Supplier within the Level 3 Rectification Period, the Level 3 Non-Conformance will be classed as resolved.
- e) All Level 3 Non-Conformances shall be reviewed every Period at the TfL Period Progress Meeting (whether resolved or not) to ensure that any re-occurrence is (where possible) prevented.



#### 4.13. Level 4 Non-Conformance

- a) Paragraph 4.13.b) shall apply where:
  - i. the Company determines that the Level 1, Level 2 or Level 3 Non-Conformance should be treated as a Level 4 Non-Conformance (to be determined at the Company's absolute discretion); or
  - ii. the Supplier fails to make available to the Company a Level 3 Non-Conformance Recovery Plan within five (5) Working Days of service by the Company of the notice referred to in paragraph 4.12.b); or
  - iii. the Supplier fails to undertake the Level 3 Required Action within the Level 3 Rectification Period; or
  - iv. having undertaken the Level 3 Required Action, the Supplier fails to rectify the Level 3 Non-Conformance within the Level 3 Rectification Period; or
  - v. a Same Type Non-Conformance occurs within two (2) Periods of the end of the Level 3 Rectification Period; or
  - vi. a further Non-Conformance occurs during the Level 3 Rectification Period that is of the Same Type as the Level 3 Non-Conformance and the Supplier has wilfully permitted the occurrence of such further Non-Conformance.
- b) Where one or more of the circumstances described in paragraph 4.13(a) applies, this shall be a Level 4 Non-Conformance and the Company shall be entitled to terminate the Contract in whole or in part in accordance with Clause 43 (Termination on Supplier Default).

#### 5. Exclusions

- 5.1. Details of any exclusions from this Schedule 18a (*Performance Measurement Mechanism*) for particular KPIs are detailed in Schedule 18b (*Performance Measurement Matrix*).
- 5.2. The Company shall not be entitled to levy any Abatement in respect of any KPI, during the first three (3) Periods following the Services Commencement Date.
- 5.3. The Escalation Procedure triggered by poor performance of KPIs shall not be applicable during the first three (3) Periods following the Services Commencement Date.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



**Appendix 1 to Schedule 18a***Period Performance Scorecard Template*

<b>Period Performance Scorecard for Period X</b>		
<b>KPI no</b>	<b>Scope KPI</b>	<b>Score</b>
1A	Planned Preventative Maintenance – completion of Planned Preventative Maintenance Work Orders in accordance with the Planned Preventative Maintenance Schedule	
1B	Planned Preventative Maintenance – completion of Breached Planned Preventative Maintenance Work Orders	
1C	Planned Preventative Maintenance or Enhanced Maintenance - Maintenance Activity Record Submission	
2A	Reactive Maintenance – response times for priority 1 Reactive Maintenance Work Orders	
2B	Reactive Maintenance –Interim Rectification for priority 1 Reactive Maintenance Work Orders	
2C	Reactive Maintenance – Permanent Rectification for priority 1 Reactive Maintenance Work Orders	
2D	Reactive Maintenance – Permanent Rectification for priority 2, 3 and 4 Reactive Maintenance Work Orders	
2E	Reactive Maintenance – Quantity of Breached Faults	
3	Equipment Register	
4	Health, Safety, Environmental – Number of non-compliances attributed to a failure to meet the requirements of Part A (Health and Safety) and Part C (Environmental) of Schedule 16 (Health, Safety, Quality and Environmental Requirements)	
5	Quality of work and technical compliance - Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works completed in accordance with the Specification	
6	Accuracy of the Payment Application	
7	Performance to the AMP	
8	Additional Works – completion of Additional Works Work Orders	
9	FRACAS data completeness - The proportion of records that hold an accurate FRACAS failure information recorded on AMS by the Supplier which comply with the requirements of paragraph 9.1.17 of the Specification	
10	Audit of the Supplier's management processes and procedures to deliver their obligations under Part A (Health and Safety), Part	



	B (Quality) and Part C (Environmental) of Schedule 16 (Health, Safety, Quality and Environmental Requirements)	
11	Management of incident reporting and investigation using the Company's incident management system (Information Exchange 2 – IE2)	



**Appendix 2 to Schedule 18a**

**Cumulative Scorecard Example**

<b>Cumulative Scorecard for Period X</b>													
<b>KPI</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>	<b>P7</b>	<b>P8</b>	<b>P9</b>	<b>P10</b>	<b>P11</b>	<b>P12</b>	<b>P13</b>
1A													
1B													
1C													
2A													
2B													
2C													
2D													
2E													
3													
4													
5													
6													
7													
8													
9													
10													
11													





**Appendix 3 to Schedule 18a****Level 1 Non-Conformance Notice Template**

<b>Level 1 Non-Conformance Notice</b>	
Notice Number	[Insert number]
Key Performance Indicator	[Insert KPI reference number]
Severity of performance shortfall	[Below requirements/Unsatisfactory]
Date of commencement of performance shortfall	[Insert date]
Number of Periods of performance shortfall at the date of issue of this notice	[Insert number of Periods]
Date for submission by the Supplier of the Level 1 Non-Conformance Recovery Plan	[Insert date five (5) Working Days from the date of issue of this notice]
The Supplier is required to provide a Root Cause Analysis	[Yes/No]
Issued by	Signed: _____ The Company's Representative Date: _____



**Appendix 4 to Schedule 18a**

**Level 2 & 3 Non-Conformance Notice Template**

<b>Level 2 Non-Conformance Notice</b>	
Level 2 Notice Number	[Insert number]
Level 1 Notice Number	[Insert Level 1 Notice number]
Key Performance Indicator	[Insert KPI reference number]
Number of Periods of performance shortfall at the date of issue of this notice	[Insert number of Periods]
The Supplier is required to provide a Root Cause Analysis	[Yes/No]
Issued by	Signed: _____  The Company's Representative  Date: _____



**Appendix 5 to Schedule 18a****Recovery Plan**

<b>Recovery Plan</b>		
Applicable Non-Conformance Notifications	[List all Level 1, 2 and 3 Non-Conformance Notifications]	
Key Performance Indicator to which the recovery Plan Relates	[Insert KPI reference number]	
Root Cause Analysis has been completed?	[Yes/No]* delete as applicable  [Where Root Cause Analysis has been completed insert cross reference to relevant document]	
Planned Action	Description	Date for implementation
Action		
1.		
2.		
3.		
4.		
5.		
	[Insert additional rows as required]	
Issued by	Signed: _____  The Supplier's Representative  Date: _____	



### **Appendix 6 to Schedule 18a**

### Root Cause Analysis

Root Cause Analysis (“RCA”) Template	
<p>Guidance Note:</p> <p>The template provides the generic key stages of a Root Cause Analysis and the minimum information to be provided by the Supplier. The Supplier shall therefore expand the template as necessary in order to provide a full explanation to the Company of the roots causes of all performance shortfalls.</p>	
Applicable Non-Conformance Notifications	[List all Level 1, 2 and 3 Non-Conformance Notifications]
Key Performance Indicator to which the RCA relates	[Insert KPI reference number]
Recovery Plan to which the RCA relates	[Insert Recovery Plan reference number]
Description of Performance Shortfall	
<div></div>	
Time Line	
Date	Sequence of Events
<div></div>	<div></div>

Investigative Team	Methods Used
Findings	
Identification of Root Cause	
Corrective Action	





Issued by	<div>Signed: _____</div> <div>The Supplier's Representative</div> <div>Date: _____</div>
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**Schedule 18b****Performance Measurement Matrix**

KPI no	KPI name	Level 2 – Below Requirements	Level 3 - Unsatisfactory	If recurs in the next Period
		% deduction from the Fee for the Period the KPI is measured	% deduction from the Fee for the Period the KPI is measured	As per Level 2 or Level 3 but the Abatement will increase by the % stated below
1A	Planned Preventative Maintenance – completion of Planned Preventative Maintenance Work Orders in accordance with the Planned Preventative Maintenance Schedule	10	15	5
1B	Planned Preventative Maintenance – completion of Breached Planned Preventative Maintenance Work Orders	10	15	5
1C	Planned Preventative Maintenance or Enhanced Maintenance - Maintenance Activity Record Submission	5	7.5	5
2A	Reactive Maintenance – response times for priority 1 Reactive Maintenance Work Orders	10	15	5
2B	Reactive Maintenance – Interim Rectification for priority 1 Reactive Maintenance Work Orders	10	15	5
2C	Reactive Maintenance – Permanent Rectification for priority 1 Reactive Maintenance Work Orders	5	10	5
2D	Reactive Maintenance – Permanent Rectification for priority 2, 3 and 4 Reactive Maintenance Work Orders	5	7.5	5



KPI no	KPI name	Level 2 – Below Requirements	Level 3 - Unsatisfactory	If recurs in the next Period
		% deduction from the Fee for the Period the KPI is measured	% deduction from the Fee for the Period the KPI is measured	As per Level 2 or Level 3 but the Abatement will increase by the % stated below
2E	Reactive Maintenance – Quantity of Breached Faults	N/A	15	5
3	Equipment Register	10	15	5
4	Health, Safety, Environmental – Number of non-compliances attributed to a failure to meet the requirements of Part A (Health and Safety) and Part C (Environmental) of Schedule 16 (Health, Safety, Quality and Environmental Requirements)	5	10	5
5	Quality of work and technical compliance - Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works completed in accordance with the Specification	5	10	5
6	Accuracy of the Payment Application	2.5	5	5
7	Performance to the AMP	10	15	5
8	Additional Works – completion of Additional Works Work Orders	5	7.5	5
9	FRACAS data completeness - The proportion of records that hold an accurate FRACAS failure information recorded on AMS by the Supplier which comply with the	5	7.5	5



KPI no	KPI name	Level 2 – Below Requirements	Level 3 - Unsatisfactory	If recurs in the next Period
		% deduction from the Fee for the Period the KPI is measured	% deduction from the Fee for the Period the KPI is measured	As per Level 2 or Level 3 but the Abatement will increase by the % stated below
	requirements of paragraph 9.1.17 of the Specification			
10	Audit of the Supplier's management processes and procedures to deliver their obligations under Part A (Health and Safety), Part B (Quality) and Part C (Environmental) of Schedule 16 (Health, Safety, Quality and Environmental Requirements)	N/A	10	5
11	Management of incident reporting and investigation using the Company's incident management system (Information Exchange 2 – IE2)	N/A	5	5




**Schedule 18c****Key Performance Indicators (KPIs)****1. Overview**

1.1. This Schedule 18c (Key Performance Indicators (KPIs)) sets out the details as to how the KPIs are measured and the service performance levels required for each KPI.

<b>KPI 1A</b>					
Key Performance Indicator	<b>Planned Preventative Maintenance – completion of Planned Preventative Maintenance Work Orders in accordance with the Planned Preventative Maintenance Schedule</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in completing Planned Preventative Maintenance Work Orders in accordance with the Planned Preventative Maintenance Schedule in accordance with paragraph 8 of the Specification				
KPI Scope	Planned Preventative Maintenance Work Orders which are due to be completed during the Period of measurement in accordance with the Planned Preventative Maintenance Schedule in accordance with paragraph 8 of the Specification				
KPI Monitoring Methods	<p>For each Period, the Planned Preventative Maintenance Work Order completion percentage =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of Planned Preventative Maintenance Work Orders due in a Period that are completed within the applicable compliance date(s) set out in the Planned Preventative Maintenance Schedule; and</td></tr> <tr> <td>B =</td><td>the total number of Planned Preventative Maintenance Work Orders due in a Period, as set out in the Planned Preventative Maintenance Schedule.</td></tr> </table> <p>A Planned Preventative Maintenance Work Order can have up to two compliance dates:</p> <ul style="list-style-type: none"> <li>a "start no earlier than" date; and</li> <li>a "finish no later than" date.</li> </ul> <p>A Planned Preventative Maintenance Work Order is considered "due" in a Period when its "finish no later than" date falls within that Period.</p> <p>A Planned Preventative Maintenance Work Order is deemed to be completed within its compliance date(s) where the actual finish date</p>	A =	the number of Planned Preventative Maintenance Work Orders due in a Period that are completed within the applicable compliance date(s) set out in the Planned Preventative Maintenance Schedule; and	B =	the total number of Planned Preventative Maintenance Work Orders due in a Period, as set out in the Planned Preventative Maintenance Schedule.
A =	the number of Planned Preventative Maintenance Work Orders due in a Period that are completed within the applicable compliance date(s) set out in the Planned Preventative Maintenance Schedule; and				
B =	the total number of Planned Preventative Maintenance Work Orders due in a Period, as set out in the Planned Preventative Maintenance Schedule.				

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	<p>is between its “start no earlier than” date and its “finish no later than” date.</p> <p>Example:</p> <div></div> <p><u>Data Source</u></p> <p>The Company’s AMS</p>
Performance Levels	
Level 1 - Meets Requirements	Percentage of completed Planned Preventative Maintenance activities is greater than or equal to 98%
Level 2 - Below Requirements	Percentage of completed Planned Preventative Maintenance activities is between 90 and 97.99%
Level 3 - Unsatisfactory	Percentage of completed Planned Preventative Maintenance activities is less than 90%





KPI 1B					
Key Performance Indicator	<b>Planned Preventative Maintenance - completion of Breached Planned Preventative Maintenance Work Orders</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in completing Breached Planned Preventative Maintenance Work Orders in accordance with paragraph 8.1.15 of the Specification				
KPI Scope	Breached Planned Preventative Maintenance Work Orders which are due to be completed during the applicable Period in accordance with paragraph 8.1.15 of the Specification				
KPI Monitoring Methods	<p>For each Period, the Breached Planned Preventative Maintenance Work Order completion percentage =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of Breached Planned Preventative Maintenance Work Orders due in a Period that are completed by the applicable recovery date calculated in accordance with paragraph 8.1.15 of the Specification; and</td></tr> <tr> <td>B =</td><td>the total number of Breached Planned Preventative Maintenance Work Orders due in a Period as calculated in accordance with paragraph 8.1.15 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the number of Breached Planned Preventative Maintenance Work Orders due in a Period that are completed by the applicable recovery date calculated in accordance with paragraph 8.1.15 of the Specification; and	B =	the total number of Breached Planned Preventative Maintenance Work Orders due in a Period as calculated in accordance with paragraph 8.1.15 of the Specification.
A =	the number of Breached Planned Preventative Maintenance Work Orders due in a Period that are completed by the applicable recovery date calculated in accordance with paragraph 8.1.15 of the Specification; and				
B =	the total number of Breached Planned Preventative Maintenance Work Orders due in a Period as calculated in accordance with paragraph 8.1.15 of the Specification.				
Performance Levels					
Level 1 - Meets Requirements	Percentage of completed Breached Planned Preventative Maintenance Work Orders is 100%				
Level 2 - Below Requirements	Percentage of completed Breached Planned Preventative Maintenance Work Orders is between 98 and 99.99%				
Level 3 - Unsatisfactory	Percentage of completed Breached Planned Preventative Maintenance Work Orders is less than 98%				



KPI 1C					
Key Performance Indicator	<b>Planned Preventative Maintenance or Enhanced Maintenance - Maintenance Activity Record Submissions</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's compliance with its obligation to submit Maintenance Activity Record Submissions in accordance with paragraph 7.4.7 of the Specification				
KPI Scope	The Maintenance Activity Record Submissions due during the applicable Period are submitted in accordance with paragraph 7.4.7 of the Specification				
KPI Monitoring Methods	<p>Where the Company is satisfied, following an audit carried out in accordance with paragraph 7.4.31 of the Specification, that the Supplier is submitting the Maintenance Activity Record Submissions in compliance with the Specification, such audit shall be deemed to be a "<u>Satisfactory Audit</u>" for the purposes of this KPI.</p> <p>For each Period, the percentage success rate =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the total number of Satisfactory Audits carried out by the Company during the relevant Period; and</td></tr> <tr> <td>B =</td><td>the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to submit Maintenance Activity Record Submissions in accordance with paragraph 7.4.7 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's audits</p>	A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and	B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to submit Maintenance Activity Record Submissions in accordance with paragraph 7.4.7 of the Specification.
A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and				
B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to submit Maintenance Activity Record Submissions in accordance with paragraph 7.4.7 of the Specification.				
Performance Levels					
Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 98%				
Level 2 - Below Requirements	Percentage achieved is between 90 and 97.99%				
Level 3 - Unsatisfactory	Percentage achieved is below 90%				



KPI 2A					
Key Performance Indicator	<b>Reactive Maintenance – response times for priority 1 Reactive Maintenance Work Orders</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in responding to priority 1 Reactive Maintenance Work Orders within the applicable Clearance Time in accordance with paragraph 9.1 of the Specification				
KPI Scope	Priority 1 Reactive Maintenance Work Orders which are due to be responded to during the applicable Period in accordance with paragraph 9.1 of the Specification				
KPI Monitoring Methods	<p>For each Period, the percentage of Reactive Maintenance Work Orders responded to on time =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of priority 1 Reactive Maintenance Work Orders for which the Supplier attends the relevant Site within the applicable Clearance Time; and</td></tr> <tr> <td>B =</td><td>the total number of priority 1 Reactive Maintenance Work Orders for which the Supplier should have attended the relevant Site during the applicable Period as required pursuant to paragraph 9.1 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the number of priority 1 Reactive Maintenance Work Orders for which the Supplier attends the relevant Site within the applicable Clearance Time; and	B =	the total number of priority 1 Reactive Maintenance Work Orders for which the Supplier should have attended the relevant Site during the applicable Period as required pursuant to paragraph 9.1 of the Specification.
A =	the number of priority 1 Reactive Maintenance Work Orders for which the Supplier attends the relevant Site within the applicable Clearance Time; and				
B =	the total number of priority 1 Reactive Maintenance Work Orders for which the Supplier should have attended the relevant Site during the applicable Period as required pursuant to paragraph 9.1 of the Specification.				
Performance Levels					
Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 98%				
Level 2 - Below Requirements	Percentage achieved is between 90 and 97.99%				
Level 3 - Unsatisfactory	Percentage achieved is below 90%				



KPI 2B					
Key Performance Indicator	<b>Reactive Maintenance – Interim Rectifications for priority 1 Reactive Maintenance Work Orders</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in completing Interim Rectifications for priority 1 Reactive Maintenance Work Orders within the applicable Clearance Time				
KPI Scope	Priority 1 Reactive Maintenance Work Orders that should be the subject of an Interim Rectification (i.e. only applicable to Work Orders where a Permanent Rectification is not performed) during the applicable Period in accordance with paragraph 9.1 of the Specification				
KPI Monitoring Methods	<p>For each Period, the percentage of Interim Rectifications carried out on time =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of priority 1 Reactive Maintenance Work Orders that receive an Interim Rectification within the applicable Clearance Time; and</td></tr> <tr> <td>B =</td><td>the total number of priority 1 Reactive Maintenance Work Orders that should have received an Interim Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the number of priority 1 Reactive Maintenance Work Orders that receive an Interim Rectification within the applicable Clearance Time; and	B =	the total number of priority 1 Reactive Maintenance Work Orders that should have received an Interim Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.
A =	the number of priority 1 Reactive Maintenance Work Orders that receive an Interim Rectification within the applicable Clearance Time; and				
B =	the total number of priority 1 Reactive Maintenance Work Orders that should have received an Interim Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.				
Performance Levels					
Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 98%				
Level 2 - Below Requirements	Percentage achieved is between 90 and 97.99%				
Level 3 - Unsatisfactory	Percentage achieved is below 90%				



KPI 2C					
Key Performance Indicator	<b>Reactive Maintenance – Permanent Rectifications for priority 1 Reactive Maintenance Work Orders</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in completing Permanent Rectifications for priority 1 Reactive Maintenance Work Orders within the applicable Clearance Time				
KPI Scope	Priority 1 Reactive Maintenance Work Orders that should be the subject of a Permanent Rectification during the applicable Period in accordance with paragraph 9.1 of the Specification				
KPI Monitoring Methods	<p>For each Period, the percentage of Permanent Rectifications carried out on time =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of priority 1 Reactive Maintenance Work Orders that receive a Permanent Rectification within the applicable Clearance Time; and</td></tr> <tr> <td>B =</td><td>the total number of priority 1 Reactive Maintenance Work Orders that should have received a Permanent Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the number of priority 1 Reactive Maintenance Work Orders that receive a Permanent Rectification within the applicable Clearance Time; and	B =	the total number of priority 1 Reactive Maintenance Work Orders that should have received a Permanent Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.
A =	the number of priority 1 Reactive Maintenance Work Orders that receive a Permanent Rectification within the applicable Clearance Time; and				
B =	the total number of priority 1 Reactive Maintenance Work Orders that should have received a Permanent Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.				
Performance Levels					
Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 98%				
Level 2 - Below Requirements	Percentage achieved is between 90 and 97.99%				
Level 3 - Unsatisfactory	Percentage achieved is below 90%				



KPI 2D					
Key Performance Indicator	<b>Reactive Maintenance - Permanent Rectification for Priority 2, 3 and 4 Reactive Maintenance Work Orders</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in completing Permanent Rectifications for priority 2, 3 and 4 Reactive Maintenance Work Orders within the applicable Clearance Time				
KPI Scope	Priority 2, 3 and 4 Reactive Maintenance Work Orders that should be the subject of a Permanent Rectification during the applicable Period in accordance with paragraph 9.1 of the Specification				
KPI Monitoring Methods	<p>For each Period, the percentage number of Permanent Rectifications carried out on time =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of priority 2, 3 and 4 Reactive Maintenance Work Orders that receive a Permanent Rectification within the applicable Clearance Time during the applicable Period; and</td></tr> <tr> <td>B =</td><td>the total number of priority 2, 3 and 4 Reactive Maintenance Work Orders that should have received a Permanent Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the number of priority 2, 3 and 4 Reactive Maintenance Work Orders that receive a Permanent Rectification within the applicable Clearance Time during the applicable Period; and	B =	the total number of priority 2, 3 and 4 Reactive Maintenance Work Orders that should have received a Permanent Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.
A =	the number of priority 2, 3 and 4 Reactive Maintenance Work Orders that receive a Permanent Rectification within the applicable Clearance Time during the applicable Period; and				
B =	the total number of priority 2, 3 and 4 Reactive Maintenance Work Orders that should have received a Permanent Rectification during the applicable Period as required pursuant to paragraph 9.1 of the Specification.				
Performance Levels					
Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 95%				
Level 2 - Below Requirements	Percentage achieved is between 90 and 94.99%				
Level 3 - Unsatisfactory	Percentage achieved is below 90%				





KPI 2E					
Key Performance Indicator	<b>Reactive Maintenance – Quantity of Breached Faults</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in ensuring the quantity of Breached Faults is below the stated threshold				
KPI Scope	Reactive Maintenance Work Orders that have not been closed within the applicable Clearance Time and are therefore deemed to be Breached Faults in accordance with paragraph 9.1.12 of the Specification.				
KPI Monitoring Methods	<p>For each Period, the percentage of Breached Faults =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of Breached Faults as at the end of the applicable Period; and</td></tr> <tr> <td>B =</td><td>the total number of Reactive Maintenance Work Orders raised in the previous two (2) Periods.</td></tr> </table> <p>To be measured each Period based on the previous two (2) Periods: e.g. P3 measures P1 and P2</p> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the number of Breached Faults as at the end of the applicable Period; and	B =	the total number of Reactive Maintenance Work Orders raised in the previous two (2) Periods.
A =	the number of Breached Faults as at the end of the applicable Period; and				
B =	the total number of Reactive Maintenance Work Orders raised in the previous two (2) Periods.				
Performance Levels					
Level 1 - Meets Requirements	Percentage achieved is less than or equal to 10%				
Level 2 - Below Requirements	Not Used				
Level 3 - Unsatisfactory	Percentage achieved is greater than 10%				



KPI 3					
Key Performance Indicator	<b>Equipment Register</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's compliance with its obligations to support the population and maintenance of the Equipment Register in accordance with paragraph 7.9 of the Specification.				
KPI Scope	<p>All Work Orders which require the Supplier to:</p> <ol style="list-style-type: none"> <li>1) declare whether or not a change is needed to the Equipment Register in accordance with paragraph 7.9 of the Specification; and/or</li> <li>2) update the Equipment Register in the Company's AMS through the Application Programming Interface in accordance with paragraph 7.9 of the Specification.</li> </ol>				
KPI Monitoring Methods	<p>Where the Company is satisfied, following an audit carried out in accordance with paragraph 7.4.31 of the Specification, that the Supplier is maintaining the Equipment Register in compliance with paragraph 7.9 of the Specification, such audit shall be deemed to be a "<u>Satisfactory Audit</u>" for the purposes of this KPI. Where an audit is not deemed a "Satisfactory Audit", such audit shall be deemed to be an "<u>Unsatisfactory Audit</u>".</p> <p>For each Period, the percentage success rate =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the total number of Satisfactory Audits carried out by the Company during the relevant Period; and</td></tr> <tr> <td>B =</td><td>the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to maintain the Equipment Register in accordance with paragraph 7.9 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's audits of the Company's AMS</p>	A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and	B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to maintain the Equipment Register in accordance with paragraph 7.9 of the Specification.
A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and				
B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to maintain the Equipment Register in accordance with paragraph 7.9 of the Specification.				
Performance Levels					
Level 1 - Meets Requirements	Percentage success rate is equal to or greater than 98%				



Level 2 - Below Requirements	<p>The Parties agree that the Supplier's performance levels shall be assessed as "Below Requirements" where:</p> <p>(a) fifty (50) or more audits are carried out in a Period, the percentage success rate is between 95 and 97.99%; and</p> <p>(b) less than fifty (50) audits are carried out in a Period, there are two (2) Unsatisfactory Audits.</p>
Level 3 - Unsatisfactory	<p>The Parties agree that the Supplier's performance levels shall be assessed as "Unsatisfactory" where:</p> <p>(a) fifty (50) or more audits are carried out in a Period, the percentage success rate is less than 95%; and</p> <p>(b) less than fifty (50) audits are carried out in a Period, there are three (3) or more Unsatisfactory Audits.</p>



KPI 4					
Key Performance Indicator	<b>Health, Safety, Environmental – Number of non-compliances attributed to a failure to meet the requirements of Schedule 16 (Health, Safety, Quality and Environmental Requirements)</b>				
Frequency	Per Period				
KPI Purpose	Allows the Company to undertake assurance activities to gain confidence that the health, safety, quality and environmental elements of the Contract are being implemented and are effective and efficient in managing onsite risk				
KPI Scope	All of the Supplier's activities relating to compliance with Schedule 16 (Health, Safety, Quality and Environmental Requirements)				
KPI Monitoring Methods	<p>For each Period, the percentage average score =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the total number of QUENSH Work Orders scored as compliant by the Company in accordance with the AMS Supplier Processes detailed in Appendix K (AMS Supplier Processes) to the Specification during the relevant Period; and</td></tr> <tr> <td>B =</td><td>the total number of QUENSH Work Orders raised by the Company during the relevant Period.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the total number of QUENSH Work Orders scored as compliant by the Company in accordance with the AMS Supplier Processes detailed in Appendix K (AMS Supplier Processes) to the Specification during the relevant Period; and	B =	the total number of QUENSH Work Orders raised by the Company during the relevant Period.
A =	the total number of QUENSH Work Orders scored as compliant by the Company in accordance with the AMS Supplier Processes detailed in Appendix K (AMS Supplier Processes) to the Specification during the relevant Period; and				
B =	the total number of QUENSH Work Orders raised by the Company during the relevant Period.				
Performance Levels					
Level 1 - Meets Requirements	Average scores are equal to or greater than 90%				
Level 2 - Below Requirements	Average scores are between 80% and 89.99%				
Level 3 - Unsatisfactory	Average scores are less than 80%				



KPI 5					
Key Performance Indicator	<b>Quality of Work and Technical Compliance - Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works completed in accordance with the Specification.</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's quality of work and technical compliance with the Specification in relation to delivery of the Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works, as demonstrated in the audits carried out by the Company pursuant to paragraph 7.4.31 of the Specification				
KPI Scope	Performance of the Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works during the applicable Period in accordance with the Specification.				
KPI Monitoring Methods	<p>Where the Company is satisfied, following an audit carried out in accordance with paragraph 7.4.31 of the Specification, that the Supplier is carrying out the Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works in compliance with the Specification, such audit shall be deemed to be a "<u>Satisfactory Audit</u>" for the purposes of this KPI. Where an audit is not deemed a "Satisfactory Audit", such audit shall be deemed to be an "<u>Unsatisfactory Audit</u>".</p> <p>For each Period, the percentage success rate =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the total number of Satisfactory Audits carried out by the Company during the relevant Period; and</td></tr> <tr> <td>B =</td><td>the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to carry out the Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works in accordance with the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's audits which will include, but not be limited to:</p> <ul style="list-style-type: none"> <li>Planned Preventative Maintenance to be completed in accordance with Appendix D (Planned Preventative Maintenance Technical Specification) to the Specification;</li> <li>the Supplier's duties and obligation towards the delivery of Company Fire procedures for Fire Detection Isolations, Smoke to Heat Detector Substitutions (PR0630) in accordance with paragraph 7.4 of the Specification;</li> </ul>	A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and	B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to carry out the Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works in accordance with the Specification.
A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and				
B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to carry out the Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and Additional Works in accordance with the Specification.				



	<ul style="list-style-type: none"> <li>the Supplier's duties and obligation towards the delivery of Company Fire procedures for the Management of Drawings and Detection Message Changes (PR0632) in accordance with paragraph 7.4 of the Specification; and</li> <li>the Supplier's management of Fire Equipment Spares &amp; Critical Spares in accordance with paragraphs 7.14 and 7.15 of the Specification.</li> </ul>
Performance Levels	
Level 1 - Meets Requirements	Percentage success rate is greater than or equal to 98%
Level 2 - Below Requirements	<p>The Parties agree that the Supplier's performance levels shall be assessed as "Below Requirements" where:</p> <p>(a) fifty (50) or more audits are carried out in a Period, the percentage success rate is between 95% and 97.99%; and</p> <p>(b) less than fifty (50) audits are carried out in a Period, there are two (2) Unsatisfactory Audits.</p>
Level 3 - Unsatisfactory	<p>The Parties agree that the Supplier's performance levels shall be assessed as "Unsatisfactory" where:</p> <p>(a) fifty (50) or more audits are carried out in a Period, the percentage success rate is less than 95%; and</p> <p>(b) less than fifty (50) audits are carried out in a Period, there are three (3) or more Unsatisfactory Audits.</p>





KPI 6					
Key Performance Indicator	<b>Accuracy of the Payment Application</b>				
Frequency	Per Period				
KPI Purpose	To measure the accuracy of the Payment Application submitted by the Supplier				
KPI Scope	The percentage variance between the value of the Price set out in the Payment Application submitted by the Supplier (covering the Planned Preventative Maintenance Price, Reactive Maintenance Price, Core Team Price, the Non-Services to Site Attendance Price, the Additional Works Price (if applicable) and the Fee) against the Company's assessment of the same values (which shall be based on the Company's AMS and the terms set out in Schedule 3 (Payment)) (the " <b>Company Assessment</b> ").				
KPI Monitoring Methods	<p>For each Period, the percentage variance =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the value of the Payment Application submitted by the Supplier in relevant Period less the value of that Payment Application as assessed by the Company; and</td></tr> <tr> <td>B =</td><td>the total value of the Payment Application submitted by the Supplier in the relevant Period.</td></tr> </table> <p>Example:</p> <p><b><u>P4</u></b></p> <ol style="list-style-type: none"> <li>Forecast of the Services in the Period (as per programme &amp; cost loaded programme) of £200k including the value of the Planned Preventative Maintenance Price, Reactive Maintenance Price, Core Team Price, the Non-Services to Site Attendance Price, the Additional Works Price (if applicable) and the Fee.</li> <li>For P4 the Supplier states they have completed Services representing a value of £180k including the value of the Planned Preventative Maintenance Price, Reactive Maintenance Price, Core Team Price, the Non-Services to Site Attendance Price, the Additional Works Price (if applicable) and the Fee and this is contained in their Payment Application.</li> <li>The Company's assessment determines that the Services completed represent a value of £160k including the value of the Planned Preventative Maintenance Price, Reactive Maintenance Price, Core Team Price, the Non-Services to Site</li> </ol>	A =	the value of the Payment Application submitted by the Supplier in relevant Period less the value of that Payment Application as assessed by the Company; and	B =	the total value of the Payment Application submitted by the Supplier in the relevant Period.
A =	the value of the Payment Application submitted by the Supplier in relevant Period less the value of that Payment Application as assessed by the Company; and				
B =	the total value of the Payment Application submitted by the Supplier in the relevant Period.				



	<p>Attendance Price, the Additional Works Price (if applicable) and the Fee.</p> <p>KPI Score (%) =</p> $\frac{(180k - 160k) \times 100}{180k}$ <p>Therefore Score = 11.11% variance between the Payment Application and the Company's assessment.</p> <p><u>Data Source</u></p> <p>The Company's assessment of the Payment Application</p>
Performance Levels	
Level 1 - Meets Requirements	Percentage variance is less than or equal to 5%
Level 2 - Below Requirements	Percentage variance is between 9.99% and 5%
Level 3 - Unsatisfactory	Percentage variance is greater than 10%



KPI 7																																																													
Key Performance Indicator	Performance to the AMP																																																												
Frequency	Per Period																																																												
KPI Purpose	To measure how effective the Supplier is at delivering against the AMP in accordance with paragraph 7.8 of the Specification.																																																												
KPI Scope	All activities required to be delivered under the AMP in accordance with paragraph 7.8 of the Specification including Planned Preventative Maintenance, Reactive Maintenance and Additional Works.																																																												
KPI Monitoring Methods	For each Period, the percentage number of Work Orders completed as planned in the AMP =  (A/B) x100  where: <table><tr><td>A =</td><td colspan="6">the number of Work Orders completed in the applicable Period; and</td></tr><tr><td>B =</td><td colspan="6">the number of Work Orders planned to be completed during the applicable Period as set out in the AMP.</td></tr></table> For example: <table><tr><td colspan="2"></td><td colspan="2">P1</td><td colspan="2">P2</td><td colspan="2">YTD</td></tr><tr><td>Activity</td><td>Planned</td><td>Actual</td><td>Perf against AMP</td><td>Planned</td><td>Actual</td><td>Perf against AMP</td><td>Perf against AMP</td></tr><tr><td>Job Plan A</td><td>100</td><td>95</td><td>95%</td><td>100</td><td>100</td><td>100%</td><td>97.5%</td></tr><tr><td>Job Plan B</td><td>50</td><td>52</td><td>104%</td><td>50</td><td>48</td><td>96%</td><td>100%</td></tr><tr><td>Total</td><td>150</td><td>147</td><td>98%</td><td>150</td><td>148</td><td>98.7%</td><td>98.3%</td></tr></table> <u>Data source</u>  The volume of Work Orders planned for a year will be submitted by the Supplier as part of Annual Maintenance Planning and recorded in the Company’s Axiom system as the AMP. Work completed is recorded in the Company’s Asset Management System.  Where there are Parent/Child Work Order relationships, both planned and actual will be measured at Parent level.  Using data from the Company’s AMS, the Company will produce reports measuring the number of Work Orders completed in a Period							A =	the number of Work Orders completed in the applicable Period; and						B =	the number of Work Orders planned to be completed during the applicable Period as set out in the AMP.								P1		P2		YTD		Activity	Planned	Actual	Perf against AMP	Planned	Actual	Perf against AMP	Perf against AMP	Job Plan A	100	95	95%	100	100	100%	97.5%	Job Plan B	50	52	104%	50	48	96%	100%	Total	150	147	98%	150	148	98.7%	98.3%
	A =	the number of Work Orders completed in the applicable Period; and																																																											
	B =	the number of Work Orders planned to be completed during the applicable Period as set out in the AMP.																																																											
			P1		P2		YTD																																																						
	Activity	Planned	Actual	Perf against AMP	Planned	Actual	Perf against AMP	Perf against AMP																																																					
	Job Plan A	100	95	95%	100	100	100%	97.5%																																																					
	Job Plan B	50	52	104%	50	48	96%	100%																																																					
	Total	150	147	98%	150	148	98.7%	98.3%																																																					



	against the number of Work Orders that were planned to be completed during that Period.
Performance Levels	
Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 92%
Level 2 - Below Requirements	Percentage achieved is between 90 and 91.99%
Level 3 - Unsatisfactor y	Percentage achieved is below 90%



KPI 8					
Key Performance Indicator	<b>Additional Works – completion of Additional Works Work Orders</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's effectiveness in completing Additional Works Work Orders in accordance with paragraph 2.14 of the Specification and within the applicable Additional Works Clearance Times in accordance with paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works)				
KPI Scope	Additional Works within the Additional Works Clearance Times in accordance with paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works)				
KPI Monitoring Methods	<p>For each Period, the percentage number of Additional Works Work Orders completed on time =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the number of Additional Works Work Orders that are completed within the applicable Additional Works Clearance Times in accordance with paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works) during the applicable Period; and</td></tr> <tr> <td>B =</td><td>the total number of Additional Works Work Orders that should have been completed in the applicable Period as required pursuant to paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works).</td></tr> </table> <p>Worked example</p> <p>For example, an Additional Works Work Order is instructed by the Company and is allocated a Priority Level. The Supplier fails to meet the Additional Works Clearance Time to complete the Work Order and thus the Additional Works Work Order is counted in the denominator in the above calculation but is not counted in the numerator.</p> <p><u>Data Source</u></p> <p>The Company's AMS</p>	A =	the number of Additional Works Work Orders that are completed within the applicable Additional Works Clearance Times in accordance with paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works) during the applicable Period; and	B =	the total number of Additional Works Work Orders that should have been completed in the applicable Period as required pursuant to paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works).
A =	the number of Additional Works Work Orders that are completed within the applicable Additional Works Clearance Times in accordance with paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works) during the applicable Period; and				
B =	the total number of Additional Works Work Orders that should have been completed in the applicable Period as required pursuant to paragraph 4.1 of Part B (Additional Works) of Schedule 4 (Contract Variation and Additional Works).				
Performance Levels					
Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 95%				



Level 2 - Below Requirements	Percentage achieved is between 90 to 94.99%
Level 3 - Unsatisfactory	Percentage achieved is below 90%





KPI 9					
Key Performance Indicator	<b>FRACAS data completeness - The proportion of records that hold an accurate FRACAS failure information recorded on AMS by the Supplier which comply with the requirements of paragraph 9.1.17 of the Specification</b>				
Frequency	Per Period				
KPI Purpose	To measure the Supplier's compliance with its obligations in paragraph 9.1.17 of the Specification to provide the Asset failure management information including the failure codes (asset component, problem, cause and remedy) and verify the information is accurate in order to satisfy the requirements of the Company's AMS and to support effective utilisation of FRACAS improving asset data integrity and providing a stronger base for thorough analysis and decision making supporting the business to shift from reactive to predictive and preventative maintenance approach				
KPI Scope	The number of audits carried out by the Company which demonstrate compliance by the Supplier with paragraph 9.1.17 of the Specification, expressed as a percentage of the total number of audits undertaken by the Company.				
KPI Monitoring Methods	<p>Where the Company is satisfied, following an audit carried out in accordance with paragraph 7.4.31 of the Specification, that the Supplier is participating in the Company's FRACAS process in accordance with paragraph 9.1.17 of the Specification, such audit shall be deemed to be a "<u>Satisfactory Audit</u>" for the purposes of this KPI. Where an audit is not deemed a "Satisfactory Audit", such audit shall be deemed to be an "<u>Unsatisfactory Audit</u>".</p> <p>For each Period, the percentage success rate =</p> $(A/B) \times 100$ <p>where:</p> <table border="1"> <tr> <td>A =</td><td>the total number of Satisfactory Audits carried out by the Company during the relevant Period; and</td></tr> <tr> <td>B =</td><td>the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to participate in the Company's FRACAS process in accordance with paragraph 9.1.17 of the Specification.</td></tr> </table> <p><u>Data Source</u></p> <p>The Company's Audits</p>	A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and	B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to participate in the Company's FRACAS process in accordance with paragraph 9.1.17 of the Specification.
A =	the total number of Satisfactory Audits carried out by the Company during the relevant Period; and				
B =	the total number of audits carried out by the Company during the relevant Period in relation to the Supplier's obligation to participate in the Company's FRACAS process in accordance with paragraph 9.1.17 of the Specification.				
Performance Levels					



Level 1 - Meets Requirements	Percentage achieved is greater than or equal to 95%
Level 2 - Below Requirements	<p>The Parties agree that the Supplier's performance levels shall be assessed as "Below Requirements" where:</p> <p>(a) twenty (20) or more audits are carried out in a Period, the percentage achieved is between 90% and 94.99%; and</p> <p>(b) less than twenty (20) audits are carried out in a Period, there are two (2) Unsatisfactory Audits.</p>
Level 3 - Unsatisfactory	<p>The Parties agree that the Supplier's performance levels shall be assessed as "Unsatisfactory" where:</p> <p>(a) twenty (20) or more audits are carried out in a Period, the percentage achieved is below 90%; and</p> <p>(b) less than twenty (20) audits are carried out in a Period, there are three (3) or more Unsatisfactory Audits.</p>



<b>KPI 10</b>	
Key Performance Indicator	<b>Audit of the Supplier's management processes and procedures to deliver their obligations under Schedule 16 (Health, Safety, Quality and Environmental Requirements)</b>
Frequency	Annual
KPI Purpose	To assure the Company that the Supplier's management processes and procedures do not import any risk to the Company
KPI Scope	All of the Supplier's management processes and procedures in connection with the delivery of their obligations under Schedule 16 (Health, Safety, Quality and Environmental Requirements)
KPI Monitoring Methods	<p>Audit of the Supplier's management processes and procedures to be undertaken by the Company in accordance with paragraph 1.5.2 of Part A (Health and Safety) of Schedule 16 (Health, Safety, Quality and Environmental Requirements).</p> <p>The audit may cover all or any part of the Supplier's management processes and procedures.</p>
Performance Levels	
Level 1 - Meets Requirements	No further actions are identified by the audit or any non-conformances identified by the audit are not addressed and closed out within the timescales set at the close out meeting for the audit.
Level 2 - Below Requirements	Not Used
Level 3 - Unsatisfactory	Non-conformances identified by the audit are not addressed and closed out within the timescales set out at the close out meeting for the audit.



KPI 11	
Key Performance Indicator	<b>To monitor the Supplier's management of incident reporting and investigation, using the Company's incident management system (Information Exchange 2 - IE2) in accordance with Schedule 16 (Health, Safety, Quality and Environmental Requirements)</b>
Frequency	Per Period
KPI Purpose	<p>To ensure a robust method of reporting, recording, and investigating of local incidents* either prevented or experienced is maintained to prevent recurrence and distil a positive safety culture.</p> <p><i>* Incidents are either preventable (near misses/near hits) or experienced occurrences which have or could have an impact to the safety of people, the premise/equipment or the Company's production/services.</i></p>
KPI Scope	Throughout the delivery of the Services the Supplier's staff are required to report all incidents via the IE2 system as stated in paragraph 1.4.3 of Part A (Health and Safety) of Schedule 16 ( <i>Health, Safety, Quality and Environmental Requirements</i> ).
KPI Monitoring Methods	<p>The Company will use the data held within the IE2 system to identify the number of non-compliances.</p> <p>The Company will report on the Supplier's performance against this KPI each Period using the data held within the IE2 system with unassigned, overdue investigations and/or actions being a non-compliance.</p> <p>Failure to meet the requirements of the IE2 system within the timescales stated in Appendix 1 (FAQ for InfoExchange HSE) to Part A (Health and Safety) of Schedule 16 (<i>Health, Safety, Quality and Environmental Requirements</i>) shall be deemed as a non-compliance.</p>
Performance Levels	
Level 1 - Meets Requirements	0 non-compliance
Level 2 - Below Requirements	Not Used
Level 3 - Unsatisfactory	1 or more non-compliances



## **Appendix 1 to Schedule 18c**

### **Reactive Maintenance and Isolation Services Clearance Times**

#### **1. General**

- 1.1. The Supplier shall attend and rectify faults and requests for Reactive Maintenance and Isolation Services within the timescales below.
- 1.2. Attendance and rectification times shall start at the same time and shall run concurrently and timescales shall be measured from the time the Supplier receives a fault notification/requirement to deliver Reactive Maintenance and Isolation Services from the Company.
- 1.3. The Supplier shall:
  - 1.3.1. deliver Reactive Maintenance three hundred and sixty five (365) days per year, twenty four (24) hours per day; and
  - 1.3.2. provide a 24/7 call centre capability to respond to all faults reported by the Company in accordance with the Specification. The Supplier's call centre facility shall be the contact point for the Company and must be operated at all times by suitably trained and competent staff. The call centre facility shall receive from and share data with the Company as required.
- 1.4. The Supplier shall close out all faults/issued work orders within two (2) hours of leaving the relevant Site.

Priority Level	Priority Name	Description	Action	Clearance Times
1	Emergency	Faults which: (i) involve critical assets; or (ii) which significantly restrict or prevent normal operation and use of the building, facility, or Site; or (iii) which present an immediate and serious risk to customer or operational safety; or (iv) which are safety related; or (v) which are consequentially Line or Site service affecting; or (vi) have the potential to generate significant consequential Equipment or property damage.	Competent resource to attend Site and commence work	Within 2 Hours *



Priority Level	Priority Name	Description	Action	Clearance Times
			Make safe and Permanent Rectification OR Interim Rectification	Within 3 hours *
			Further attendance and Permanent Rectification	Within 48 Hours *
2	Urgent	Faults which are not deemed as Priority 1 but which adversely affect customer or operational safety or security or restrict the normal operation of the building, facility, or Site.	Permanent Rectification	Within 48 Hours *
3	Non-Urgent	Faults which impinge on the normal operation or use of the building, facility or Site but which do not cause immediate disruption or inconvenience. No impact on safety	Permanent Rectification	Within 96 hours *
4	Isolation Requests	Requests to undertake Isolation Services in accordance with paragraph 10 of the Specification	Permanent Rectification	*The time specified by the Company in the relevant RMWO

\* shall be measured from notification to the Supplier by the Company





## **Schedule 18d**

### **Payment Abatement**

#### **1. General**

- 1.1. Subject to paragraph 5.2 of Schedule 18a (*Performance Measurement Mechanism*), the Fee due to the Supplier from the Company is subject to the Company's right to levy Abatements for failure to achieve the levels of service delivery for each KPI as set out in this Schedule 18 (*Performance Measurement*).
- 1.2. Schedule 18b (*Performance Measurement Matrix*) sets out the KPIs which shall result in an Abatement being levied by the Company in the relevant Period in the event of the Supplier's performance being assessed to be either "Below Requirements" or "Unsatisfactory" in relation to that KPI.
- 1.3. The method of calculation of Abatements is set out in paragraph 2 and an example Abatement calculation is provided (for illustrative purposes only) in paragraph 3.

#### **2. Method of calculation**

- 2.1. The KPIs are assessed in accordance with Schedule 18c (*Key Performance Indicators (KPIs)*).
- 2.2. The Company may deduct the percentage set out in Schedule 18b (*Performance Measurement Matrix*) from the greater of:
  - 2.2.1. the Fee due to the Supplier in the relevant Period; and
  - 2.2.2. 10% of the aggregate Planned Preventative Maintenance Price, the Reactive Maintenance Price and the Core Team Price in the relevant Period.
- 2.3. There is no limit to either (a) the value of Abatements made by the Company; or (b) the number of Abating KPIs which can be abated in any Period.
- 2.4. The Company may withhold any Abatements due to it from any amounts due to the Supplier, whether or not such Abatements were incurred or arose in the same Period as the amounts payable to the Supplier.

#### **3. Example Abatement Calculation (*for illustrative purposes only*)**

- 3.1. In Period 2 of Financial Year 3 all KPIs are assessed as Level 1 - Meets Requirements  
No KPIs result in an abatement.
- 3.2. In Period 3 of Financial Year 3 all KPIs are assessed as Level 1 - Meets Requirements with the following exceptions:
  - KPI1 – assessed as Level 2 – Below Requirements
  - KPI 3 - assessed as Level 3 - Unsatisfactory
  - KPI 10 - assessed as Level 3 – Unsatisfactory

The abatement calculation for Period 3 of Financial Year 3 is therefore:



KPI1 - 10% deduction from the greater of: (a) the value of the Fee for the Period for which the KPI is measured; and (b) 10% of the aggregate Planned Preventative Maintenance Price, the Reactive Maintenance Price and the Core Team Price for that Period.

KPI3 - 15% deduction from the greater of: (a) the value of the Fee for the Period for which the KPI is measured; and (b) 10% of the aggregate Planned Preventative Maintenance Price, the Reactive Maintenance Price and the Core Team Price for that Period.

KPI10 – 7.5% deduction from the greater of: (a) the value of the Fee for the Period for which the KPI is measured; and (b) 10% of the aggregate Planned Preventative Maintenance Price, the Reactive Maintenance Price and the Core Team Price for that Period.

The total abatement shall therefore be: 32.5% = deduction from the greater of: (a) the value of the Fee for the Period for which the KPI is measured; and (b) 10% of the aggregate Planned Preventative Maintenance Price, the Reactive Maintenance Price and the Core Team Price for that Period.

- 3.3. In Period 4 of Financial Year 3 all KPIs are assessed as Level 1 - Meets Requirements with the following exceptions:

KPI1 – assessed as Level 2 – Below Requirements

The abatement calculation for Period 3 of Financial Year 3 is therefore:

KPI1 - 10% plus 5% (as this is a recurring) = 15% deduction from the greater of: (a) the value of the Fee for the Period for which the KPI is measured; and (b) 10% of the aggregate Planned Preventative Maintenance Price, the Reactive Maintenance Price and the Core Team Price for that Period.



**Schedule 18e****Additional Works Clearance Times****1. General**

- 1.1. The Supplier shall attend and rectify instructed Additional Works requests within the Additional Works Clearance Times set out below.
- 1.2. The Additional Works Clearance Time starts from instruction to proceed via the Company's Asset Management System using the Additional Works "Metro Maximo Work Order status change" as detailed in Appendix K (AMS Supplier Processes) to the Specification.
- 1.3. Timescales shall be measured from the time the Supplier receives an instruction to deliver Additional Works from the Company up to completion of such Additional Works via closing of the associated Additional Works Work Order.
- 1.4. The Supplier shall provide a 24/7 call centre capability to respond to all Additional Works reported by the Company. The Supplier's call centre facility shall be the contact point for the Company and must be operated at all times by suitably trained and competent staff. The call centre facility shall receive from and share data with the Company as required.
- 1.5. The Supplier shall update all attendances made to the Additional Works issued within two (2) hours of leaving the relevant Site and close out all Additional Works Work Orders within the applicable Additional Works Clearance Time.

**2. Additional Works Clearance Times**

- 2.1. The Additional Works Clearance Times are set out in the following table:

Priority Level	Priority Name	Description	Action	Additional Works Clearance Times -
A1	Emergency	Priority 1 and/or 2 RMWOs associated to a fault which has an adverse effect on customers or operational safety or security or restricts normal operation of the building/facility/Site, however the services applicable are chargeable outside the contract.	Permanent Rectification	*The time specified by the Company in the relevant RMWO
A2	Urgent	Services which are chargeable outside the contract, but deemed to have an adverse effect on customers or operational safety or security or restrict normal operation of the building/facility/Site and does cause immediate disruption or	Permanent Rectification	*48-hours from start



Priority Level	Priority Name	Description	Action	Additional Works Clearance Times -
		inconvenience and/or safety impact		
A3	Non-urgent	Services which are chargeable outside the contract, but do not impinge on the normal operation or use of the building/facility/Site, but do not cause immediate disruption or inconvenience and no safety impact	Permanent Rectification	*7-days from start
A4	Routine	Services which are chargeable outside the contract and have no impact on the normal operation or use of the building/facility/Site and does not cause immediate disruption or inconvenience or safety impact.	Permanent Rectification	*three (3) months from start
A5	Minor Project	Services which are chargeable outside the contract and requires small project planning to deliver the OPEX works. There is no impact on the normal operation or use of the building/facility/Site and does not cause immediate disruption or inconvenience or safety impact.	Permanent Rectification	*six (6) months from start



**Schedule 19**

**Strategic Labour Needs and Training**

## SCHEDULE 19

### Strategic Labour Needs and Training

- 1 Without prejudice to the other provisions of this Contract relating to the Supplier Personnel, this Schedule 19 (Strategic Labour Needs and Training) sets out the Supplier's obligations in respect of:
  - 1.1 supporting the TfL Group (and any third parties nominated by the TfL Group) in the implementation of the Skills and Employment Strategy; and
  - 1.2 ensuring that the Supplier attracts, develops and retains the Supplier Personnel with the skills necessary to deliver the Services throughout the term of the Contract.
- 2 In this Schedule 19 (Strategic Labour Needs and Training), the following terms shall have the corresponding meanings:

**“Agreed SLNT Plan”** means the Supplier's strategic labour needs and training plan set out at Appendix 3 (*Initial/Agreed SLNT Plan*) to this Schedule 19 (Strategic Labour Needs and Training), to be prepared in accordance with the SLNT Plan Template and approved by the Company;

**“Apprentice”** means a member of the Supplier Personnel who is registered as an apprentice or technician with an industry recognised body;

**“Implementation Plan”** means the Supplier's implementation plan for delivering the Supplier's strategic labour needs and training plan in the form set out in Appendix 4 (Implementation Plan) of this Schedule 19 (Strategic Labour Needs and Training) submitted by the Supplier in accordance with paragraph 6 and updated from time to time in accordance with paragraph 7.2;

**“Initial SLNT Plan”** means the initial strategic labour needs and training plan set out at Appendix 3 (*Initial/Agreed SLNT Plan*), submitted by the Supplier prior to the Commencement Date and to be agreed between the Parties in accordance with paragraphs 3 to 7 of this Schedule 19 (Strategic Labour Needs and Training);

**“Quarterly SLNT Monitoring Report”** means the report to be prepared by the Supplier in the form set out at Appendix 5 (*Quarterly SLNT Monitoring Report Template*) to this Schedule 19 (Strategic Labour Needs and Training) and submitted to the Company in accordance with the provisions of paragraph 10 of this Schedule 19 (Strategic Labour Needs and Training);

**“Skills and Employment Strategy”** means the TfL Group's ten (10) year skills and employment strategy, as amended from time to time. A copy of the current Skills and Employment Strategy is provided at Appendix 1 (*Skills and Employment Strategy*) to this Schedule 19 (Strategic Labour Needs and Training);



<b>“SLNT Co-ordinator”</b>	has the meaning set out in paragraph 8 of this Schedule 19 (Strategic Labour Needs and Training);
<b>“SLNT Infraction”</b>	means any breach by the Supplier of any of its obligations under this Schedule 19 (Strategic Labour Needs and Training);
<b>“SLNT Output”</b>	means the minimum number of Apprentice positions or equivalent to be delivered by the Supplier (either directly through its own personnel or the personnel of its Sub-Contractors) under this Contract, as identified and agreed in the Agreed SLNT Plan; and
<b>“SLNT Plan Template”</b>	means the template for the Initial SLNT Plan set out at Appendix 2 ( <i>SLNT Plan Template</i> ) to this Schedule 19 (Strategic Labour Needs and Training), to be completed by the Supplier.

### **Agreed SLNT Plan**

- 3** Based on the Initial SLNT Plan, the Supplier shall:
  - 3.1 further develop the Initial SLNT Plan to reflect the comments and requirements of the Company; and
  - 3.2 submit a revised copy of the Initial SLNT Plan to the Company for approval within twenty (20) Working Days of the Commencement Date.
- 4** If the Initial SLNT Plan is:
  - 4.1 approved, it shall be adopted immediately and become the Agreed SLNT Plan; or
  - 4.2 not approved, the Supplier shall amend the Initial SLNT Plan and re-submit it to the Company for approval within the time period agreed in writing between the Parties. If the Company does not approve the Initial SLNT Plan following its resubmission, the matters preventing such approval shall be resolved in accordance with the Dispute Resolution Procedure.
- 5** Any changes or amendments to the Agreed SLNT Plan shall be subject to the contract variation procedure and shall not be implemented until approved in writing by the Company.
- 6** In order to facilitate the efficient implementation of the Supplier's SLNT requirements as contained in the Agreed SLNT Plan, the Company will also require the Supplier to prepare an Implementation Plan in the form set out in Appendix 4 to this Schedule 19 (Strategic Labour Needs and Training). The Implementation Plan shall:
  - 6.1 be completed within three (3) months of the Services Commencement Date; and
  - 6.2 either be prepared after the Agreed SLNT Plan has been adopted or in conjunction with it.
- 7** Without limiting any other provision of this Contract, the Supplier shall:
  - 7.1 comply with provisions of the Agreed SLNT Plan; and

- 7.2 at no additional cost to the Company and subject to the provisions of paragraph 5 above, review and amend the Agreed SLNT Plan and Implementation Plan:
  - 7.2.1 three (3) months prior to the Services Commencement Date; and
  - 7.2.2 every twelve (12) months following the Services Commencement Date or at other times requested by the Company, to reflect:
    - 7.2.2.1 Good Industry Practice;
    - 7.2.2.2 any changes to the nature of the Services or Assets; and
    - 7.2.2.3 any amendments proposed by the Company.

#### **SLNT Co-ordinator**

- 8 Within twenty (20) Working Days of the Commencement Date, the Supplier shall nominate a member of Supplier Personnel with the necessary skills and authority to:
  - 8.1 be responsible for the implementation and on-going development and maintenance of the Agreed SLNT Plan; and
  - 8.2 act as the single point of contact for personnel of the Company on all matters concerning the Agreed SLNT Plan,  
  
(the "SLNT Co-ordinator").
- 9 The Parties shall add the SLNT Co-ordinator to the list of Key Personnel set out at Schedule 1 (Contract Data).

#### **Monitoring and Reporting**

- 10 The Supplier shall provide the Company with a Quarterly SLNT Monitoring Report within ten (10) Working Days of Quarter end date. This will detail the Supplier's performance against the Agreed SLNT Plan.
- 11 Failure to provide the Company with a copy of the Quarterly SLNT Monitoring Report within the timescales set out in paragraph 10 above shall constitute a Level 1 Non-Conformance in accordance with Schedule 18 (Performance Measurement).
- 12 The Supplier shall ensure at all times that it complies with the requirements of the Data Protection Legislation (as may be amended) in the:
  - 12.1 development and maintenance of its training plans; and
  - 12.2 collection and reporting of the information to the Company pursuant to paragraph 10 above.

#### **SLNT Infractions**

- 13 Failure to:

- 13.1 ensure that each SLNT Output for the monitoring period is delivered in accordance with the Agreed SLNT Plan; and/or
- 13.2 review the Agreed SLNT Plan in accordance with paragraph 7,  
  
shall constitute a Level 1 Non-Conformance in accordance with Schedule 18 (Performance Measurement).

#### **SLNT Audit**

- 14 The Company may from time to time undertake any audit or check of any and all information regarding the Supplier's compliance with the provisions of this Schedule 19 (Strategic Labour Needs and Training).
- 15 The Supplier shall maintain and retain records relating to the Agreed SLNT Plan and its compliance with the provisions of this Schedule 19 (Strategic Labour Needs and Training) for a minimum of seven (7) years.
- 16 The Company shall use reasonable endeavours to co-ordinate such audits and to manage the number, scope, timing and method of undertaking audits so as to ensure that the Supplier is not, without due cause, disrupted or delayed in the performance of the Supplier's obligations under this Contract.
- 17 The Supplier shall promptly provide all reasonable co-operation in relation to any audit or check including, to the extent reasonably possible in each particular circumstance:
  - 17.1 granting or procuring the grant of access to any:
    - 17.1.1 premises used in the Supplier's performance of this Contract, whether the Supplier's own premises or otherwise;
    - 17.1.2 equipment (including all computer hardware and software and databases) used (whether exclusively or non-exclusively) in the performance of the Supplier's obligations under this Schedule, wherever situated and whether the Supplier's own equipment or otherwise; and
  - 17.2 complying with the Company's reasonable requests for access to senior personnel engaged in the Supplier's performance of this Contract.

## **APPENDIX 1 TO SCHEDULE 19**

### **Skills and Employment Strategy**

A copy of the Transport Infrastructure Skills Strategy can be obtained from:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/495900/transport-infrastructure-strategy-building-sustainable-skills.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/495900/transport-infrastructure-strategy-building-sustainable-skills.pdf)

A copy of the Transport Infrastructure Skills Strategy (TISS) – Four Years of Progress - can be obtained from:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/934395/DfT\\_Transport-Infrastructure-Skills-Strategy-four-years-of-progress-STAT-accessible.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/934395/DfT_Transport-Infrastructure-Skills-Strategy-four-years-of-progress-STAT-accessible.pdf)

APPENDIX 2 TO SCHEDULE 19

SLNT Plan Template

Title – SLNT Activity Breakdown

Please complete the following table outlining how you intend to meet your SLNT commitments.

Table 1:

SLNT Activity Area	Priority Output	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Cross Check	
								SLNT Value	SLNT Totals
Apprenticeship Job Starts									
New Entrant - Level 2-3 (FTE)	Y						0	1	0
New Entrant - Level 4+ (FTE)	Y						0	1.5	0
Social Mobility Level 2-3 (FTE)	Y						0	1	0
Social Mobility Level 4+ (FTE)	Y						0	1.5	0
Existing Employee Level 2-3 (FTE)	Y						0	1	0
Existing Employee Level 4+ (FTE)	Y						0	1.5	0
Apprenticeship Success									
Completion (FTE)							0	1	0
Job Creation									
Social Mobility (FTE)							0	1	0
Educational/Career Support									
Targeted Placement Positions (Days)							0	10	0
Placement Positions (Days)							0	20	0
Educational Engagement (Days)							0	20	0
Equivalent Contract Value							Total SLNT Activity		0
Services	£0						Priority Activities		0
Construction / Manufacturing	£0								

## Strategic Labour Needs and Training Method Statement

### **A) Delivery of SLNT Activity Breakdown**

Referring to the SLNT Activity Breakdown outlined in Table 1, provide a method statement of how you will undertake activities in each of the SLNT areas.

Any areas where you are not proposing to undertake activity should be left blank.

You may use up to [250] words in each of the following boxes.

#### **Apprentice Job Start – New Entrant**

Method statement shall include:

- Attraction and Recruitment
- Apprenticeship Frameworks & Standards
- Training Provider
- Funding
- Apprentice welfare – Terms, Conditions and Benefits

**Content:**

#### **Apprentice Job Start – Social Mobility**

Method statement shall include:

- Attraction and Recruitment
- Apprenticeship Frameworks & Standards
- Training Provider
- Funding
- Apprentice welfare – Terms, Conditions and Benefits
- Engagement with charities and referral partners

**Content:**

#### **Apprentice Start – Existing Staff**

Method statement shall include:

- Generating interest in the existing workforce
- Apprenticeship Frameworks & Standards
- Training Provider
- Funding

**Content:**

#### **Apprentice Success – Completion**

Method statement shall include:

- Support provided to ensure timely completion of the Apprenticeship
- Career pathways and opportunities available for successful Apprentices



<ul style="list-style-type: none"> <li>• How Apprentices that are not retained are supported into work upon completion of the Apprenticeship</li> </ul> <p><b>Content:</b></p>
<p><b>Job Start - Social Mobility</b></p> <p>Method statement shall include:</p> <ul style="list-style-type: none"> <li>• Target groups or priorities</li> <li>• Possible job roles available</li> <li>• Training and support to retain the job start</li> <li>• Charities and partner engagement to find suitable candidates</li> </ul> <p><b>Content:</b></p>
<p><b>Targeted Placement Positions</b></p> <p>Method statement shall include:</p> <ul style="list-style-type: none"> <li>• The target group(s) and the method of finding the candidates</li> <li>• Placement objectives</li> <li>• Typical length and type of placement</li> </ul> <p><b>Content:</b></p>
<p><b>Placement Positions</b></p> <p>Method statement shall include:</p> <ul style="list-style-type: none"> <li>• The target group(s) and the method of finding the candidates</li> <li>• Placement objectives</li> <li>• Typical length and type of placement</li> </ul> <p><b>Content:</b></p>
<p><b>Educational Engagement</b></p> <p>Method statement shall include:</p> <ul style="list-style-type: none"> <li>• The target educational establishments</li> <li>• Objectives of engagement</li> <li>• Engagement activities</li> </ul> <p><b>Content:</b></p>
<p><b>B) Transport Infrastructure Skills Strategy Diversity and Inclusion Commitments</b></p> <p>Indicate what actions you will undertake to work towards meeting the following commitments contained within the Transport Infrastructure Skills Strategy:</p> <ul style="list-style-type: none"> <li>• 20% of new entrants to engineering and technical apprenticeships in the transport sector to be women by 2020, and to achieve parity with the working population at the latest by 2030.</li> <li>• A 20% increase in the number of BAME candidates undertaking apprenticeships by 2020.</li> </ul> <p>This shall include:</p>

- Engagement, attraction, retention and development strategies for candidates from underrepresented groups;
- Details of any programmes you will join or partnerships you will form with external organisations such as charities and employability groups;
- What steps you will take to ensure your recruitment is fair and open.

**Content: (Max 250 words)**

### **C) Supply Chain Compliance**

If you are using sub-contractors in your work programme, please outline how you will ensure your SLNT requirements will be met through your sub-contractors. This shall include:

- How you will include SLNT considerations in your selection, contracting and management of sub-contractors;
- How you intend to ensure your sub-contractors are aware of appropriate TfL/government support and funding streams for any SLNT activity they will be undertaking towards your stated SLNT Outputs; and
- How will you facilitate engagement between TfL's Supplier Skills Manager and your supply chain.
- How you will ensure complete and accurate reporting to TfL of supply chain apprenticeship starts and SLNT activity.

**Content: (Max 250 words)**

### **D) SLNT Implementation, Monitoring & Co-ordination**

What arrangements you will put in place to put the plan into action during contract including:

- Describe who will be responsible for implementing, managing and reporting SLNT activity within your company;
- What are the administrative and management arrangements that will be operated in relation to your SLNT activity?
- How will the proposed role/ structure interact with TfL?
- The transfer of knowledge from bid team to the project team;
- Engagement with TfL to develop the agreed Implementation Plan; and
- Appointment of the SLNT Co-ordinator and establishment of the required administration, management and reporting structure.

**Content: (Max 250 words)**

### **E) Assumptions, Risks and Support from Supplier Skills Manager (SSM)**

Indicate the assumptions made in the creation of this method statement and activity table. Include any anticipated risks and how these will be mitigated.

Provide details of any support that you anticipate requiring from the TfL Company's Representative

**Content: (Max 250 words)**



APPENDIX 4 TO SCHEDULE 19

Implementation Plan

1 Contact Information															
TfL Contract								SLNT Coordinator							
Supplier Name								Current Phone Number							
Contract Manager								Contact Email							
TfL Stakeholder/SRM								Plan Period							
Reporting Requirements												Plan Review Date			
Supplier Skills Manager															
2 Overview and Background															
2.1 Overview: Please provide an overview of the contract/ project to which the SLNT requirements have been applied															
2.2 Method: Please outline how you will deliver your SLNT requirements with particular focus on TfL priority outputs															

2.3 - Forecast Outputs: Please indicate in the table below forecasted SLNT outputs											
	Apprentices						Job Creation	Educational / Career Support			
	Job Start (FTE)		Workless (FTE)		Existing Staff (FTE)		Completion	Social Mobility (FTE)	Targeted Placement (Days)	Placement (Days)	Educational Engagement (Days)
	Level 2 - 3	Level 4+	Level 2 - 3	Level 4+	Level 2 - 3	Level 4+					
Previous Year											
June											
July											
August											
September											
October											
November											
December											
January											
February											
March											
April											
May											
June											
Annual Total	0	0	0	0	0	0	0	0	0	0	0
Future Years											
TOTAL											

2.4 - Milestones: Please detail key milestones related to the delivery of your SLNT outputs											
Milestone 1							Milestone 6				
Milestone 2							Milestone 7				
Milestone 3							Milestone 8				
Milestone 4							Milestone 9				
Milestone 5							Milestone 10				

2.5 - Partners: Please detail any partner organisations that will assist you in your SLNT delivery (Organisation and Key Contact)											
Partner 1							Partner 6				
Partner 2							Partner 7				
Partner 3							Partner 8				
Partner 4							Partner 9				
Partner 5							Partner 10				

3. Risks: Please detail any risks and associated mitigation measures for the delivery of your SLNT requirements											
	Risk						Likelihood				
1											
2											
3											
4											
5											

4. Communications: Please outline any planned SLNT communication, events or publications (internal and external) and how TIL will be notified

5. Monitoring: You are required to complete the three monitoring templates attached to this document (Sheet 1,2 & 3 of this document)

1. SLNT Monitoring Form - Outlines SLNT Outputs for each reporting period

2. Job Start/Engagement Monitoring Form

3. Apprentice Monitoring Form

6. Sign Off:

Suppliers SLNT Co-ordinator (Name)										Date	
TIL Supplier Skills Manager (Name)										Date	
Implementation Plan Review Date											

APPENDIX 5 TO SCHEDULE 19

Quarterly SLNT Monitoring Report Template

SLNT Reporting Table									
Organisation									
TfL Contract / Project									
Date									
SLNT Reporting Period (Quarter)									
SLNT Activity Area	Priority Output	Annual Target	Annual Forecast	Outputs this Period	Total Outputs to date	Cross Check SLNT Value SLNT		Additional Detail / Information	
Apprentices (monitoring data to be provided on Sheet 3)									
New Entrant - Level 2-3 (FTE)	Y					1	0		
New Entrant - Level 4+ (FTE)	Y					1.5	0		
Social Mobility - Level 2-3 (FTE)	Y					1	0		
Social Mobility - Level 4+ (FTE)	Y					1.5	0		
Existing Employee - Level 2-3 (FTE)	Y					1	0		
Existing Employee - Level 4+ (FTE)	Y					1.5	0		
Apprenticeship Success (monitoring data to be provided on Sheet 2)									
Completion (FTE)						1	0		
Job Creation (monitoring data for placements to be provided on Sheet 2)									
Social Mobility (FTE)						1	0		
Job Creation (monitoring data to be provided on Sheet 2)									
Targeted Placement Position (Days)						10	0		
Placement Positions (Days)						20	0		
Educational Engagement (Days)						20	0		
						Total SLNT Activity	0		
						Priority Activities	0		
Highlights: Please provide further information on the activities undertaken in this reporting period. This could include a summary of the apprenticeships/job starts delivered, key partners/organisations that you have engaged with, schools/career fairs attended and placements offered.									
Issues / Concerns / Risks: Please highlight any issues that have impacted your SLNT delivery.									



### Part 1 - SLNT Outputs (Excluding Apprentices)

[illegible]

[illegible]

Execution Version

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**Schedule 20**

*Training*

## **Schedule 20**

### **Training**

<b>Course Title</b>	<b>Required</b>	<b>Comments</b>
Sentinel ICI (with LU endorsement)	All Supplier Personnel undertaking maintenance activities at Sites	Sufficient endorsed Supplier Personnel for cover
Industry Common Induction (with LU endorsement)	On all Sentinel ICI endorsements	
Basic Track Awareness	Required by all Supplier Personnel working in the vicinity of live traction and/or moving vehicles on London Underground ("LU") premises	Sufficient trained Supplier Personnel for cover
Protecting Workers on the Track	Required by Supplier Personnel protecting others or themselves when working on LU track locations	Sufficient trained Supplier Personnel for cover
Depot Area 'A' Familiarisation	Required by all Supplier Personnel working at LU depots. Supplier Personnel will be required to attend individual courses for each depot	Sufficient trained Supplier Personnel for cover
Trams Depot (Croydon) Induction	Required by all Supplier Personnel working at the depot	Sufficient trained Supplier Personnel for cover
Trams Safety Awareness	Required by all Supplier Personnel working on or near the trams track	Sufficient trained Supplier Personnel for cover
London Overground – General Induction	Required by all Supplier Personnel when working on the East London line and/or West Anglia stations	Sufficient trained Supplier Personnel for cover
London Overground Depot Induction for New Cross Gate Depot & Associated Sidings (Silwood)	Required by all Supplier Personnel working at the depot and sidings	Sufficient trained Supplier Personnel for cover
London Overground – Personal Track Safety	Required by all Supplier Personnel when working on or near the track	Sufficient trained Supplier Personnel for cover
London Overground – Network Rail Level 'C' Substation Comp	Required by all Supplier Personnel when entering and/or working in London Overground ("LO") substations, track paralleling huts and/or transformer rooms	Sufficient trained Supplier Personnel for cover

<b>Course Title</b>	<b>Required</b>	<b>Comments</b>
London Overground – COSS (Controller of Site Safety) or Provision of COSS	Capability required by Supplier Personnel when working on or near the track (outsourced or in-house)	Sufficient trained Supplier Personnel for cover or provision of the same
Machine Room Awareness, (Engineering and General Levels)	All work within LU and LO station lift and escalators machine rooms	Sufficient trained Supplier Personnel for cover
Equipment Room Awareness QAF 54 / Secure Room	All work within LU and LO secure rooms i.e. relay rooms, signal equipment rooms, interlocking machine rooms, station computer rooms	Sufficient trained Supplier Personnel for cover
LU Power Delivery Sub-station Competence	All Supplier Personnel undertaking maintenance in a generating station, substation or high voltage (“HV”) transformer room environment  - Substation Competent Training (unrestricted) for general maintenance	Sufficient trained Supplier Personnel for cover. The switching of Power Assets as defined within LU Cat Std S1069 shall be undertaken by Power Delivery LV1 trained and certified Supplier Personnel.
LU Safe Isolation - Levels 1, 2 & 3 (Electrical)	All Low Voltage electrical works must be undertaken and/or supervised by an appropriately certified LU safe isolation electrician at all times	Sufficient trained Supplier Personnel of appropriate levels for cover.  For any work on all electrical Low Voltage non-Power Assets, as defined within LU Cat Std S1069.
Site Person in Charge – Non Track Sites	Two or more in each shift, and all mobile teams	Sufficient trained Supplier Personnel for cover
RFLi PTS – Personal Track Safety	Required by Supplier Personnel when working on or near the track	Sufficient trained Supplier Personnel for cover
RFLi PRS (Personal Railway Safety)	Required by Supplier Personnel when working on or near the track	Sufficient trained Supplier Personnel for cover
RFLi - STL (Safe task Leader)	Required by Supplier Personnel when working on or near the track	Sufficient trained Supplier Personnel for cover

<b>Course Title</b>	<b>Required</b>	<b>Comments</b>
RFLi – HV-CP (High Voltage Competent Person)	Required by Supplier Personnel accessing and/or working in HV switching and transformer rooms	Sufficient trained Supplier Personnel for cover
RFLi- LV-CP (Low Voltage Competent Person)	Required by Supplier Personnel accessing and/or working in low voltage (“LV”) rooms and locations	Sufficient trained Supplier Personnel for cover
LU - First Aid	Site Person in Charge (SPC) or nominated responsible person only	Sufficient trained Supplier Personnel for cover
LO – Emergency First Aid	Required by all Supplier Personnel working in substations (as per Level ‘C’ Competency)	Sufficient trained Supplier Personnel for cover
Confined Space	When working in areas designated as confined spaces	Sufficient trained Supplier Personnel for cover
PASMA	Required when working using high level access	Sufficient trained Supplier Personnel for cover
IPAF	Required when working using motorised access platforms	Sufficient trained Supplier Personnel for cover
High Level Access Training	Required where specialist access is required.  Typically, at 7 no. Jubilee Line stations awareness training for high level gantry systems is required to access public area lighting.	Sufficient trained Supplier Personnel for cover
CompEx	All maintenance personnel carrying out works at Greenwich Power Station	Sufficient trained Supplier Personnel for cover
NEBOSH	Health and Safety Manager	



Course Title	Required	Comments
IOSH Level Two	All contract managers and Health and Safety Advisors	
Asbestos Basic Awareness (ezone Asbestos Awareness) available here:  <a href="https://tfl.kallidussuite.com/learn/#/course/c9e815c8-f6cb-4264-990e-f8bb5f77394a">https://tfl.kallidussuite.com/learn/#/course/c9e815c8-f6cb-4264-990e-f8bb5f77394a</a>	All maintenance personnel, project managers and asset managers	<u>Basic Awareness</u>  Individual shall understand the risks associated with asbestos-containing materials and their management.
Asbestos Practitioner Level (ezone Asbestos Awareness (as above) & experience of how hazardous materials risk is managed on site)	All maintenance managers, Site supervisors, Site person in charge	<u>Practitioner Level</u>  Individual shall have a proficient understanding of the Control of Asbestos Regulations 2012 and how these are applied within the TfL environment. Understand limitations of responsibility and when expert advice is required.

**SECURITY**

<b>Title</b>	<b>Required</b>	<b>Comments</b>
British Transport Police vetting process / management	All Supplier Personnel accessing and/or undertaking maintenance activities in rooms in use by or used by British Transport Police personnel	Sufficient certified Supplier Personnel for cover
Heathrow Airport's vetting and security clearance	All Supplier Personnel accessing and/or undertaking maintenance activities requiring access to any premises within Heathrow Airport's jurisdiction	Sufficient certified Supplier Personnel for cover
Basic Type Disclosure from Disclosure Scotland	All Supplier Personnel accessing and/or undertaking maintenance activities at the power control centre (location to be confirmed at a later point during the tender stage), or in a generating station, substation, HV transformer room or Greenwich Power Station environments	Required prior to undertaking LU Power Delivery Sub-station or LU Power Delivery Sub-station Competence

**Schedule 21****Direct Vision Standard****1 Introduction**

1.1 In this Schedule, the following terms shall have the corresponding meanings:

**“Agreed DVS Plan”** means the Initial DVS Plan as updated and approved in accordance with the terms of this Schedule 21 (*Direct Vision Standard*); and

**“Initial DVS Plan”** means the initial plan set out at Appendix 1 to this Schedule 21 (*Direct Vision Standard*) which sets out how the Supplier shall ensure that:

- (a) from and including 26 October 2019, all Category N3 HGVs used in the provision of the Services achieve a minimum of a one (1) star Direct Vision Standard rating; and
- (b) from and including 26 October 2023 all Category N3 HGVs used in the provision of the Services achieve a minimum of three (3) star Direct Vision Standard rating.

**2 DVS Plan**

2.1 The Supplier shall comply with the Initial DVS Plan from the Commencement Date. Within fifteen (15) Working Days of the Commencement Date the Company shall either:

- (a) confirm that the Initial DVS Plan is approved, in which case such plan shall become the Agreed DVS Plan; or
- (b) provide the Supplier with any comments on and/or amendments to the Initial DVS Plan.

2.2 Within thirty (30) Working Days (for the purposes of paragraph 2.1(b)) or fifteen (15) Working Days (for the purpose of paragraph 2.3(b)) of receipt of any comments and/or amendments from the Company in accordance with paragraph 2.1(b) or paragraph 2.3(b) (as applicable), the Supplier shall:

- (a) develop the Initial DVS Plan to reflect such comments and/or amendments; and
- (b) submit an updated Initial DVS Plan to the Company for approval.

2.3 Within fifteen (15) Working Days of receipt of the updated Initial DVS Plan, the Company shall confirm that the updated Initial DVS Plan is either:

- (a) approved, in which case it shall become the Agreed DVS Plan; or

- (b) not approved and provide its further comments and/or amendments to the Supplier and the Supplier shall revise and re-submit the updated Initial DVS Plan for approval in accordance with paragraph 2.2.

The process set out in this paragraph 2.3 shall be repeated until the updated Initial DVS Plan is approved by the Company.

- 2.4 Where the Company, acting reasonably, has not approved the updated Initial DVS Plan, the Supplier may refer that decision to the dispute resolution process set out in Schedule 5 (*Dispute Resolution Procedure*).

- 2.5 Without limiting any other provision of this Contract, the Supplier shall, at no additional cost to the Company, and as part of the Services:

- (a) implement, observe and comply with the Agreed DVS Plan; and
- (b) review and amend the Agreed DVS Plan (as necessary) on each anniversary of the Commencement Date or earlier if requested by the Company, to reflect:
  - (i) any changes to the nature of the Services; and
  - (ii) any comments and/or amendments made or proposed by the Company.

### **3 DVS Co-ordinator**

- 3.1 The Supplier shall nominate an employee / member of the Supplier Personnel with the necessary experience, competency and authority to:

- (a) be responsible for implementation and compliance with the Agreed DVS Plan; and
- (b) act as the Supplier's authorised representative on all matters concerning the Agreed DVS Plan ("**DVS Co-ordinator**").

- 3.2 The Supplier shall add the DVS Co-ordinator's details to the list of Key Personnel set out in Appendix 0 (*Key Personnel*) to Schedule 1 (*Contract Data*).

### **4 Self Certification and Reporting**

- 4.1 On each anniversary of the Commencement Date, the Supplier shall submit a report to the Company which sets out the Supplier's progress in respect of the implementation of the Agreed DVS Plan and confirms (with supporting evidence) that the Supplier has complied with the Agreed DVS Plan.













**Schedule 22**

*Not Used*

**Schedule 23**

**Ethical Sourcing and Modern Slavery Action Plan**

**Schedule 23**

**Ethical Sourcing and Modern Slavery Action Plan**

- 1 The Supplier shall implement an Ethical Sourcing and Modern Slavery Action Plan (“Action Plan”) designed to protect workers from labour exploitations and human rights abuses and ensure compliance with the Modern Slavery Act 2015 and the Responsible Procurement Policy in accordance with Appendix 1 to this Schedule 23 (*Ethical Sourcing and Modern Slavery Action Plan*).
- 2 The Supplier shall, within ninety (90) days of the Commencement Date produce to the Company an Action Plan identifying the main risks of modern slavery, human trafficking, forced and bonded labour and human rights violations in its supply chain, highlighting the main products and countries involved and the steps to be taken by the Supplier to mitigate the risks in the short, medium and long term.
- 3 The costs of the creation and implementation of the Action Plan shall be borne by the Supplier.
- 4 The Supplier will update and provide to the Company the Action Plan annually (within five (5) Working Days of the anniversary of the Commencement Date) for the duration of the Contract. More regular updates will be provided when risks of modern slavery, human trafficking, forced and bonded labour and human rights violations in its supply chain are assessed as imminent either the Supplier or the Company.
- 5 The Supplier shall, where relevant, train its employees and other personnel and subcontractors to ensure compliance with this Schedule 23 (*Ethical Sourcing and Modern Slavery Action Plan*). The Supplier shall keep a record of all training completed by its employees and other personnel and subcontractors and shall make a copy of the record available to the Company on request.
- 6 During the course of the Contract, if the Company has reasonable cause to believe that the Supplier is not complying with any provision of this Schedule 23 (*Ethical Sourcing and Modern Slavery Action Plan*) or Clause 34 of the Contract:
  - (a) the Company shall notify the Supplier; and
  - (b) the Parties shall agree a remediation plan (“Remediation Plan”) with appropriate timeframes for compliance by the Supplier, such Remediation Plan to be agreed by the Parties by no later than thirty (30) days from the date of the Company’s notification to the Supplier that remedial action is required or such other period as the Parties may otherwise agree in writing (and where the Parties fail to agree the plan within such time, the Company shall determine the Remediation Plan).

- 7 The costs of the creation and implementation of the Remediation Plan shall be borne by the Supplier.
- 8 Following the agreement or determination of the Remediation Plan, the Company reserves the right to conduct, or require to be conducted, one or more audits, (either itself or via a third party auditor approved by the Company) in relation to compliance by the Supplier with the Remediation Plan.
- 9 For the avoidance of doubt, the right of audit referred to in paragraph 8 above shall include, without limitation the right of the Company (or an auditor appointed by the Company) acting reasonably to:
  - (a) undertake physical inspections of relevant Locations/factories;
  - (b) conduct interviews with relevant personnel; and
  - (c) inspect relevant documents.
- 10 The Supplier shall co-operate with the Company and/or the Company's auditor in relation to all aspects of any audit undertaken pursuant to paragraph 8 above.
- 11 The Supplier shall make the audit reports required pursuant to paragraph 9 available to the Company through the Supplier's Ethical Data Exchange ("Sedex"), or an equivalent process.



## **Appendix 1**

### **Action Plan**

- 1 The Supplier must prepare its Action Plan using the guidance information and template below. The Supplier's Action Plan should be no longer than ten (10) pages in length (excluding relevant policies or similar documents that may be included as appendices) and include:
  - (a) the Supplier's Ethical Sourcing Policy, highlighting its key ethical sourcing objectives and the means by which the objectives will be achieved over the duration of the Contract;
  - (b) the Supplier's processes in place to comply with, and any additional processes to be put in place in order to adhere to the principles of the Ethical Trading Initiative (ETI) Base Code, or an equivalent code of conduct;
  - (c) identification of the main risks of modern slavery, human trafficking, forced and bonded labour and human rights violations in the Supplier's supply chain, highlighting the main products and source countries involved and the steps the Supplier is taking/will take to mitigate the risks in the short, medium and long term (including appropriate ethical sourcing training for the Supplier's buying staff and other relevant employees);
  - (d) the steps the Supplier will take to ensure that its subcontractors implement ethical sourcing policies similar to its own;
  - (e) the methods by which the Supplier proposes to monitor and report on the steps it has taken to mitigate risks and their effectiveness; and
  - (f) the Supplier's plan may include commissioning a social audit at Locations of supply, which may be shared with the Company through Sedex.

ETI Base Code Item (Examples)	Modern Slavery or Other Risk of Human Rights Abuse (Examples)	Mitigating or Capacity Building Action	When	Person Responsible	Resource Implications	Measure of Success

**Schedule 24**

**Cyber Security**

## **Schedule 24**

### **Cyber Security**

#### **1 SECURITY STANDARDS**

- 1.1 In this Schedule 24 (Cyber Security) the terms set out in Appendix 2 shall have the meaning therein.
- 1.2 Where the Supplier is processing or storing TfL Data on a regular basis, there will be a requirement for the Supplier to be:
- (a) independently certified to ISO/IEC 27001:2013 or latest version, with a scope which covers TfL's Data; and
  - (b) independently tested to verify that the systems used to process TfL Data meet the requirements of the UK government promoted Cyber Essentials Scheme and/or Network & Information Systems (NIS) Directive.

#### **2 SECURITY PRINCIPLES**

- 2.1 The Supplier acknowledges that security, data protection and confidentiality are of fundamental importance in relation to its performance of this Contract and the Company's ability to retain public confidence. The Supplier shall always comply with the security principles set out in this paragraph in the performance of this Contract.
- 2.2 In recognition of the importance that the Company places on security, data protection and confidentiality, the Supplier shall ensure that a director or relevant individual of the Supplier, as agreed by the Company, is made aware of the risks set out in the Security Management Plan and is assigned overall responsibility for ensuring that:
- (a) appropriate members of the Supplier Personnel and the Supplier's management team take responsibility for managing the different levels of security risk and promoting a risk management culture;
  - (b) a Security Risk Register is produced and maintained throughout the term of the Contract and that all Security Risks are documented in an appropriate manner and are included in any contract risk register for this Contract if one is in place. The Security Risk Register must be available for audit when reasonably required by the Company;
  - (c) a Service Asset Register is produced and maintained throughout the term of the Contract and that all Service Assets are documented in an appropriate manner in the service asset register and shall identify the criticality of the relevant Supplier assets in the delivery of this Contract. The Supplier's service asset register must be available for audit when reasonably required by the Company; and

- (d) supporting policies are implemented (where relevant) and communicated with Supplier Personnel.

2.3 The Supplier shall, and the Supplier shall procure that its Sub-Contractors shall, at all times ensure that:

- (a) security threats to TfL Data, the Supplier's IT environment, and the Services are minimised and mitigated;
- (b) the Services fully comply at all times with:
  - (i) the Security Requirements set out in Appendices 1 and 3 of this Schedule 24 (Cyber Security), or as otherwise agreed in the Security Management Plan;
  - (ii) the Security Management Plan; and
  - (iii) Good Industry Practice.

2.4 The Supplier shall not (and shall procure that its Sub-Contractors shall not) use any Cloud Services for, or in connection with, the performance of this Contract (including in relation to any TfL Data) without the Company's prior written approval and, if so provided, the Supplier shall ensure that any such Cloud Services complies with this Schedule 24 (Cyber Security).

### **3 SECURITY MANAGEMENT PLAN**

3.1 Within the timescales identified in Appendix 1 (Security Reporting) to this Schedule 24 (Cyber Security) the Supplier shall submit to the Company for approval (and thereafter maintain) a Security Management Plan which as a minimum shall:

- (a) set out the security measures to be implemented and maintained by the Supplier in relation to all aspects of the Services and all processes associated with the delivery of the Services and shall at all times comply with and specify security measures and procedures which are sufficient to ensure the Services comply with this Schedule 24 (Cyber Security);
- (b) state any other cyber security industry standards over and above those set out in this Schedule 24 (Cyber Security) which are applicable to the Services;
- (c) state all Applicable Laws which relate to the security of the Services; and
- (d) state how the Supplier shall comply with any other security requirements that the Company may reasonably request from time to time.

- 3.2 The Supplier shall review and update the Security Management Plan at least annually and as required in response to:
- (a) changes to the Cyber Security Standards;
  - (b) emerging changes in Good Industry Practice;
  - (c) any relevant variation to the Contract and/or associated processes;
  - (d) any new perceived or changed security threats; and
  - (e) any reasonable request by the Company.
- 3.3 The Supplier shall submit any amendments to the Security Management Plan for approval by the Company.

## **Appendix 1 – Security Requirements**

### **1 RISK MANAGEMENT**

#### **1.1 The Supplier shall:**

- (a) implement a Risk Management process for the purpose of identifying, assessing, mitigating, monitoring, and reporting upon cyber security risks;
- (b) organise and manage a Risk Management forum where risks identified will be discussed and addressed (Security Reporting - Security Risks within the Risk Register);
- (c) conduct threat and risk assessments on any part of the Services that are new or have been materially changed since the last threat and risk assessment was conducted (Security Reporting - Security Risk Treatment Plan); and
- (d) ensure that risks identified will be discussed with the relevant member of the Company.

### **2 ENGAGEMENT AND TRAINING**

#### **2.1 The Supplier shall:**

- (a) screen all Supplier Personnel prior to the Supplier authorising access to the Services the Supplier is performing on the Company's behalf (Security Reporting - Joiners, Movers & Leavers Notification);
- (b) conduct criminal record checks on all Supplier Personnel who have access to any Services which the Supplier is performing on behalf of the Company. The level of checks should be consistent with British Standard 7858 (BS7858-[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/417085/BS7858.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/417085/BS7858.pdf));
- (c) ensure all Supplier Personnel have been vetted in accordance with HMG Guidance for overseas individuals – ;
- (d) make a reasonable determination of whether the individual constitutes an unreasonable security risk taking into consideration the duties of the individual, the type and sensitivity of information to which the individual may be exposed, and all Applicable Laws;
- (e) require all Supplier Personnel to proactively disclose criminal offences to the Supplier unless prohibited by Applicable Laws;



- (f) ensure that all persons employed or retained to perform the Services receive security awareness training annually and supervision at a level and in substance that is appropriate to that individual's position and the Supplier's obligations under this Contract; and
- (g) not permit any person the Supplier hires or uses to access or obtain any TfL Data unless that person is contractually bound to the Supplier in writing to keep TfL Data confidential on terms no less protective than the terms applicable to the Supplier under this Contract.

### **3 ASSET MANAGEMENT**

- 3.1 The Supplier shall implement controls to manage Service Assets throughout its lifecycle. These controls will include processes for acquiring, using, maintaining, and disposing Service Assets.
- 3.2 Service Assets used to access or manage TfL Data and performance of the Services must be under the authority of the Supplier or the Company and have a standard set of security controls deployed upon them. These Service Assets must be placed into a 'known good' state prior to being provisioned into the environment of the Supplier. Unless otherwise agreed with the Company in writing, all Supplier Service Assets are expected to meet the set of security requirements set out within Appendix 1.
- 3.3 The Supplier shall:
  - (a) maintain an inventory of all Service Assets;
  - (b) use secure methods when disposing of Service Assets;
  - (c) maintain records of the disposal of Service Assets; and
  - (d) through the operation of the Supplier's Change Management process, manage changes to any Service Asset.

### **4 ARCHITECTURE AND CONFIGURATION**

- 4.1 The Supplier shall implement and maintain security assets such as industry standard firewalls that protect the perimeter and internal components of the Services environment.
- 4.2 The Supplier shall follow industry standards for Service Asset Hardening and Secure Configuration.
- 4.3 The Supplier shall remove or disable unnecessary utilities from operating systems, configurations and restrict access rights to least privilege.

- 4.4 The Supplier will ensure that any preconfigured passwords delivered with any Service Assets are changed prior to their implementation for use in the Services environment.
- 4.5 Where the Supplier manages user authentication controls for the Supplier Personnel to access the Services, the Supplier must:
- (a) enforce minimum password complexity, such as requiring passwords to be case sensitive, or requiring passwords to contain a minimum of twelve characters and a combination of upper-case letters, lower-case letters, numbers, and/or special characters;
  - (b) require regular change of passwords at predetermined intervals, and which limit reuse; and
  - (c) require multi-factor authentication for privileged access.
- 4.6 The Supplier will establish a software development lifecycle for the purpose of defining, acquiring, developing, enhancing, modifying, testing, or implementing information systems.
- 4.7 The Supplier shall ensure that web-based and mobile applications used to store, receive, send, control or access TfL Data are monitored, controlled and secure.
- 4.8 The Supplier shall implement and manage a Change Management process to manage changes that occur within the Services environment.

## **5 VULNERABILITY MANAGEMENT**

- 5.1 The Supplier will implement and maintain a Vulnerability Management programme, which will include the following elements:
- (a) security patches will be applied to Service Assets as soon as possible in line with vendor recommendations in accordance with the Change Management Process; and
  - (b) a process to test rogue wireless access points. (Security Reporting - Wireless Access Point Scan Reports).
- 5.2 Internal and external network vulnerability tests that are carried out at least quarterly. An external, qualified party should be resourced to carry out the external network vulnerability tests. (Security Reporting - Penetration Test Report).
- 5.3 External and internal penetration tests using the Supplier's penetration testing methodology that is based on industry-accepted penetration testing approaches that cover the all-relevant systems and include application-layer as well as network-layer

tests. All test results are kept on record and any findings are remediated in a timely manner.

- 5.4 The Supplier will ensure that all penetration tests conducted upon the Services it provides are performed by approximately industry accredited organisations.
- 5.5 The Supplier shall implement an Intrusion Detection System (IDS) and/or an Intrusion Prevention Solution (IPS) technique to detect / prevent and alert on intrusions into the network.
- 5.6 The Supplier shall maintain industry standard processes for defending against malware / Trojans / virus infections. The Supplier shall maintain a programme of anti-malware/anti-virus updates to keep provisioned Service Assets free of infection.

## **6 SUPPLY CHAIN SECURITY**

- 6.1 The Supplier must maintain an inventory of all the suppliers / Sub-Contractors it utilises. This should be in the form of a supplier matrix with roles and responsibilities defined.
- 6.2 The Supplier must ensure that its suppliers and Sub-Contractors involved in the provision of the Services meet or exceed the standards set forth in this Schedule 24 (Cyber Security).
- 6.3 The Supplier must conduct security assessments upon its supply chain to ensure all its suppliers / Sub-Contractors of the Services present a low or no risk to the Services it is providing to the Company.

## **7 INCIDENT MANAGEMENT**

- 7.1 The Supplier will implement and maintain an Incident Management Plan which will be used to respond on breaches to the Service. The Incident Management Plan will include the following:
  - (a) definition of roles, responsibilities, and communication and contact strategies in the event of a compromise, including notification of customers;
  - (b) specific incident response procedures;
  - (c) analysis of legal requirements for reporting compromises;
  - (d) coverage of all critical system components;
  - (e) regular review and testing of the Incident Management Plan;
  - (f) Incident management Support Personnel that are available to support the provision of the Services;

- (g) training of Supplier Personnel;
- (h) inclusion of alerts from all security monitoring systems; and
- (i) modification and evolution of the Incident Management Plan according to lessons learned and to incorporate industry developments.

## **8 LOGGING AND MONITORING**

- 8.1 The Supplier shall implement and maintain a solution which enables all access to network resources and Tfl Data to be tracked and monitored using a centralised logging mechanism that allows thorough tracking, alerting, and analysis on a regular basis (at least daily) as well as when an abnormality/incident occurs.
- 8.2 The Supplier shall deploy and maintain a File-Integrity Monitoring solution to alert Supplier Personnel via its centralized solution to unauthorized modification of critical systems.
- 8.3 The Supplier shall ensure that all systems shall be provided with correct and consistent time and audit trails that are secure and protected, including File-Integrity Monitoring for Tfl Data classified as Confidential to prevent changes of existing Log Files and/or generate system alerts.
- 8.4 The Supplier shall ensure that audit trails for critical systems are kept for a period in-line with industry standards.

## **9 DATA SECURITY**

- 9.1 The Supplier shall:
  - (a) implement and maintain a Key Management Solution in-line with industry standards;
  - (b) implement and maintain encryption of Tfl Data while it is at rest;
  - (c) implement and maintain encryption of Tfl Data while it is in transit;
  - (d) not provide encryption keys used to secure Tfl Data to a third party or the ability to break such encryption;
  - (e) implement and maintain the logical separation of TFL Data, even in the case of equipment or technology failure;
  - (f) implement, where supported by available technology, the logical separation of audit records related to Tfl Data and activities, even in the case of equipment or technology failure, segregate tenancy traffic from management network traffic; and

- (g) not use TfL Data for test or development purposes without the written approval of the Company.

9.2 The Supplier shall segment the environment to ensure specific classified types of TfL Data are not accessible to unauthorised individuals.

9.3 The Supplier shall ensure that all Service Assets have appropriate tools or applications installed to protect against malicious software.

## **10 IDENTITY AND ACCESS MANAGEMENT**

10.1 Where Supplier Personnel are accessing any part of the Supplier's systems that may contain TfL Data, the Supplier must:

- (a) implement access control policies and procedures that address onboarding, off-boarding, transition between roles, regular access reviews, limitations and usage control of administrator privileges, and inactivity timeouts;
- (b) identify and segregate conflicting duties and areas of responsibility, such as separation of duties;
- (c) maintain a current and accurate inventory of computer accounts;
- (d) review the inventory of computer accounts on a regular basis to identify dormant, fictitious, or unused accounts;
- (e) enforce principles of "least privilege" and "need to know";
- (f) review user access rights on a regular basis to identify excessive privileges;
- (g) enforce a limit of logon attempts and concurrent sessions;
- (h) ensure that all users of the Services are allocated a single unique ID for accessing the Services environment;
- (i) ensure any system administration functionality is strictly controlled and restricted to those Supplier Personnel who need to have access to such functionality and that the ability of Supplier Personnel to change the configuration of the Service Assets is appropriately limited and fully auditable; and
- (j) ensure that Supplier Personnel are informed of what constitutes acceptable access of operational or IT technology, TfL Data and networks and the consequences of non-compliance.

## 11 COMPLIANCE

- 11.1 The Supplier shall have a documented compliance plan and conduct regular reviews (at least annually) to ensure that the security of TfL Data cannot be compromised.
- 11.2 The Company may require the Supplier to assist with the Company's Cyber Security assessment process. This may result in a full physical and logical information security review at all relevant locations in accordance with the right to audit under paragraph 7.4.8 of the Specification.
- 11.3 Unless otherwise stated, the Supplier must respond to any requests for information or data to be provided to the Company in relation to the Supplier's provision of the Services within thirty (30) days of notice.

## 12 BUSINESS CONTINUITY

- 12.1 The Supplier shall conform to the requirements specified in paragraph 3.4.9 (Business Continuity Plan) of Schedule 10 (Contract Management).

## 13 SECURITY REPORTING

The Supplier shall provide communicating metrics about security, risk, and the performance of security controls to the Company.

Supplier Reporting	Timeframe for submission to the Company
Joiners, Movers & Leavers Notification	Every three (3) months the Supplier will provide the Company with a report on all Supplier Personnel who have joined or left the delivery of the Services.
Penetration Test Report	At least annually following the Services Commencement Date or within two (2) months following each significant change to the System or Service Assets (whichever is the sooner).
Review of actions following each Security Incident	Within one (1) month after each Security Incident and each Information Security Event (following the Services Commencement Date).
Review of Security Controls	At least annually following the Services Commencement Date.
Review of the corrective and preventive actions	At least annually following the Services Commencement Date.

Security Improvement Plan	At least annually following the Services Commencement Date or within one (1) month following the identification of significant new vulnerabilities or threats (whichever is the sooner).
Security Management Plan	Within twenty (20) days of the Commencement Date.
Security Risk Assessment Methodology	Within twenty (20) days of the Commencement Date, and when significant changes to this document occurs.
Security Risk Status Reports	Monthly from the Services Commencement Date and throughout the remainder of the Term of the Contract.
Security Risk Treatment Plan	Within three (3) months of the Commencement Date, and then at least five (5) Working Days before each management meeting.
Security Risks within the Risk Register	Within three (3) months of the Commencement Date, and then at least five (5) Working Days before each management meeting.



## Appendix 2 – Definitions

<b>Asset Hardening and Secure Configuration</b>	Asset Hardening and Secure is the process of reducing the attack surface of an Service Asset.
<b>Cloud Services</b>	Cloud Computing Services is the delivery of computing services including servers, storage, databases, networking, software, analytics, and intelligence over the Internet
<b>Cyber Essentials Scheme</b>	means the UK government scheme encouraging organisations to adopt good practice in information security, focussing mainly on technical controls rather than governance, risk, and policy.
<b>File-Integrity Monitoring</b>	File Integrity Monitoring is used to monitor and alert changes to TfL Data files.
<b>Incident Management Plan</b>	An Incident management Plan is a series of steps taken to identify, analyse, and resolve critical incidents, which could lead to issues in an organisation if not restored.
<b>Intrusion Detection System (IDS)</b>	An Intrusion Detection System (IDS) is a monitoring system that detects suspicious activities and generates alerts when they are detected.
<b>Intrusion Prevention Solution (IPS)</b>	An intrusion prevention system (IPS) is a network security tool (which can be a hardware device or software) that continuously monitors a network for malicious activity and takes action to prevent it.
<b>ISO/IEC 22301</b>	means the proposed standard that specifies security requirements for disaster recovery preparedness and Business Continuity Management Systems (BCMS).
<b>ISO/IEC 27001</b>	means the information security standard specification for an Information Security Management System (ISMS), with an emphasis on measuring and evaluating how well an organisation's ISMS is performing.
<b>Key Management</b>	the activities involving the handling of cryptographic keys and other related security parameters (e.g. passwords) during the entire life cycle of the keys, including their generation, storage, establishment, entry and output, and destruction.

<b>Log File</b>	A log file is a computer-generated data file that contains information about usage patterns, activities, and operations within an operating system and/or application.
<b>Network &amp; Information Systems (NIS) Directive</b>	Network & Information Systems (NIS) Directive is intended to establish a common level of security for network and information systems.
<b>Risk Management</b>	the process of identifying, monitoring and managing potential risks in order to minimize the negative impact they may have on an organisation.
<b>Security Incident</b>	means a potential or actual event or attempted breach of security affecting the confidentiality, integrity or availability of the Service which processes or holds TfL Data.
<b>Security Policy</b>	means any Company security policies as amended by the Company from time to time.
<b>Security Risk</b>	meaning all risks associated with the security of the Services which may have a negative impact upon the agreed security posture, including information security and any risks identified pursuant to the Security Management Schedule.
<b>Security Risk Register</b>	means a register of Security Risks produced and maintained as detailed in paragraph 2 above (Security Principles).
<b>Service Asset Register</b>	means a register of all Service Assets relating to the Services connected to this Schedule 24 (Cyber Security).
<b>Service Assets</b>	means all assets and rights including all physical assets, Software, IPR, as well as spares and components whether in storage, repair or on sites, used by the Supplier to provide the Services in accordance with this Contract;
<b>Supplier Premises</b>	means any land or building where the Supplier carries out any part of this Contract
<b>TfL Data</b>	means data created, generated or collected, during the performance of the Services (or any part thereof), including Personal Data and data supplied to the Company and members of the TfL Group in connection with the Services or this Contract.

<b>Vulnerability Management</b>	Vulnerability management is the various processes, tools, and strategies of identifying, evaluating, treating, and reporting on security vulnerabilities and misconfigurations within an organisation's software and systems.
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### **Appendix 3 – List of relevant Policies and Standards**

#### **TO BE PROVIDED BY THE COMPANY UPON REQUEST**

##### P116 Information Technology Security Policy

- This policy defines the Company's requirements for managing Information Security.

##### P009 Operational Technology Cyber Security -Operations and Maintenance

- This policy defines the Company's requirements for Operations and Maintenance.

##### P008 Operational Technology Cyber Security - Projects and Upgrades

- This policy defines the Company's requirements for Projects and Upgrades.

##### P006 Operational Technology Cyber Security

- This policy defines the Company's requirements for Cyber Security in Operational Technology.

##### S1735 Information Technology Access Control

- This standard provides guidance on how employee access should be limited to different types of data.

##### S1736 Network Information Security

- This standard covers the security of all transmissions within an organisation's network.

##### S1740 Cryptography

- This standard covers best practices in encryption.

##### S1747 Physical and Environmental Security of TfL's Information Technology

- This standard describes the processes for securing buildings and internal equipment.

##### S1790 Information Security Asset Management

- This standard describes the processes involved in managing data assets and how they should be protected and secured.

##### S1791 Operational Information Security

- This standard provides guidance on how to collect and store data securely, a process that has taken on new urgency thanks to the passage of the General Data Protection Regulation (GDPR) in 2018.

#### S1793 IT System Acquisition, Development and Maintenance

- This standard details the processes for managing systems in a secure environment.

#### S1794 Information Security Supplier Management

- This standard covers how an organisation should interact with third parties while ensuring security.

#### S1795 Information Security Incident Management

- This standard covers how an organisation should manage information security incidents.

#### S1796 Information Security Aspects of Business Continuity Management

- This standard covers how business disruptions and major changes should be handled.

#### S1797 Information Technology Compliance

- This standard identifies what government or industry regulations are relevant to the organisation, such as ITAR.

#### S1771 Operational Technology Cyber Security - Projects and Upgrades

- This standard covers how Projects and Upgrades should be managed.

#### S1772 Operational Technology Cyber Security - Operations and Maintenance

- This standard covers how Cyber Security should be managed in Operations and when performing maintenance activities.