

Transport for London

Safety and Sustainability Panel

Subject: TfL Corporate Environment Strategy

Date: 4 December 2013

1 Purpose

- 1.1 The purpose of this paper is to present the Panel with the new TfL Corporate Environment Strategy.
- 1.2 The Panel is asked to note the Strategy.

2 Background

- 2.1 This is the first environment strategy to cover all of TfL's operations. London Underground originally had an Environment Strategy due to be updated this year as well as a Climate Change Strategy. The Environment Liaison Group (ELG - environment managers from across the business and Crossrail) proposed that this is the right opportunity to bring these strategies together with other work to create a single Environment Strategy for TfL.

3 Corporate Environment Strategy

- 3.1 The new TfL Corporate Environment Strategy (Appendix 1) covers issues which TfL directly manages or specifies. Policy covering London-wide environmental transport emissions, which apply to other transport users such as private vehicles as well as to TfL, such as the Ultra Low Emission Zone is outside the scope of this Strategy and is being delivered by Planning and Surface Delivery Planning.
- 3.2 This Strategy aims to deliver good practice that would be expected from a private/corporate organisation of TfL's size/turnover for improving its environmental performance – effectively setting out how we keep our own house in order.
- 3.3 The draft Strategy sets out strategic goals for environmental performance to 2031, the period of the Mayor's Transport Strategy. A key aim for this Strategy is to help deliver the Mayor's Environmental Goals. In some cases, e.g. with waste recycling, TfL is already doing better than Mayoral targets and in others, e.g. CO₂ reduction; there is still some way to go.
- 3.4 The Strategic goals are supported by objectives, targets and indicators. A detailed delivery plan for five year intervals is being developed.

4 Recommendation

- 4.1 The Panel is asked to note the new Corporate Environment Strategy.

5 Contact

- 5.1 Contact Officer: Helen Woolston, TfL Sustainability Coordinator
Number: 020 7027 3366
Email: helenwoolston@tfl.gov.uk

Appendix 1 – TfL Corporate Environment Strategy

TfL's Corporate Environment Strategy (2014 to 2031)

Contents

- 1 Introduction**
- 2 Linking TfL's Corporate Environment Strategy with Key Organisation Goals**
- 3 Transport for London's Corporate Environment strategy**
- 4 Managing environmental impacts, current and future performance**

Carbon and energy

Air quality

Noise

Waste and Resources management

Pollution Prevention

The Built Environment

The Natural Environment

I Introduction

Transport for London (TfL) plays an important role in delivering London's growing economy and quality of life, providing vital transport services and promoting sustainable options that keep the city moving. In doing this, TfL has a responsibility to manage the environmental impacts of its activities in London.

Environmental issues offer opportunities and challenges for TfL. Some of the challenges relate to changes in legislation, public health issues, provision of stable energy supply and planning for the impacts of extreme weather on service delivery. Some of the issues will provide opportunities to manage cost more effectively, such as reducing energy and water use and contribute to London's role as a world class city by improving urban/semi-urban habitats.

This strategy sets out TfL's vision and ambition for the environmental performance it wants to achieve in the longer term (to 2031, in line with the Mayor's Transport Strategy). It clarifies priorities and how these will be delivered in a way that meets stakeholders' needs. This Corporate Environment Strategy sets out objectives, targets and performance indicators for each of the strategic goals to illustrate why these issues are important, what TfL wants to achieve, how they will be achieved and how TfL will know whether progress is going well.

The strategy will cover the environmental impacts of TfL's activities and operations, e.g. delivery and operation of transport service, projects, maintenance, office functions, etc. Other elements of Mayoral strategies that impact on all of transport outside TfL's directly managed organisation across the whole city are covered by other work from TfL, such as policy to influence reducing emissions from vehicles in London.

One of the principal aims of this strategy is to show how TfL can help to achieve the Mayor of London's environmental goals. It shows measures that will help TfL to deliver environmental legal compliance and to meet a range of other e.g. national environmental requirements. It is designed to support the TfL Business Plan and Mayor's Transport and Environment Strategies. It does not aim to change existing plans but is focused on maximising the benefit of existing and future plans.

About TfL

TfL is the integrated transport authority for the Capital. It is part of the Greater London Authority and delivers the Mayor's Transport Strategy in partnership with the London Boroughs and other transport providers such as Network Rail and the train operating companies. TfL comprises the following business areas:

London Underground – Operates London's metro system, with more than 3.5 million passenger journeys a day. It has 11 lines covering 402km and serving 270 stations. During peak hours, more than 500 trains are in operation

Surface Transport - Surface Transport provides and manages a broad range of sustainable transport services and choices, including buses, cycling and walking. By 2014/15, Surface Transport is expected to carry around 52 million more passengers on its bus network than the current levels. This is alongside supporting the 500,000 cycling journeys and six million walking trips taking place each day and carrying 30 per cent of London's road traffic on the TfL road network.

London Rail – Provides Tramlink, the Docklands Light Railway, London Overground, Emirates Air Line and the development of Crossrail.

2 Linking TfL's Corporate Environment Strategy with Key Organisation Goals

This strategy shows how delivery of a sound environmental performance within TfL's directly managed operations can help to achieve TfL's vision and its elements, such as the TfL Story and TfL's Health Safety and Environment Vision.

The TfL Story – TfL's goal is to keep London working, growing and making life in London better. The strategy sets out four pillars: "Our customers and users, Our people, Our delivery, Value for money".



TfL's Corporate Environment Strategy helps to deliver the four pillars of TfL's strategy:



HSE Vision

The Corporate Environment Strategy also sits within the forthcoming TfL Health, Safety and Environment vision.

Influences over the Period of this Environment Strategy

TfL has set this strategy in the context of some of the potential influences or drivers that are likely to happen over the period to 2031:

Focus on working to improve London's air quality and reduce transport related air pollution emissions

Energy costs are likely to increase due to the volatility of world markets and the UK Government's Energy Market Reform, alongside an increased emphasis on energy efficiency and security of supply

A need to reduce transport related carbon emissions and work to meet the targets set out in the Mayor of London's statutory strategies

Focus on being prepared for future climate change and extreme weather, e.g. warmer, wetter winters, hotter, drier summers and increased frequency of extreme weather events

Increased focus on resilience to water shortages, reducing overall use of water, water related costs and using more non-potable water instead of potable where possible

Change in approach from "generating waste" to "all materials having a value"

Increased emphasis on the importance of living and working in healthy environments

Increased value likely to be placed on provision of the natural environment in urban environments, including using green infrastructure to complement existing 'grey' infrastructure

Increasing value being placed on a well structured, cohesive urban realm

Underlying Principles

There are a number of themes or key principles that are common to all the strategic goals and deliverables in this strategy:

- TfL considers the environment as an integral issue from the inception to completion of its projects and programmes
- TfL prevents and 'designs out' potential routes and causes of environmental impacts
- TfL identifies and uses good practice and innovation when designing, procuring, operating and maintaining transport infrastructure, vehicles and rolling stock
- TfL ensures that all its operations comply with relevant legislation
- TfL applies responsible environmental management techniques
- TfL will continue to implement and develop its environmental staff engagement programme

Key Enablers

TfL operates a well developed Health, Safety and Environmental Management System (HSEMS) to ensure that its environmental impacts and performance are managed appropriately. The HSEMS is regularly reviewed to take into account changes in business activities, responsibilities and legislation.

At the heart of the HSEMS are the Health, Safety and Environment (HSE) Policies which are supported by a number of standards and procedures that set requirements for TfL's activities. The HSE Policies require TfL to comply with the spirit and the letter of environmental legislation and to improve its environmental management and performance.

TfL also manages the environmental performance of its projects and programmes through procurement and project management processes.

As part of HSEMS TfL businesses and many key contractors produce an Environmental improvement programme (EIP) each year, which set objectives, priorities and targets for the year ahead. TfL will continue to deliver some of its environmental performance through working with its supply chain, setting specifications, franchise and contract requirements that are closely aligned to its goals and targets.

TfL monitors and reports on its environmental performance regularly – periodically to internal business units, quarterly internally to the Safety and Sustainability Panel and annually to the public, through the annual TfL Health, Safety and Environment Report. This includes information on TfL's environmental performance and certain aspects of the environmental performance of TfL's main suppliers.

3 Transport for London’s Corporate Environment Strategy

Why TfL Has Developed this Strategy

TfL has developed this Strategy in order to set out a clear vision and ambition for the environmental performance it wants to achieve in the longer term. As a transport organisation that is and aims to continue to be world –class, TfL looks to use best practice and innovation to keep its own house in order and lead by example. This strategy clarifies priorities and how these will be delivered in a way that meets the needs of TfL as a responsible organisation and also meets stakeholders’ needs.

Our vision – TfL’s Environmental Performance in 2031

TfL has reviewed its original overarching environmental objectives (in place since 2004) as part of the development of this strategy. This Strategy sets a refreshed vision to 2031, supported by new goals, objectives, targets and the delivery measures in achieving them. The 2031 timeline aligns with that of the Mayor’s Transport Strategy. The delivery measures have been split into a series of 5 year plans to 2031.

Strategic Goals

TfL is committed to delivering continual improvement in environmental performance. The aim is to have further improved environmental performance by 2031, by continuing to embed good environmental practices across the business.

TfL wants to be recognised as an organisation that achieves the following goals:

<p>Air quality</p> <p>reduces polluting emissions and exposure to air pollution in London</p>	<p>Carbon, Energy and Climate Resilience</p> <p>reduces carbon emissions and is prepared for the potential impacts of climate change</p>	<p>Resource management</p> <p>uses resources (including water) wisely and minimises waste</p>
	<p>Noise</p> <p>effectively manages and controls transport-related noise and vibration</p>	
<p>Natural environment</p> <p>respects, protects and enhances the natural environment and its contribution to the quality of life</p>	<p>Pollution prevention</p> <p>is proactive in managing its activities to minimise and control pollution</p>	<p>Built environment</p> <p>respects, protects and improves the built environment and enhances the quality of the travel experience</p>

This Corporate Environment Strategy sets out objectives, targets and performance indicators for each of the strategic goals to illustrate why these issues are important, what TfL wants to achieve, how they will be achieved and how TfL will know whether progress is going well. The targets for CO₂ and air emissions are also included in TfL's Business Plan. The underlying principles on page 5 provide the context in which the goals will be achieved. TfL has internal, detailed delivery plans supporting each of the strategic goals, the highlights of which are summarised in each of the following sections.

4 Managing environmental impacts, current and future performance

Carbon, Energy and Climate

TfL is currently the single biggest consumer of electricity in London and one of the top 10 electricity consumers in the UK. Electricity consumption is a significant contribution to climate change and TfL has a responsibility to use energy efficiently. Approximately half of TfL's CO₂ emissions come from electricity used for powering the Tube, the other half of CO₂ emissions is associated with fossil fuel use in buses, support fleet vehicles and emissions from the taxis and private hire vehicles that are licensed by TfL.

With business as usual to meet London's predicted population growth, investment, expansion and Improvements in TfL's services such as introduction of new services, more frequent public transport, new trains and modernised stations would mean further growth in energy use. TfL aims to use its place in the market to stimulate low carbon energy sources in London as long as there is no extra cost to the tax and fare payer.

Achievements to Date

The TfL bus fleet has reduced CO₂ emissions by changing the fleet to include hybrid engines. TfL Head Office buildings have showed good practice, leading implementation of Re:fit energy efficiency programme and introducing new technologies such as the combined cooling, heat and power plant at Palestra.

There has also been a range of enabling measures put in place to help monitor and manage electricity usage across TfL. These include installation of automatic meters and embedding carbon assessment into project decision making and management. There is also the successful ongoing Destination Green staff engagement campaign and Awards.

London Underground has implemented a range of energy efficiency measures under its previous Carbon Reduction Strategy. Those associated with efficient use of electricity to power Tube trains are best delivered as lines and trains are upgraded. Measures included in the Victoria Line and District/Circle, Metropolitan and Hammersmith and City Line upgrades include use of regenerative braking – where energy otherwise lost when trains slow down is captured and made available for reuse by following trains.

A range of innovative test measures have been proved at two showcase stations, Leicester Square and Sloane Square, prior to further implementation at other stations. The measures include low energy lighting, centralised cooling and heat recovery systems and automation and control systems. Energy demand has been reduced by automatically switching off public area lighting when the station closes, linking exterior lighting to daylight and using recovered heat for heating and cooling systems.

London Underground has analysed the potential for making changes to where it purchases electricity from, considering lower carbon and diversified sources. It has put in place procurement mechanisms to be able to develop this further within the scope of this Strategy.

TfL's Carbon and Energy Goal

TfL aims to be recognised as an organisation that reduces carbon emissions and is prepared for the potential impacts of climate change

Objectives

- TfL will minimise its energy use and therefore the carbon emissions of assets, buildings and vehicles
- Energy efficient and low carbon principles are embedded across all levels of the organisation
- TfL's energy will be sourced from verifiable low carbon or renewable energy sources
- TfL will minimise the risks to operations and assets from extreme weather and climate change

Key Delivery

Targets

TfL will reduce its Carbon Footprint – TfL will work to achieve a 40 per cent reduction in its carbon footprint by 2031 (against a 2013 baseline)

TfL will reduce the amount of carbon per passenger journey – TfL will reduce its emissions of CO₂ per passenger kilometre by 40 per cent by 2031 (against a 2013 baseline)

TfL will achieve these targets by:

- Diversifying its energy supply to increase the amount of decentralised energy from local generators in London
- Embedding energy efficiency and resilience in business processes e.g. business cases, design, procurement
- Deliver a programme of energy efficiency improvements to our assets and buildings, utilising the RE:FIT methodology where appropriate
- Developing a culture of energy efficiency and low carbon behaviour across the organisation, e.g. staff engagement initiatives and performance management
- Using low carbon fuels and vehicles within its fleet, e.g. hybrid bus roll out, biodiesel bus pilot, trialling and promotion of electric vehicle and hydrogen fuel cell technology for bus fleet, dial-a-ride and support vehicles fleet, working with OLEV to achieve goals
- Taking a risk-based approach to identifying and managing key weather and climate risks

NOTE: *These targets are set within the challenging context of transport growth to meet increased demand in the Capital. They are based on a forecast that takes into account the Government's Committee on Climate Change projections for reducing the carbon intensity of grid electricity* On resilience to extreme weather and climate change, TfL will mitigate against the impact of climate change, and extreme weather by keeping its identified risks as low as reasonably practical. Risks will be regularly reviewed and updated in the light of the best available information.

Measuring Progress

TfL will measure and publicly report on its Carbon Footprint and also the amount of carbon per passenger kilometre annually, against an annual forecast. TfL's direct emissions that it has control over arise from operation of buses, Underground and Overground trains, DLR and Tramlink and head office buildings. TfL will also report on weather and climate change resilience reviews and plans.

Air Quality

TfL aims to reduce emissions to air from its bus fleet, from the taxis and private hire vehicles it licenses and from its fleet of support vehicles. TfL aims to lead by example, demonstrating good practice in the type of vehicles it uses and how they are operated. Combustion of fuel results in emissions to air of pollutants such as particulate matter (PM) and oxides of nitrogen (NO_x).

TfL is a key player in delivering the Mayor's Air Quality Strategy, through policy measures such as the Low Emission Zone as well as delivering a package of sustainable transport alternatives and promoting low emission vehicles, walking, cycling and smarter travel choices.

The forthcoming Low Emission Vehicle Roadmap and Air Quality and Emissions Action Plan will set out TfL's ongoing work to achieve air quality improvements from wider transport in London. This work includes plans to develop an Ultra Low Emission Zone in central London by 2020. The environmental performance of this work is outside the scope of this TfL Corporate Environment strategy.

Achievements to Date

TfL is proud to have the cleanest bus fleet in the UK as a result of fitting Diesel Particulate Filters to Euro II and III buses and introducing diesel-electric hybrid buses, including the iconic New Bus for London. NO_x emissions will reduce further with the early replacement of approx 900 Euro III buses with Euro VI buses and the retrofitting of the remaining Euro III buses in the fleet with Selective Catalytic Reduction equipment. Similar efforts are being made to reducing emissions from other parts of the TfL fleet. Trials of ultra low emission vehicles will continue in the support fleet and Diesel Particulate Filters (DPFs) are being fitted to the Woolwich Ferry vessels. TfL is also working with the taxi and private hire industry to encourage the introduction of ultra low emission vehicles.

The Mayor has encouraged local authorities to introduce innovative local measures to improve air quality through the Mayor's Air Quality Fund, building on lessons learned from the Government-funded Clean Air Fund which trialled dust suppressants, fitted DPFs on buses on routes through air quality priority areas, encouraged behaviour change through public campaigns and smarter-driving lessons for taxi and private hire vehicle drivers, and researched the air quality benefits of green walls.

As we deliver our investment programme, we have taken measures to reduce dust from our construction activities, e.g. at Tottenham Court Road and Victoria station upgrade projects and vehicle air emissions associated with transport by developing detailed delivery and equipment removal plans.

TfL's Air Quality Goal

From now to 2031, TfL aims to be recognised as an organisation that reduces polluting emissions and exposure to air pollution in London

Objectives

- TfL will work towards zero pollutant emissions from its fleet vehicles
- TfL will include air quality requirements in policies, programmes and projects

Key Delivery

Targets

TfL will reduce NOx emissions from the bus fleet by 50% by 2020 against 2013 baseline

TfL will reduce PM emissions from the bus fleet by 25% by 2020 against 2013 baseline

TfL will achieve these targets by:

- Delivering the Selective Catalytic Reduction programme by 2014 to reduce NOx emissions from Euro III buses
- Introducing 1700 hybrid buses by 2016
- Delivering a Technology and fuel demonstration programme to reduce emissions from buses, including trialling hydrogen and electric buses
- Continuing to implement its support fleet environmental policy, working with the Office of Low Emission Vehicles to achieve air quality and carbon reduction goals
- Specifying through procurement and contracts that suppliers meet support fleet air quality goals

Working in partnership with Government the EU and other transport organisations and technical experts, TfL will continue to trial new technologies and fuels. Hydrogen buses will continue to be a small but important part of the fleet and the first electric buses will run in London from 2014. Infrastructure development will continue to support these emerging technologies and the introduction of induction charging is the next important step.

Measuring Progress

TfL will measure and report publicly on the 50% reduction target for NOx and 25% reduction target for PM emissions by 2020, against an annual forecast.

Noise

Noise is an important part of determining quality of life in London. Sound levels or vibration from transport, such as train and vehicle movements, construction works or public announcements can impact on those who work or live close to the transport system. As we operate and upgrade London's growing transport, TfL wants to ensure that noise nuisance is minimised wherever possible.

Delivering transport services and improvement projects generates noise and vibration and TfL makes every effort to be a good neighbour by specifying noise limits on trains and vehicles which are at least as good as statutory standards and public announcements at stations are limited to the minimum required.

TfL has to balance the need to deliver improvement projects quickly to reduce delay on the road and rail services against reducing noise nuisance to residential and business neighbours, in liaison with local planning authorities.

Achievements to Date

Construction activities are monitored carefully to ensure that agreed noise limits and working hours are adhered to. TfL communicates plans for out-of-hours working to neighbours in advance of starting works.

Much has been done to reduce noise from trains and vehicles and from rails and road surfaces and TfL will continue to trial and use improved technology and materials. London Underground has added stickers on vehicles to remind staff to work quietly at night. They have also reviewed approaches and technologies from a wide range of industries.

TfL's Noise Management Goal

From now to 2031, TfL aims to be recognised as an organisation that effectively manages and controls transport-related noise and vibration

Objectives

- TfL will minimise noise and vibration from its vehicles and rolling stock
- TfL will minimise noise and vibration from its transport infrastructure and operations
- TfL will minimise noise and vibration from its maintenance and improvement programmes

Targets

-
- Reduced number of noise-related complaints
- Respond to 100% complaints noise and vibration complaints regarding rail within 10 working days, and close out 90% of these complaints within the target date
- Review Section 61 (construction noise consenting) process and ensure the implementation of a process applicable to large, medium and small projects
- 90% of buses in the TfL fleet to be at least 2dB(A) quieter than the required legal limit by 2015.
- 100% of suitable TLRN to be surfaced with lower noise surface materials by 2020.

Key Deliverables

TfL will achieve these targets by:

- Removing, where practical, joined bullhead rail on timber sleepers/limestone ballast and replace with continuously welded flat-bottomed rail on concrete sleepers with granite ballast which will reduce impulsive noise and ground-borne vibration
- Complete roll out the quieter S Stock trains on all LU sub surface lines by 2016
- Produce a regular summary of rail complaints by 'business', line etc.
- Liaise with members of the Rail Defect Reduction Project
- Develop a tracker showing areas with jointed track and programme for replacement
- Develop and deliver training programme for design / construction teams by 2014
- Ensure effective communication or distribution of information to residents or businesses potentially affected by noise or vibration from construction and maintenance activities

- Continuing to trial and use improved technology and materials.

Measuring Progress

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

Waste and Resource Management

TfL aims to ensure that it uses resources responsibly, through minimising use of natural resources and encouraging the reuse and recycling of materials. Amounts of waste produced increases or decreases in direct relation to the amount of maintenance or construction activities carried out as the transport services are expanded. TfL intends to minimising waste as much as possible and get to a position where 'unwanted materials' are no longer referred to as 'waste' but are considered a potential resource.

Some TfL businesses have a good track record in recycling up to 99% of waste materials but there is more to be done through sharing good practice across all of TfL. Whilst the amount of unwanted materials produced varies depending upon the nature of work done under TfL's Investment Programme, the opportunities for designing out waste and re-using and recycling apply to all construction projects and TfL intends that the lessons learned by following the Site Waste Management Plan Regulations, will not be wasted.

Achievements to Date

TfL has worked to achieve excellent local reuse of waste in key construction or maintenance projects. For example, the London Underground earth structures project on the Metropolitan line (Chalfont & Latimer to Chesham section achieved 100 per cent re use of waste materials.

Using shared electronic sites to send out daily reports rather than faxing. Ensuring use of consistent recycling signs across London Underground depots.

TfL requires 20% of materials to be recycled for construction projects, for some embankment stabilisation projects we have used 100% recycled fill for the embankment slope.

TfL's Resource Management Goal

By 2031, TfL aims to be recognised as an organisation that uses resources wisely and minimises waste.

Objectives

- TfL will minimise waste generated
- TfL will develop a normalised target for reduction of waste generated per project spend, passenger turnover etc
- TfL will develop a target for reduction of hazardous waste
- TfL will prioritise reuse of resources, including water and maximise opportunities for recycling unavoidable waste
- TfL will optimise opportunities to recover energy from remaining waste
- TfL will purchase reused materials or those with a high recycled content

Key Delivery

Targets

- Reuse, recover and recycle 99% of non-hazardous waste, with interim targets of 30% for recovery, by 2031 in line with the London Plan

TfL will achieve these targets by:

- Specifying 'designing out waste' in construction and design
- Delivering a hazardous waste reduction programme
- Developing a system to quantify TfL's spend on waste management
- Creating a waste exchange process internally for TfL and its contractors
- Undertaking a water efficiency audit of all major TfL buildings

Measuring Progress

TfL will measure and report publicly annually on progress with achieving targets and key programme delivery.

Pollution Prevention

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

In a busy transport organisation, spills, leaks and incidents happen. TfL's management system and training for staff and contractors helps to encourage good management practices but there is more to be done to improve some of our operating premises, and those of our main suppliers. Designing out pollution pathways are taken where opportunities for new premises or refurbishments.

Audits of TfL's and our main suppliers' operational premises and of construction sites are undertaken to check that procedures are followed. TfL operates an incident reporting procedure to establish trends and to inform the audit and remedial works programme.

Achievements to Date

TfL has assessed the risk of pollution and ensured controls and plans are built into local emergency plans. There are Management system guidelines for the right procedures by the right people.

<h3>TfL's Pollution Prevention Goal</h3>

<p>TfL is proactive in managing its activities to minimise and control pollution</p>
--

Objectives

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

Targets

- Zero pollution incidents each year

Key Delivery

TfL will achieve these targets by:

- Assessing and reducing risk for TfL's highest risk sites each year
- Improving processes for reporting and investigating environmental incidents

Measuring Progress

TfL will measure and report annually against its pollution prevention target and on progress with its delivery programmes.

The Built Environment

TfL can help with the important London-wide aim to achieve an improved built environment (urban realm) as an important contribution to the quality of life in London, bringing a strong sense of place, encouraging safer, sustainable design, reducing exposure to pollution and preventing crime. TfL's design, construction and operation choices and specifications can strongly influence the local feel, at transport interchanges for example. TfL aims to lead the way in designing measures to manage rainwater runoff and to adapt London, making the city more resilient in the face of more frequent extreme weather events.

In addition, many aspects of TfL's buildings, stations and other assets have a strong heritage identity that contributes to London's favourable identity and it is important to preserve or enhance these features.

TfL is the guardian of a rich heritage of transport buildings and infrastructure and takes its responsibility for protecting this important resource seriously. TfL also recognises the disadvantages of the transport network and takes action to improve it for transport users, residents and visitors.

Achievements to Date

Steps have been taken to improve the pedestrian environment by reducing severance, removing 'clutter' and recognising the needs of people with mobility and visual impairment and generally improving the appearance of the urban realm within TfL's remit and by supporting local authorities through Local Improvement Plan funding.

Huge efforts have been made to improve the cycling infrastructure for the growing number of cyclists and improvements at stations and interchanges are helping to enhance London's reputation as a place to visit and do business. Working in partnership with other transport authorities and partners, TfL is able to achieve excellence in design in schemes such as Windrush Square in Brixton, Kingsland High Street, the new Kings Cross terminal and the Crossrail stations. Several projects have received awards, including CEEQUAL and BREEAM, in recognition of best practice.

TfL shares experience and good practice through the guidance documents that make up the Streetscape Toolkit and supporting Urban Design London to share information across a wide membership of borough councils, housing associations and built environment professionals. TfL recognises that more needs to be done to improve accessibility and 'connectivity' between different modes of transport to improve everyone's travel experience. Every journey matters to TfL.

TfL's Built Environment Goal

From now to 2031, TfL is recognised as an organisation that respects, protects and improves the built environment and enhances the quality of the travel experience and the wider quality of life that London offers.

Objectives

- TfL will improve the built environment to support an integrated, safe and seamless travel experience
- TfL will protect and restore its heritage assets
- TfL will embed sustainable design and maintenance solutions to enhance development of the built environment
- TfL will apply a holistic approach to design governance across the organisation
- TfL is recognised as a leader in design standards for the built environment

Key Deliverables

Target

Number of schemes achieving an improvement in urban realm score (to be determined)

TfL will achieve these targets by:

- Programme to update design guidance and material palettes, starting with:
 - Publish refreshed London Cycle Design Standards in 2014
 - Publish refreshed Streetscape Guidance for the TfL Road Network in 2014
 - Publish guidance for the development of TfL's stations and interchanges in 2014
- Survey, record and understand our assets and their heritage value to identify opportunities for conservation and restoration, starting in 2014.
- Communicate the value of the built environment across TfL, starting in 2014.
- Starting in 2015, explore and develop a method to measure improvements in the quality of the built environment (urban realm).
- Continue to work with English Heritage, Conservation Officers and other interested stakeholders to share information and develop best practice

Measuring Progress

TfL will measure and report annually on progress against its built environment target and delivery plans.

The Natural Environment

TfL has significant land holdings across London- on rail track sides or the verges of the TfL road network. These spaces provide vital habitat for flora and fauna as well as green links through the Capital. 'Green infrastructure' can provide ecosystem services – as well as ecological benefits there are also opportunities to capture polluting particulate matter, provide shading and cooling and reduce the speed and nature of runoff water. The natural environment is a key contributor to improving the quality of life in London.

Achievements to Date

London Underground's Biodiversity Action Plan and the Green Estate Management Plan for the TfL road network set out TfL's plans to continue to manage the natural environment responsibly and to look for opportunities to enhance the value of its land as a habitat and a resource to be enjoyed by residents and visitors whilst delivering the multiple benefits described above.

The pressures on the natural environment continue to rise as competition for space increases, both on and off TfL's networks. Other pressures on London's natural environment include an increase in pests and diseases and weed species such as Japanese Knotweed.

TfL counters these threats by having robust processes in place to protect green infrastructure whenever possible from competing demands and to react quickly to threats such as outbreaks of Oak Processionary Moth caterpillars. Nevertheless, the pressures are expected to continue to increase and TfL is proposing to develop a valuation system to measure losses and gains, building on the valuation system used by TfL and borough councils to place a value on street trees.

This will help to demonstrate the value of TfL's natural environment and ensure that green infrastructure is not seen as expendable.

TfL's Natural Environment Goal

From now to 2031, TfL is recognised as a leading organisation that respects, protects and enhances the natural environment and its contribution to the quality of life.

Objectives

- TfL will protect, manage and enhance the natural environment within our land holding
- TfL will manage the natural environment to help to ameliorate the impacts of extreme weather events and climate change
- TfL will develop the habitat and biodiversity potential of the natural environment

Key Deliverables

Target

Measure and report on the percentage of TfL land holding with improved habitat and biodiversity quality

TfL will achieve these targets by:

- Publish a refreshed Green Estate Management Plan for the TfL Road Network in 2013
- Any plans to publish refreshed BAP for the LU network?
- Communicate the value of the natural environment across TfL
- Develop a method to measure biodiversity losses and gains, starting in 2015
- Survey and record the biodiversity value of TfL's assets to identify priority areas for protection and enhancement as part of management plans
- Develop and improve existing management plans to inform future management and enhancement of the natural environment and to help to reduce the impacts of extreme weather events and climate change, starting in 2015, to include:
 - Biodiversity protection and enhancement
 - Succession planting
 - Control of pest and diseases
 - Control of injurious weeds and invasive plants
- Continue to work with Natural England, the Forestry Commission, the London Tree Officers Association, RPSB and other interested stakeholders to share information and develop best practice

Measuring Progress

TfL will measure and report publicly annually on its progress with achieving the target for improved habitat and biodiversity quality.