

TRANSPORT FOR LONDON

ENVIRONMENT AND PLANNING PANEL

**SUBJECT: LONDON 2012 OLYMPICS AND PARALYMPICS TRANSPORT
PLANNING AND SUSTAINABILITY**

DATE: 24 FEBRUARY 2010

1 PURPOSE AND DECISION REQUIRED

- 1.1 The London 2012 Games bid promised the International Olympics Committee (IOC) to 'deliver the first sustainable Olympic and Paralympic Games', and the Mayor of London is committed to making the 2012 Games the most accessible and inclusive and environmentally friendly games ever.
- 1.2 This paper provides a summary of the London 2012 Olympic and Paralympic Games approach to sustainable transport, with a focus on Transport for London's contribution to its delivery. The Panel is requested to note the report.

2 BACKGROUND

- 2.1 The staging of the Games is the responsibility of the privately funded London Organising Committee for the Olympic Games and Paralympic Games (LOCOG). The Olympic Delivery Authority (ODA) is the public body set up to deliver all the necessary infrastructure for the Games. These two organisations work closely together and share the designation of 'London 2012'.
- 2.2 The overall vision for the London 2012 Games is: 'to use the power of the Games to inspire change'. In addition to a successful, high-profile event, the 2012 Games seek to secure an ambitious and enduring physical, social and environmentally sustainable legacy for the Olympic park area and around the UK. This vision and strategic objectives for the Games are underpinned by the principles of 'sustainable development', and a responsibility for sustainability is embedded throughout the Games' governance and delivery arrangements, from the Olympic Board to the 2012 Sustainability Group and the delivery teams in LOCOG and ODA. Independent assurance is provided by the Commission for a Sustainable London 2012 (CSL).
- 2.3 The London 2012 Sustainability Policy (published in 2006) forms the basis for London 2012's sustainability programme and supports the UK legacy goals. It focuses London 2012's sustainability efforts upon five key themes, as follows: **climate change, waste, biodiversity, inclusion and healthy living.**
- 2.4 The London 2012 Sustainability Plan sets out plans and activities aimed at delivering against these core themes. A revised version of the Plan (second edition), 'Towards a One Planet 2012', was published in December 2009,

alongside an updated version of the ODA's Olympic Transport Plan (OTP). The Strategic Environmental Assessment of the OTP is currently under review.

- 2.5 Transport for London (TfL) is working closely with the ODA and LOCOG to help plan and deliver many of the transport and sustainability requirements for the Games. Other key stakeholders include the Greater London Authority (GLA), National Rail, the Highways Agency and the Rail Safety and Standards Board (RSSB).
- 2.6 As the transport system will impact primarily on the themes of climate change, inclusion and healthy living, this paper focuses on these in the first instance. Biodiversity and waste management, including the transport of waste, play a role mainly in construction and maintenance.
- 2.7 It is important to note that an enhanced transport network for London will also deliver a number of broader legacy benefits, including improved access to services and opportunities, which are expected to contribute to London's economy and in particular the regeneration of the east London area. The paper will touch on these, as well as on some of the transport specific challenges during Games time.

3 A PUBLIC TRANSPORT GAMES

- 3.1 London 2012 and partners are committed to 'keeping London and the UK moving' during the Games, and to deliver safe, secure and accessible transport for the Games Family (IOC officials and athletes), spectators and the public. During each of the 16 days of the Olympic Games, London will be responsible for transporting up to 500,000 spectators and 55,000 members of the Olympic family. For the 12 days of the Paralympic Games, this is 160,000 spectators and 16,500 members of the Paralympic Family.
- 3.2 Transport's major contribution to a sustainable Games will be delivered through the commitment made by London 2012 and its partners to host the 'first public transport Olympic and Paralympic Games ever'. With the exception of official vehicles and transport for disabled people, there will be no cars at the Olympic Park and transport plans will be developed for all venues. Moreover, although a designated Olympic Route Network (ORN) and vehicle fleet will be available to the Games Family, its members will be encouraged to use public transport where appropriate.
- 3.3 In addition, where practicable, spectators and the workforce in London will be encouraged to travel by walking and cycling, both 'low-carbon' modes.

4 KEY TFL PROJECTS AND PROGRAMMES

- 4.1 TfL will be delivering various projects that are Games related, and will help to deliver the capacity enhancements to ensure a successful Games. Key programmes include:
 - (a) Extension of the Docklands Light Railway (DLR) in east London - including to London City Airport, Woolwich Arsenal and Stratford International;

- (b) Fifty per cent capacity enhancement across the DLR network, including the introduction of three-car trains across the network;
 - (c) Extension of the East London Line to Crystal Palace and West Croydon;
 - (d) Capacity enhancements to relieve congestion at King's Cross, Wembley Park and North Greenwich stations and step-free access at Green Park and Southfields; and
 - (e) Introduction of a seventh car on the Jubilee line and a new signalling system allowing higher train frequency and increasing capacity by a further 33 per cent.
- 4.2 In addition, TfL is a key partner in the delivery of the Olympic walking and cycling programme, and has played an important role in developing the operational principles for the Games transport systems and operations as well as the prerequisite Geographic Information System (GIS) mapping. In the run up to and during Games time, TfL will be involved in the operation of the road network, an enhanced public and complementary transport service (eg Dial-a-Ride), and roll-out of customer information and an Active Travel Programme.

5 CLIMATE CHANGE

- 5.1 A 'public transport Games' will make a considerable difference in terms of CO₂ emissions per passenger kilometre, which are significantly lower for public transport modes than private vehicles. Based on current ridership, public transport modes emit between 50-80 gm/passenger/km CO₂, while a medium sized diesel car accounts for emissions of around 125 gm/passenger/km CO₂.
- 5.2 Improved operational efficiency and use of low carbon technology will help to minimise further the environmental impacts from transport during the Games.
- 5.3 Hybrid buses, which are quieter, cleaner and consume up to 40 per cent less fuel than conventional diesel buses, are being introduced. TfL currently has 56 diesel-electric hybrids in service and plans to add a further 300 hybrid vehicles by 2012. From 2012 onwards, TfL envisages all new buses entering the fleet to be of this technology type. The New Bus for London will be at least as green as, if not significantly greener than, the cleanest hybrid bus currently in operation, and will start to be introduced from the beginning of 2012. The New Bus is expected to produce substantially lower emissions of carbon dioxide, oxides of nitrogen and particulate matter than a conventional diesel bus.
- 5.4 A number of London Underground trains use energy efficient 'regenerative braking' which recovers electric power during braking to feed back into the system as energy to power the next train. This type of braking provides between 20 and 25 per cent saving in electricity, and is currently used on 15 per cent of the network. This will rise to 50 per cent by 2012 (with the entire network covered by 2020). Regenerative braking is also in use on the DLR and Overground trains will also be equipped with the technology.
- 5.5 A recent feasibility study, carried out by London Underground, has shown that low carbon technology for stations could result in operational cost savings of £70,000 per station and a 72 per cent reduction in CO₂. Consequently, London Underground and the ODA are currently discussing a range of low carbon

design options for Stratford Regional Station.

- 5.6 The Mayor of London is working with a range of car manufacturers to deliver the Mayor's plan for 1,000 electric vehicles in the GLA fleet and 25,000 charging points in the capital by 2015, in order to 'kick-start London's electric vehicle revolution'. Car manufacturer BMW was recently selected to become an official sponsor of London 2012, and will provide the 4,000 vehicles necessary to transport the Games Family during the Olympics and Paralympics. The vehicles will be 'low emission' with a fleet average of less than 120 g/km CO₂, and will include a small number of "Mini E" electric vehicles. London 2012 logistics partner UPS will operate a fleet that includes electric vehicles.
- 5.7 New public transport capacity, combined with a successful and inspiring sustainable transport Games, should help to deliver another key legacy benefit: a sustained change in travel behaviour and a further modal shift away from the (combustion engine) car, and a contribution to the longer term Mayoral targets on CO₂ and air pollutants.
- 5.8 There are opportunities to deliver reduced carbon emissions in the run up to the Games, as part of the planning and construction process. For example, a total of 5,000 tonnes of CO₂ was saved (to September 2008) in the construction of the East London Line project as a result of using pulverised fuel ash in concrete mixes wherever possible, thus avoiding the need to quarry, transport and process primary aggregates.

6 INCLUSION

- 6.1 London 2012 is committed to helping everyone travel to the Games more easily. Planned access improvements are designed to benefit disabled and older people, passengers with buggies or small children and those carrying luggage.
- 6.2 A considerable amount of work has already been done to put in place a strategy and programme to deliver accessible transport during Games time. The ODA Accessible Transport Strategy was launched in May 2008, and has recently been followed up with an ODA Accessible Transport Plan published in January 2010.
- 6.3 As part of the Plan, London 2012 and a wide range of partners, including TfL, are working together to understand the volume of accessible transport that will be required and the profile of those people needing it. The ODA is generating demand forecasts for the number of spectators requiring accessible transport to each venue; where they are likely to travel from; when they will travel; and which mode of transport they are most likely to use. Current estimates in the Olympic Transport Plan suggest that approximately 15-20 per cent of Paralympic Games spectators are expected to have particular access needs.
- 6.4 The Plan further requires partners to consider how the different modes, including walking and cycling and river services, will be best put to use as part of a Games Network of Accessible Transport. The core transport services for the Games can be broadly grouped into three areas: public transport; complementary transport services; and Games-specific transport.
- 6.5 TfL will play a key role in delivering public transport, as well as complementary transport services. TfL currently supports a door-to-door network for those with

significant mobility impairments and is seeking to make London's transport network more accessible. At present, over 2.6 million journeys a year are provided by the Taxicard and Dial-a-Ride schemes. In addition to the DLR network which is accessible, over 41 per cent of bus stops are accessible; and over 140 wide-aisle gates have been installed on the Underground.

- 6.6 London's bus network will play a central role during the Games since the entire fleet is low-floor and fitted with ramps and additional capacity will be provided. Enhanced passenger information delivered through London Buses' iBus and Countdown 2 projects will make it easier for everyone to use London Buses, including those with visual or hearing impairments. Taxis and Private Hire Vehicles provide important services and are essential for many disabled Londoners and visitors, and all licensed taxis are wheelchair accessible.
- 6.7 Nine lifts at Stratford Regional Station and a new, accessible entrance and exit to Stratford International Station will be provided. Both are Olympic Gateway stations. In addition, four new East London Line stations in Hackney and a new station at Shoreditch High Street will all have step-free access, while all of the East London Line trains will have wheelchair spaces. TfL will continue to improve street to platform accessibility, building on the foundation of 58 step free stations, and will provide two more step-free stations at Green Park and Southfields.
- 6.8 The investment in infrastructure will leave an important legacy of physically accessible transport. However, TfL will also aim to use the Games as an opportunity to build the confidence of disabled people to make independent journeys.
- 6.9 In terms of providing access to jobs and opportunities more widely, the DLR and East London Line are connecting many communities in East and South East London to the network for the first time, and this will support the regeneration of some of London's poorest boroughs.
- 6.10 Finally, inclusion is an important theme of the Mayor's Responsible Procurement Policy, which applies to all TfL-funded Olympic projects. TfL is seeking to encourage the use of a diverse workforce and supplier base, fair employment practices and promotion of community benefits through its contracting and procurement practices. For example, the East London Line will employ 300 people with 50 per cent of its train drivers living in the boroughs of Lewisham, Southwark or Tower Hamlets, near to the New Cross Depot from which its 33 trains will operate.

7 HEALTHY LIVING

- 7.1 Walking and cycling are regarded to be practical, affordable, healthy and attractive ways for spectators to access Games competition and other venues, and will play a role in helping to relieve pressure on the public transport system during the Games. London has seen a 107 per cent increase in cycling on major roads since 2000, and the Games present an excellent opportunity to build on the ongoing work by TfL, local authorities and other groups.
- 7.2 The walking and cycling programme will require pre-Games delivery of integration and planning, and route and infrastructure enhancements. TfL is leading on the planning and programme management of route enhancements

for London 2012 on behalf of the ODA. In relation to walking, TfL is keen that the Legible London system will inform the Olympic way finding approach for the Games and legacy, and is currently working with ODA, LOCOG and the five host Boroughs to deliver a Legible London Wayfinding Programme.

- 7.3 The London Cycle Hire Scheme will be introduced in summer 2010. With 6,000 bicycles available for hire from up to 400 purpose-built docking stations in central London, it will provide a sustainable transport alternative – by being an economic as well as a greener and healthier way to travel.
- 7.4 TfL is working in close partnership with ODA and LOCOG on the Active Travel Programme. During the Games, the programme will provide information to promote walking and cycling as a healthy and attractive journey option to spectators, the workforce and the general public. An increased uptake of walking and cycling will help to reduce carbon emissions as well as demand for public transport during peak periods. The programme, and the infrastructure investment, also aims to encourage a permanent increase in the uptake of walking and cycling across the Capital.
- 7.5 In addition to a healthy lifestyle, walking and cycling also bring about wider environmental health benefits, as they help to reduce air pollution from transport. Other TfL activities that help to deliver air quality and noise benefits include the investment in technologies such as the hybrid buses.
- 7.6 In relation to air quality, it is worth noting that London 2012 intends to introduce a non statutory scheme to extend the Mayor of London's Low Emission Zone (LEZ) vehicle emission requirements to a greater range of vehicles in and around the Olympic Park for the duration of the Games.

8 WASTE

- 8.1 Significant quantities of waste are being generated as part of TfL's construction and maintenance activities. Through its Health Safety and Environment Management Systems, TfL has the necessary processes in place to ensure the effective management of waste, including minimising waste sent to landfill. These processes, which also cover other environmental impacts such as noise, air emissions and pollution, ensure compliance with relevant Codes of Construction Practice and legal requirements such as the need for an Environmental Impact Assessment for larger scale construction projects, and Site Waste Management Plans for projects with budgets over £300,000.
- 8.2 The Delta Junction fly-under works on the DLR are a good example of minimising waste. Here, temporary supports for the existing viaducts were created by inserting shipping containers under the viaduct with hydraulic jacks on top of the containers, avoiding the use of materials in constructing temporary supports. The project also reused sections of existing viaduct that were no longer required to minimise the creation of waste.
- 8.3 The vast majority (99 per cent) of waste arising from construction work on the East London Line was crushed and reused on-site or sent off-site for processing and reuse at other locations in 2007/08. In 2008/09, the figure fell slightly to 87 per cent – but it remains high for this type of project. For example, 37,000 tonnes of waste from the demolition of Bishopsgate Goods Yard was reused to fill a railway cutting and create a bridge embankment.

- 8.4 TfL is working with London 2012 to ensure that rail and waterways are utilised, where possible, to transport construction materials and waste to and from the Olympic Park and other venues during construction works. The London 2012 target to transport over 50 per cent of the materials for the Olympic Park by non-road means has been met through the import of heavy aggregates by rail. In 2009, TfL provided £4.2m towards the opening of the new Three Mills Lock in Bromley-by-Bow.
- 8.5 An estimated 8,250 tonnes of operational waste (roughly the equivalent of what a typical borough produces in a month) will be generated during Games time, with around 60 per cent originating in the Olympic Park. TfL will be responsible for managing a proportion of this.

9 BIODIVERSITY

- 9.1 With responsibility for managing significant areas of the Capital's land, including wildlife habitats, TfL has a well-established approach to managing the biodiversity impacts of its operations. Opportunities to deliver biodiversity benefits as part of the Olympics transport portfolio, however, have been limited, but there are a few examples of good practice, including:
- (a) The East London Line project has delivered landscaping designs to diversify and enhance the species composition of existing habitats. Benefits include bird-nesting boxes for species such as black redstarts and kestrels in addition to bat boxes and improved habitats suitable for a variety of reptiles and small mammals; and
 - (b) As well as protecting wildlife habitats and heritage areas, TfL aims to improve the urban realm and built environment. It has created living roofs on a number of office and operational buildings, and one was recently installed on the new 'Olympic' bus garage at West Ham.

10 THE TRANSPORT CHALLENGE

- 10.1 While meeting its aims of delivering an accessible, public transport Games, London 2012 and partners will need to keep London, and the UK, moving.
- 10.2 During the Games, Games Family transport services will use the Olympic Route Network and the Paralympic Route Network (ORN/PRN). However, members of the workforce will mostly use public transport and accredited members of the Games Family will also be encouraged to use it.
- 10.3 Spectators and the workforce will be using transport networks alongside regular passengers not travelling to the Games. The ODA has undertaken detailed analysis to understand the likely levels of background demand during the summer months and what effect the Games will have on this. This analysis has considered a 'seasonality effect', assuming a decline during the Games due to summer holidays, and a 'Games effect', assuming a drop in background travel.

- 10.4 Assumptions have already been included within the Games planning framework and will be subject to further analysis to ensure that they remain sufficiently robust to inform planning. At present, it is assumed that around 80 per cent of spectators attending Greater London Olympic venues will travel by rail, including London Underground, the DLR, London Overground and National Rail services. Direct coach and park and ride (bus-based), local bus services, walking and cycling and river transport will provide the other transport options. Work is currently being undertaken on demand for river services and will be used to update the mode share forecasts. It is also recognised that additional work needs to be carried out to forecast demand for accessible transport during Games time, to ensure that specific challenges are factored into Games transport planning.
- 10.5 A comprehensive information and ticketing strategy will be developed to provide London 2012 and transport operators with the ability to manage travel demand actively and influence the proportion of spectators that travel by different modes and on particular routes.
- 10.6 Finally, work is ongoing to address further Games freight and non-Games freight management. At present, freight accounts for 17 per cent of kilometres travelled in London (and 23 per cent of ground-based transport CO₂ emissions). Given the expected increase in demand for Games-related freight during Games-time, measures will be required to manage both the demand for and the actual movement of freight, and to ensure the use of the most sustainable modes.

11 TRANSPORT LEGACY BENEFITS

- 11.1 The Games seek to support the regeneration of East London through considerable permanent investment in public transport. Improved physical accessibility of the transport system will be a further key legacy of this investment.
- 11.2 A successful Games delivery will also help to encourage people to sustain a change in travel behaviour and switch to walking and cycling, public transport or cleaner cars. TfL and partners will also aim to utilise the Games as an opportunity to build the confidence of disabled people to make independent journeys.
- 11.3 The delivery of the Transport Plan during the 2012 Games will showcase the integration of hard and soft transport technologies on an unprecedented scale, and deliver crucial learning regarding the delivery of major sustainable events, accessibility needs and travel demand and freight management approaches.
- 11.4 In terms of wider legacy benefits, the Olympic Park Legacy Company has now been formed and will be expected to take a lead on creating a lasting legacy from the London 2012 Games for East London, by “developing the Park to become, in time, a new and prosperous metropolitan area of the city”.

12 RECOMMENDATION

- 12.1 The Environment and Planning Panel is asked to NOTE the contents of this report.

13 CONTACT

13.1 Contact: Richard Browning, Director, TfL Games Transport
Number: 020 7126 4740
Email: RichardBrowning@TfL.gov.uk

13.2 Contact: Richard Stephenson, Director, TfL Group HSE
Number: 020 7126 4905
Email: RichardStephenson@TfL.gov.uk