

Chapter 7

Spectator and workforce transport

7.1 London 2012 wants all spectators visiting the Games from across the UK and overseas to have frequent, reliable, safe and accessible transport options. There is also an undertaking to deliver the Games in the most environmentally friendly and value-for-money manner possible.

7.2 With these objectives in mind, the transport strategy for spectators attending the London 2012 Games seeks to maximise the use of public transport, walking and cycling, and minimise the use of private cars. This will also apply to the thousands of workforce (paid staff, volunteers and contractors) who will help to deliver the Games. Car parking for spectators will not be provided at competition venues except for limited pre-booked accessible parking for disabled spectators.

7.3 This chapter outlines the task of transporting spectators and workforce to the Games and how London 2012 will maximise the use of a wide range of transport modes to meet this task. These modes include:

- London Underground;
- Docklands Light Railway;
- London Overground;
- National Rail services;
- bus;
- coach;
- park-and-ride;
- taxi and private hire vehicles;
- river;
- walking and cycling;
- powered two wheelers; and
- pre-booked accessible parking for disabled people.

Spectator demand

7.4 There will be approximately 8.8 million spectator tickets available over the 16 days of the Olympic Games (plus two preceding days of Football competition and the Opening Ceremony), with over 800,000 available on the busiest day. There will be a further two million spectator tickets available over the 11 days of the Paralympic Games.

7.5 Figures 7.1 and 7.2 shows the estimated total number of spectators expected to attend each day of the Olympic and Paralympic Games, broken down into five venue groups: the Olympic Park; River Zone; Central Zone; other venues; and regional football stadia. This is based on the total gross capacity of each venue, multiplied by the number of sessions per day. It is important to note that these figures do not include spectators attending non-ticketed events, such as road events, or those spectators visiting London to take in the atmosphere or at the Live Sites. It should also be noted that a proportion of tickets will be taken up by Games Family members and that some spectators will purchase tickets for more than one event on the same day. For the Paralympic Games, spectators will be able to buy 'general admission tickets' that grant admission to multiple venues.

7.6 Figures 7.3, 7.4 and 7.5 illustrate the proportion of spectators expected to attend each competition venue in London and the UK during the Olympic and Paralympic Games.

7.7 In addition to spectators who have tickets for competition events at a specific venue, the ODA has taken into account transport demand from those who may be travelling to a non-ticketed event. These events include some competition events, such as the Marathons and Road Cycling. Plans for these events are at an advanced stage. The consideration of the travel generated by these events is being included in Games transport planning.

Figure 7.1 Expected number of spectators per day (gross) for Olympic Games

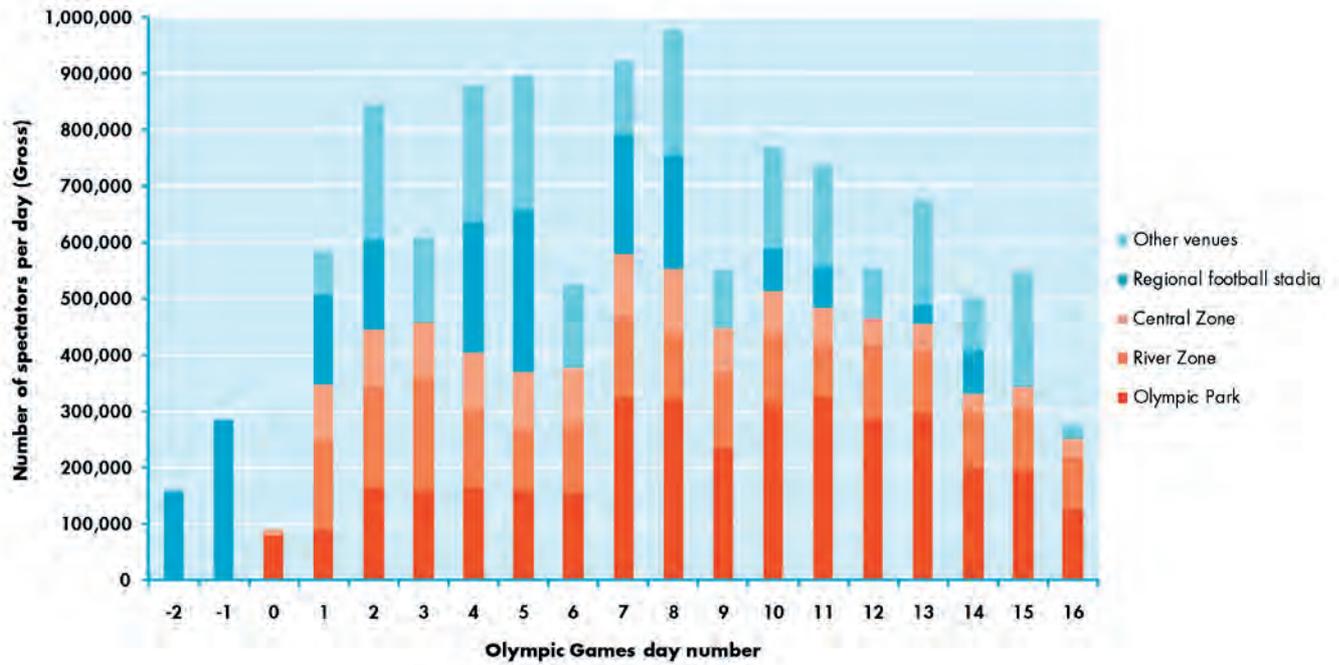


Figure 7.2 Expected number of spectators per day (gross) for Paralympic Games

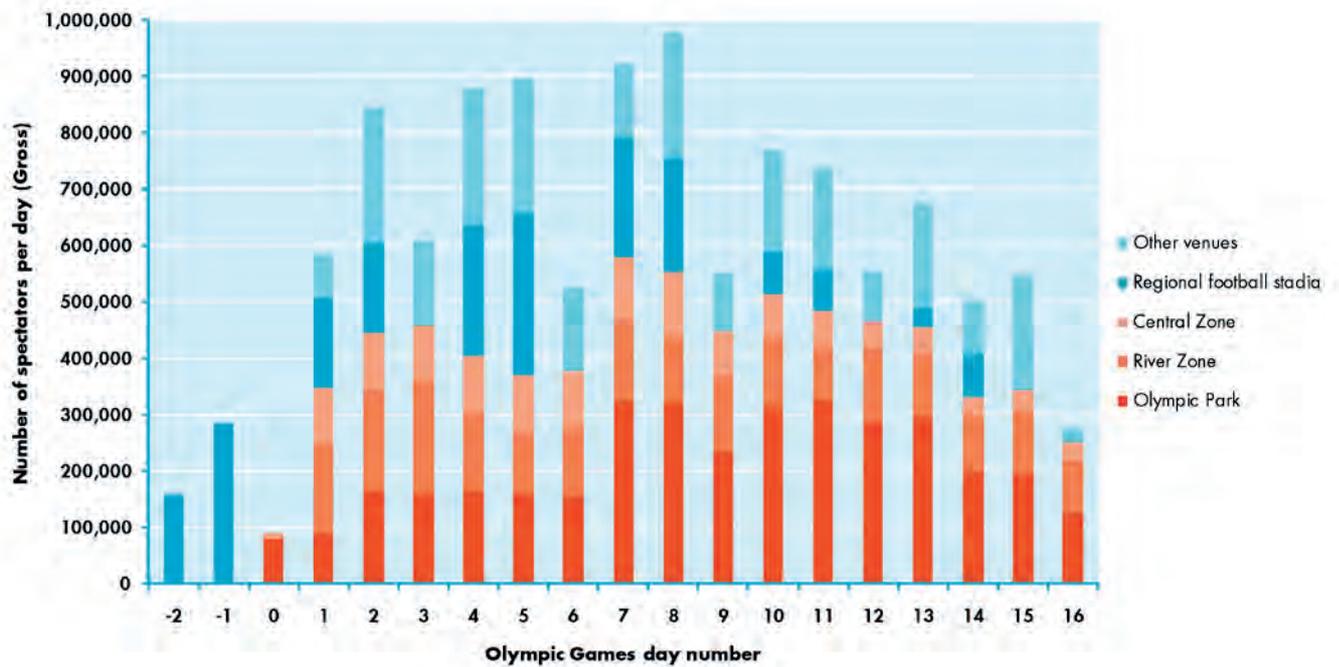


Figure 7.3
Proportion of spectators at competition venues during the Olympic Games – London

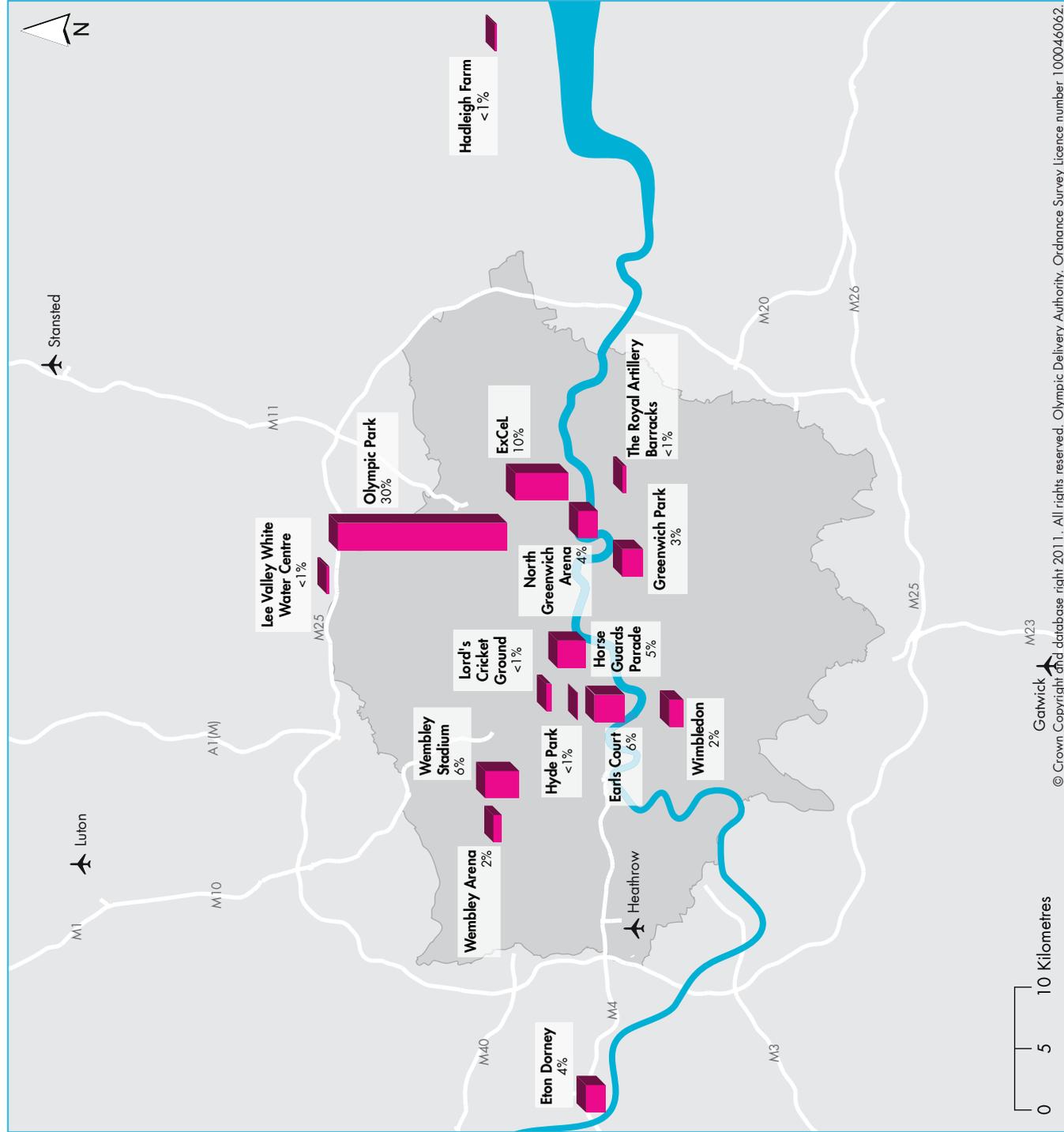
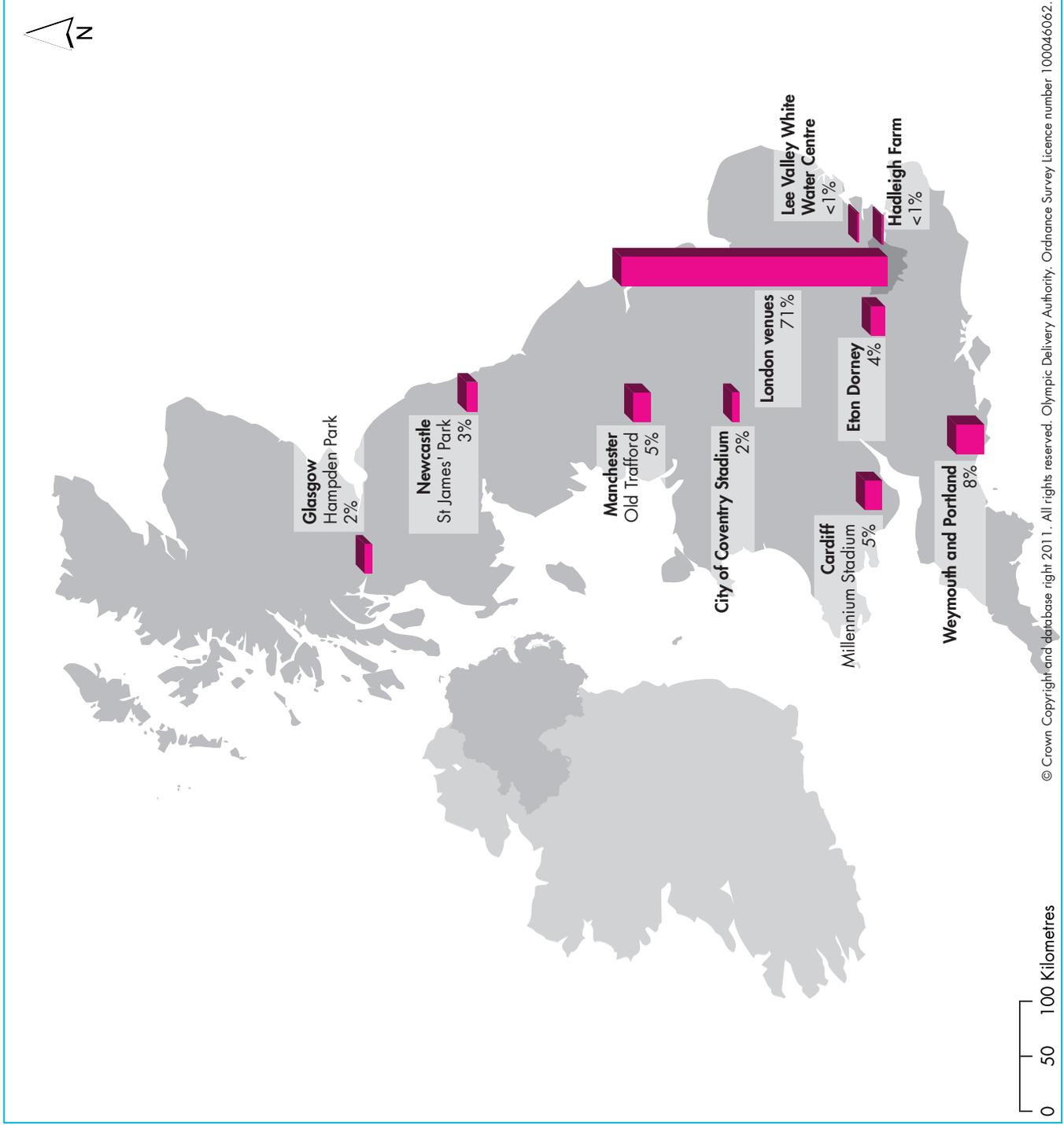


Figure 7.4
Proportion of spectators at
competition venues during the
Olympic Games – UK

Proportion of spectators at competition venues during the Olympic Games.



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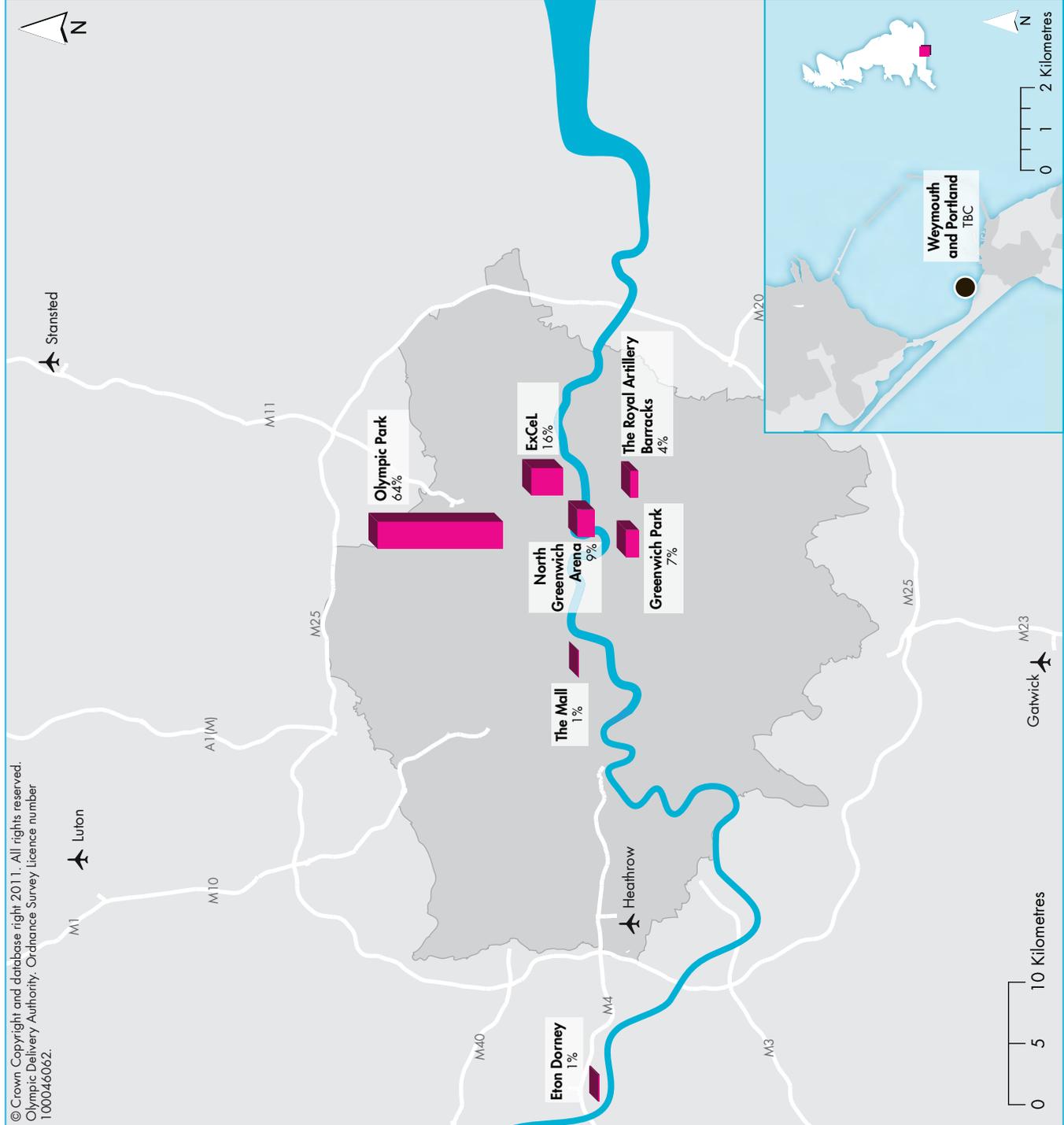


Figure 7.5
Proportion of spectators at competition venues during the Paralympic Games



Proportion of spectators at competition venues during the Paralympic Games.



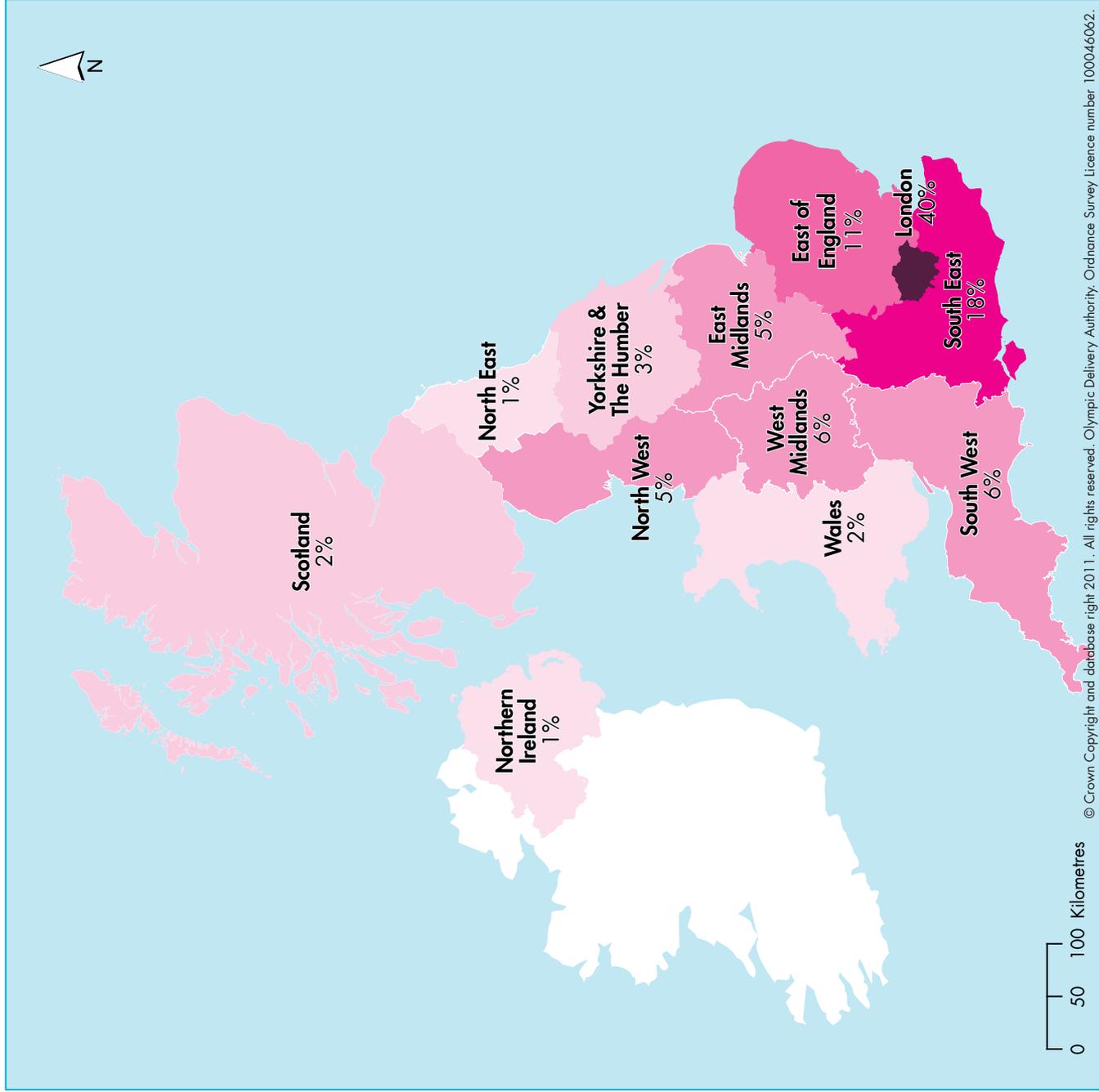
Airport

7.8 During the development of London's bid to stage the Games, assumptions were made regarding the geographical spread of spectator journey origins and destinations. These assumptions have been reviewed and revised using a specially constructed transport model. The ODA has also run an extensive data collection programme across the UK and overseas, and this and other existing data sources have been used as the basis for updating the models.

7.9 A similar approach was used for the demand forecasting of previous Olympic Games and Commonwealth Games. However, for the purpose of the transport planning, a number of assumptions have been made based on experience of other major events and current best estimates. It is predicted that approximately 33 per cent of tickets will be purchased by people living in the Greater London area. A further 42 per cent is estimated to be purchased by people living elsewhere in the UK and the remaining 25 per cent will be purchased by people living outside the UK. The distribution of spectator journey origins for both the Olympic and Paralympic Games will vary according to the location of the venue. For example, the Sailing events at Weymouth and Portland are expected to attract a higher proportion of people from south-west England than events in London. The ODA has therefore developed journey origin estimates for all competition venues across the UK. It has also developed estimates on the likely number of spectators who will make day trips and stay overnight in the London area.

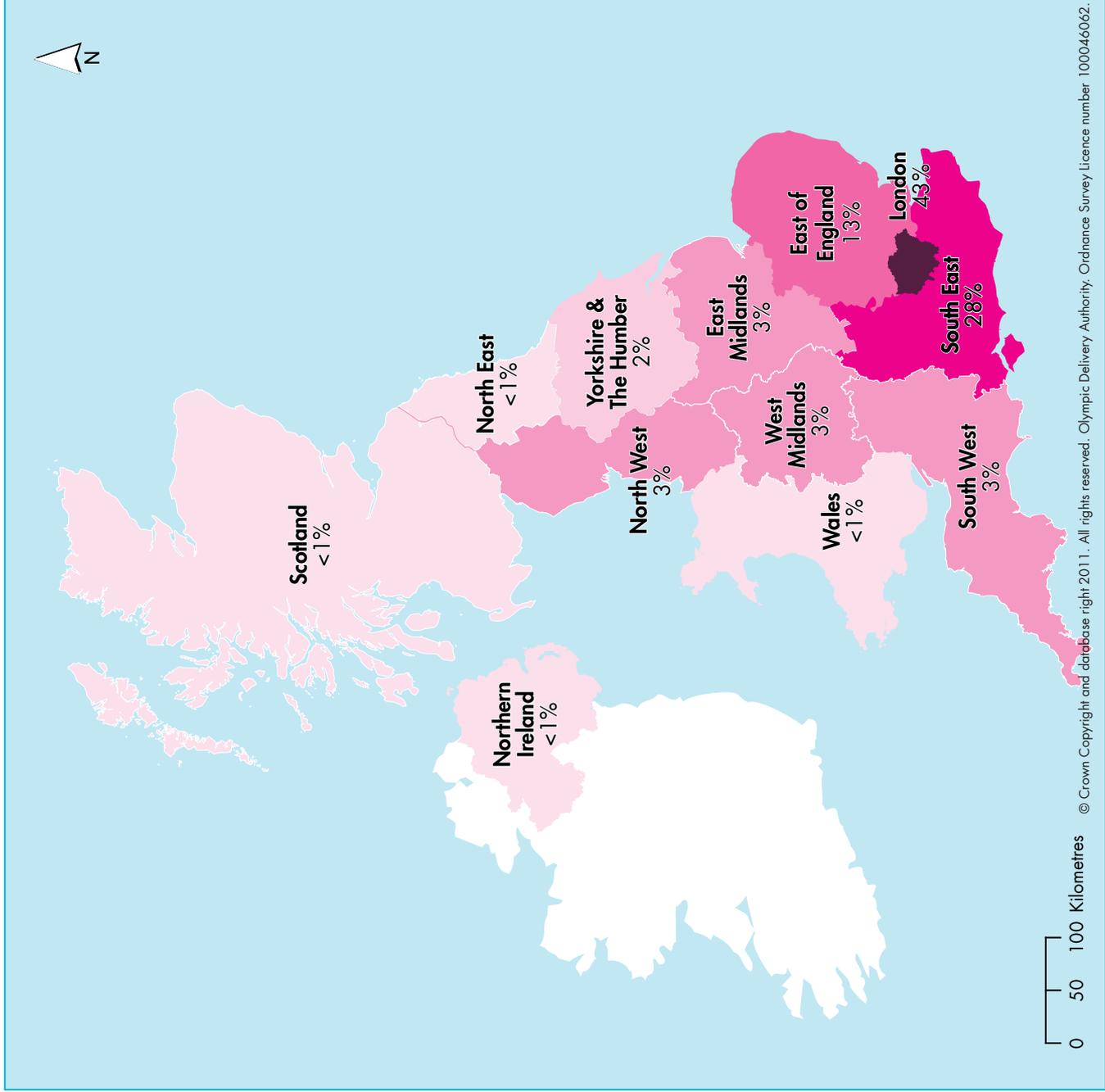
7.10 Figure 7.6 shows the predicted distribution of the home locations of UK spectators attending London venues (based on Day 7 of the Olympic Games). Figures 7.7, 7.8 and 7.9 illustrate the predicted distribution of where spectators will travel from on the day of the event for the Olympic and Paralympic Games.

Figure 7.6
Predicted distribution of home
locations of UK spectators
attending London venues
(Day 7)



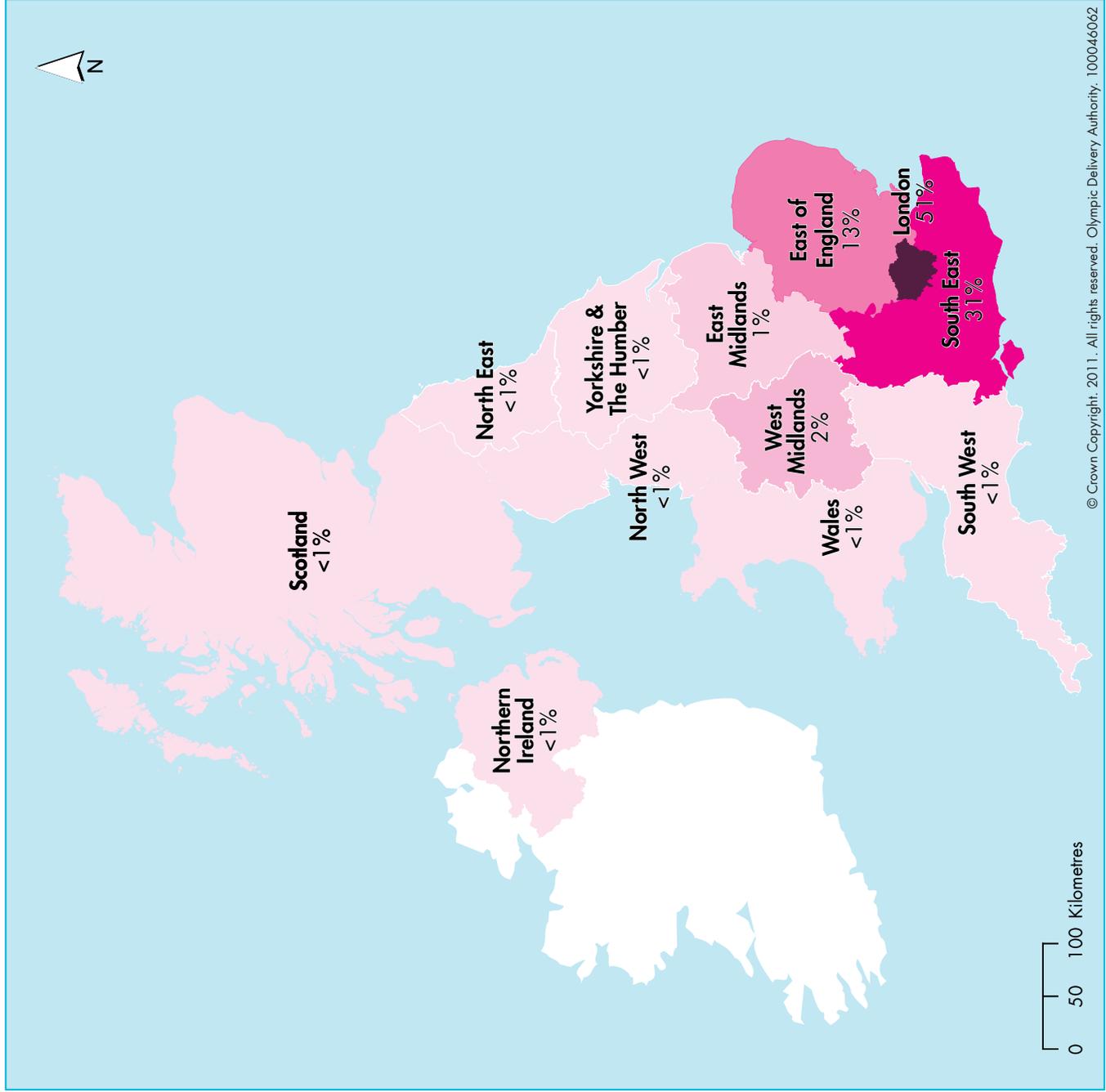
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Figure 7.7
Predicted distribution of where
spectators will travel from on
the day of the event
(London venues Day 7)



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Figure 7.8
Predicted distribution of where
spectators will travel from on
the day of the event (London
venues, Paralympic Games,
Day 3)



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Number of journeys

7.11 As indicated above, there will be a certain number of spectator tickets available for each day of the Games. However, this is not the same as the number of journeys that will be undertaken by spectators on the public transport network.

7.12 For example, people travelling to Live Sites, cultural events or non-ticketed events will create demand for additional journeys over and above those generated by spectators at competition events.

7.13 There will also be a significant proportion of spectators who will see more than one event on a single day. If these events are in the same venue then the total number of transport journeys will be reduced. However, if they are in different venues then there will also be a connecting journey to be planned for and managed.

7.14 The level of spectator transport demand will ultimately be driven by the venue capacities. The geographical distributions of venues and spectator origins will influence the flows of demand on the transport networks and the timing of peaks and troughs of travel demand will be related to the Games competition schedules.

7.15 Although the modal share will vary from venue to venue, rail transport will be used by the majority of spectators for journeys within Greater London. Outside London, the accessibility to venues by different modes and the likely spectator origins have informed the assumptions made for the proportion of spectators using different modes of transport.

7.16 Based upon the experience of previous major events in London, it is estimated that around 80 per cent of spectators attending Greater London venues will travel by rail.

7.17 Coaches (chartered and scheduled 2012 Games coach services) and park-and-ride (bus based), local buses, walking and cycling and river transport will provide other transport options. Figure 7.9 indicates the typical mode shares that are currently expected for spectators attending venues in the Olympic Park, River Zone and Central Zone. The shares show the main mode of transport that spectators will use to reach the venues and do not take into account the fact that many spectators will use more than one mode during their journey. For example, a spectator who travels on the District Line from Earl's Court to West Ham and then walks to the Olympic Park is included in Figure 7.9 within the rail mode share. Figure 7.10 illustrates the typical mode shares that are currently expected during the Paralympic Games.

7.18 The mode shares indicated in Figures 7.9 and 7.10 are based upon the experience of previous major events in London and represent the current planning assumptions. It is the ODA's intention to achieve higher walking and cycling levels than those shown in the figures.

Figure 7.9 Typical mode share planning assumptions for the Olympic Park, River Zone and Central Zone

Zone	Rail, London Underground and DLR	Park-and-ride	Coach	Walk	Cycle	Local bus	Taxi	River services
Olympic Park	78%	7%	7%	2%	2%	2%	1%	1%
River Zone (excludes ExCeL)	80%	0%	5%	2%	2%	5%	1%	5%
Central Zone	82%	0%	5%	3%	2%	5%	2%	1%
ExCeL	85%	4%	4%	2%	2%	2%	1%	0%

Figure 7.10 Paralympic Games typical mode share planning assumptions for the Olympic Park, River Zone and Central Zone

Zone	Rail, London Underground and DLR	Park-and-ride	Coach	Walk	Cycle	Local bus	Taxi	River services
Olympic Park	70%	7%	14%	2%	2%	2%	2%	1%
River Zone (excludes ExCeL)	70%	0%	10%	3%	2%	8%	2%	5%
ExCeL	73%	3%	15%	2%	2%	2%	3%	0%

7.19 The latter half of the Paralympic Games will take place during the school term and it is assumed that a significant proportion of spectators are likely to be schoolchildren.

7.20 Figure 7.10 shows the current planning assumptions for mode shares to the Paralympic Games on a weekday. At weekends, it is estimated that the mode shares will be similar to those for the Olympic Park during the Olympic Games.

7.21 The prediction of mode shares can never be completely accurate, so different scenarios have been and will be tested for different venues to ensure that the transport systems are robust. The formulation of these scenarios and validation of assumptions will be based upon an increasingly comprehensive analysis of:

- the capacity of the public transport networks;
- existing data on travel patterns within and outside London and the impacts of sporting events;
- ongoing surveys and monitoring of travel choice and behaviour during the Games planning period; and
- ticket sales data as it becomes available.

7.22 The comprehensive information and ticketing strategy that will be used for the Games will provide London 2012 and some 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.

7.23 There are a number of steps that can be taken to encourage spectators to plan their travel and consider their travel choices in advance. The spectator journey planner (SJP) will be available on the London 2012 website from summer 2011 and will allow spectators to select travel options, including accessible travel options, and will direct them to booking facilities for their selected journey.

7.24 London 2012 will also be providing credible and up-to-date journey planning information to spectators in the lead-up to, and during, the Games. This will ensure that people can plan their journeys and make optimal use of all modes across the transport network.

Workforce demand

7.25 The Games workforce, made up of around 200,000 people for both Games, comprising paid staff, contractors and volunteers, will add a significant demand for transport on top of that generated by spectators. In all cases, demand is considered in terms of both spectators and workforce, thus providing a picture of total demand for public transport for the Games.

7.26 Assumptions regarding shift patterns and overall numbers of staff have been developed by LOCOG and are subject to change as and when resource plans are finalised. LOCOG is responsible for meeting the accessible transport needs of the Olympic and Paralympic Family workforce.

Access and inclusion

7.27 An important element of the transport planning for the Games is an assessment of the demand for accessible travel by disabled spectators.

7.28 To understand the capacity available on the network for disabled spectators and to understand where additional services may be necessary to meet demand, the ODA has undertaken capacity and demand analysis, scenario testing and crowding analysis.

7.29 Detailed analysis of demand forecasting, route choices and capacity studies for spectators with access requirements using the public transport network has been undertaken for all Olympic and Paralympic venues. This work has informed specific mode and service share assumptions. The results of this demand forecasting work highlights the need for additional accessible transport services and the need to provide some pre-booked accessible parking for spectators at venues.

7.30 Based on information from the ODA's delivery partners and from previous Games, the following needs have been identified:

- nine per cent of people travelling to the Games will have trouble using stairs;
- one per cent of people travelling to the Games cannot use stairs at all;
- one per cent of net capacity at Olympic Games venues will consist of wheelchair spaces with accompanying companion seats; and
- one per cent of net capacity at Olympic Games venues will consist of enhanced amenity seating.

It is acknowledged that during the Paralympic Games there may be a higher percentage of disabled spectators, but the overall number of disabled people will not significantly increase.

Background demand in London

7.31 Spectators and workforce will be using transport networks alongside regular passengers not travelling to the Games. As such, the impacts of the Games on this background demand and vice versa must be understood.

7.32 The ODA has undertaken detailed analysis to understand the likely levels of background demand during the summer months and if the Games will have any effect on this demand. The analysis indicates that there is likely to be some reduction in peak hour travel, but an increase in travel during the late morning and afternoon period. These assumptions have been included within the planning framework and will be subject to further analysis to ensure that they remain sufficiently robust to inform planning.

Seasonality

7.33 The assumption that background traffic will decline during the Games due to the summer holidays, the 'seasonality effect', was derived from an assessment of both rail and road traffic count data provided by transport operators during the time of the bid. This work has been reviewed and refined to understand the likely patterns throughout the day. However, it is important to note that while the overall daily background demand is likely to be reduced during the summer months, there are times during the day when background demand could experience a slight increase. A range of data sources from different modes and from different locations has informed a range of assumptions to be made regarding the likely non-Games travel demand in the summer of 2012.

Transport ticketing

7.34 Ticketed spectators to sporting events in the London area will receive a Games Travelcard for London's public transport system on the day of the event.

7.35 London 2012 has worked closely with transport operators to provide spectators with a straightforward way to purchase travel tickets to attend Olympic and Paralympic events. The travel ticketing process will become an integral part of the overall Games experience for the spectator. Spectators will be able to plan their journeys on the London 2012 website using the spectator journey planner (SJP) from summer 2011. This will allow spectators to select their preferred travel options, including accessible travel options, and will direct them to booking facilities for their selected journey. Spectators will be able to purchase travel tickets through this process for all public transport modes including rail, coach, park-and-ride, river and pre-booked accessible parking. These travel services will include accessible transport provision, augmented schedules, special fares and flexible terms to fit the requirements when travelling to London 2012 events.

7.36 The Games Travelcard arrangements are limited to the holders of a sporting event ticket on the day of the event only (spectators will have to pay for all journeys at other times). The Games Travelcard applies to London Underground services, DLR, London Buses, Tramlink, and the London Overground. The Games Travelcard also covers the parts of the National Rail network where travel is provided in the London Travelcard Zone 1-9 area. In addition, spectators will be entitled to discounts for river services available at the time. However these special travel arrangements do not include taxis, private hire cars, Gatwick Express, Stansted Express, Heathrow Express or Heathrow Connect services between Hayes & Harlington and Heathrow.

7.37 For the purposes of the Games, spectators with event tickets to the venues at Hadleigh Farm (Leigh-on-Sea), Lee Valley White Water Centre (Cheshunt) and Eton Dorney (Windsor & Eton Riverside, Slough and Maidenhead) will also be able to travel from central London to the recommended venue stations on the day of their event using their Games Travelcard. There are many other events and attractions that will take place during the Games that will not be included in the Games Travelcard, such as road events, eg. the Marathons, and Live Sites that feature big screen public viewing points.

7.38 Travel to London or travel to venues outside London, such as Weymouth and Portland and regional football stadia, will be at the expense of the spectator. London 2012 has been working with train operators to put in place commercial ticketing arrangements that will encourage spectators to use public transport.

7.39 London 2012 will encourage spectators to purchase and receive their mainline rail tickets in advance to minimise pressure on station ticket offices during the morning peak. Planning and booking of 2012 Games train tickets will be available from the summer of 2011.

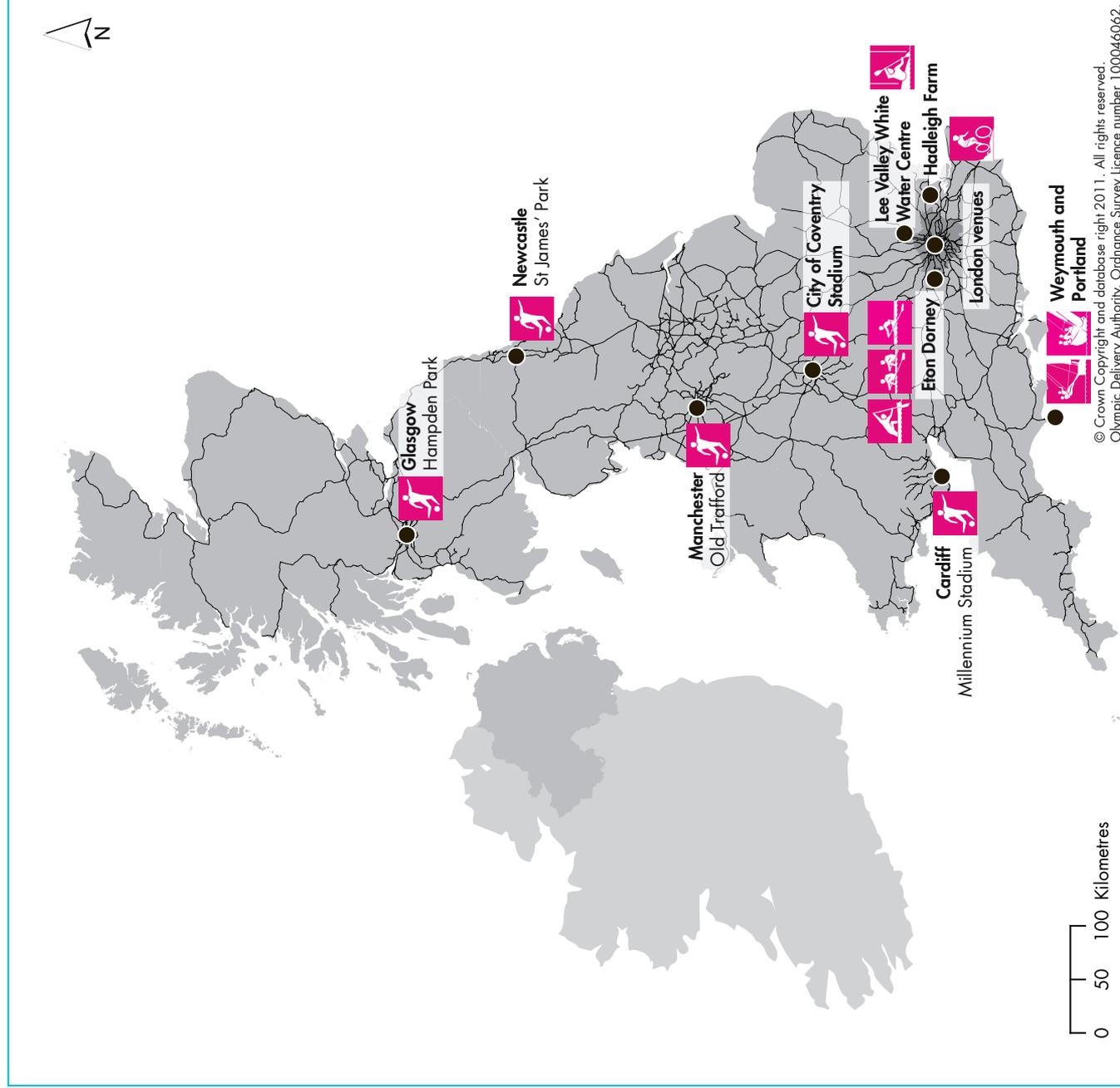
Rail strategy

7.40 The London 2012 Games are being promoted as the 'public transport Games' and there is an aspiration that 80 per cent of spectators will arrive at Games venues in London by rail, and almost all by public transport. The ODA has worked with train operating companies (TOCs) and the DfT to deliver additional capacity and services to transport spectators to and from the sporting venues. These additional services and capacity will need to be delivered while minimising the impact on background demand using existing TfL and TOC services. There will be no planned rail or Underground engineering works in and around London or on key routes during the Games. Figures 7.12 and 7.13 show rail services to London and UK venues.

7.41 The overall rail strategy contains the following elements:

- Later last trains from London terminals for spectators returning from the Olympic Park and other London competition venues. Key trains to operate at maximum length to maximise capacity. All DLR services to operate at three-car formations.
- A train plan that maintains services for regular travellers during the Games.
- Provision made within the majority of London train operators for strengthening of existing services to increase capacity, mainly focused on off-peak and weekends.
- Late-night services that allow spectators in the Greater London area and the south-east to get home by public transport.
- Additional late-night services to main centres of population broadly within a two-hour journey of London including – Cardiff, Bristol, Exeter, Sheffield, Leeds, York, Birmingham, Manchester and Liverpool.
- Provision of 'standby' trains on some National Rail routes to cater for over-running events and higher than predicted passenger demand.
- Some additional earlier Sunday morning services on key routes into London.
- Operators undertaking early maintenance to rolling stock and infrastructure to provide enhanced levels of reliability during the Games.

Figure 7.12
UK rail connections to sports venues



<p>Lee Valley White Water Centre National Express East Anglia (via Cheshunt)</p> <p>Eton Dorney First Great Western (via Slough and Maidenhead) South West Trains (via Windsor & Eton Riverside)</p> <p>Hampden Park ScotRail</p> <p>Arriva Cross Country (via Glasgow) Transpennine Express (via Glasgow)</p> <p>Millennium Stadium (via Cardiff Central) Arriva Trains Wales First Great Western</p> <p>City of Coventry Stadium London Midland Virgin West Coast Arriva Cross Country</p>	<p>Old Trafford (via Manchester Piccadilly) Northern Trains Virgin West Coast London Midland Arriva Trans Pennine Express Arriva Trains Wales</p> <p>St James' Park (via Newcastle) First Trans Pennine Express East Coast Northern Trains Arriva Cross Country</p> <p>Hadleigh Farm (via Leigh on Sea) c2c National Express East Anglia</p> <p>Wembley Stadium London Overground (via Wembley Park) London Underground (via Wembley Central) Chiltern Railways (via Wembley Stadium)</p> <p>Weymouth and Portland First Great Western South West Trains</p>
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The key to sports pictograms can be found in appendix E

Rail service delivery

7.42 There are three recommended stations serving the Olympic Park: Stratford, Stratford International and West Ham. The ODA has specified an increase in mainline services with the operators during the Games.

- Stratford will be served by Greater Anglia with up to 17 trains per hour, from London Liverpool Street in the heart of the city, providing a capacity of up to 15,000 spectators per hour.
- Stratford International will be served by the Southeastern high-speed services with up to 12 trains per hour from St. Pancras International, providing a capacity of up to 12,000 spectators per hour.
- West Ham served by c2c with up to 10 trains per hour from London Fenchurch Street, providing capacity of up to 10,000 spectators per hour. West Ham is connected to the Olympic Park via the Greenway – a dedicated pedestrian walkway.

7.43 Approximately 75 per cent of all spectators tickets are expected to originate from UK addresses. Of this, on the day of an event, around two-thirds will originate from London, the south-east and east of England, with a further third from the rest of the UK.

7.44 To aid rail travel to the Games, a 2012 Games train ticket has been developed by the train companies, working through the Association of Train Operating Companies (ATOC), the key benefits being that:

- it is exclusive to ticket holders for sporting events;
- it is available to all venue stations;
- bookings will be taken from July 2011, over 12 months in advance;
- it has flexible aspects to return journey;
- it will be retailed via a dedicated website;
- there will be first-class fares available; and
- railcard and child discounts will be allowed.

7.45 The vast majority of London and National Rail services will be delivered through existing franchise agreements with the relevant train operator. London 2012 has negotiated services, which aim to minimise the planned level of disruption to the networks and regular passengers. Figure 7.14 shows a summary of spectator rail services. In recognition that many Games spectators will not be regular users of the National Rail network, the following enhancements are also included within the specifications for train operators and Network Rail on station operations:

- additional staff to assist with train operation;
- temporary facilities for spectator queuing;
- improvements to station signage to provide mainly icon-based wayfinding during the Games;
- provision of information concerning Games venues using announcements and visual systems on trains and stations; and
- information on the spectator routing strategy from station to venue.

7.46 On routes that serve a recommended venue station, appropriate adjustments have been made to cater for venue-specific demand requirements by provision of additional capacity on all arrivals between 150 minutes and 60 minutes before scheduled session start times and all departures between scheduled session end times and 120 minutes afterwards.

TfL service delivery

7.47 London Overground, London Underground and the DLR form the core capacity and capability that will underpin rail services in London during the Games. The ODA has been working very closely with London Overground, London Underground and the DLR to ensure that services accommodate background users and spectators using recommended venue stations with a minimal level of planned disruption to their networks. These services need to fit in with the wider Games transport services and objectives.

7.48 During the planning and delivery of these services, the following considerations were taken into account:

- While the capacity at peak periods cannot be enhanced, service levels can be improved during other periods throughout the day.

- Regular service timetables will be altered as little as possible to minimise disruption. Only DLR services will require significant change.
- Normal operational safety framework of all operators will not change.

7.49 Later running trains on London Underground, London Overground and DLR services that directly serve venues will be required on most days of the Games, but will not run all night.

Key delivery partners and stakeholders in the rail industry

7.50 London 2012 continues to work with the rail industry through the planning process to ensure that a successful strategy is delivered. The key delivery partners who provide the services are also stakeholders in terms of having an interest in the application of the Transport Plan. The main groupings within the rail industry are described below.

London Underground

7.51 London Underground Limited (LUL) is a subsidiary of TfL. It operates services that directly link the Olympic Park with the rest of London.

Docklands Light Railway

7.52 Docklands Light Railway Limited (DLR) is a subsidiary of TfL. It manages a Franchise Agreement under which Serco-Docklands Limited provides train services. DLR also procures and manages infrastructure enhancements through concession and traditional construction contracts.

7.53 All DLR trains will be formed of three-car units.

London Overground

7.54 London Overground services link the East, North and West London Lines with parts of south London (using sections of the national and TfL rail networks). The services are operated on behalf of the TfL subsidiary Rail for London Limited (RfL) by its concessionaire London Overground Rail Operations Limited (LOROL). RfL is part of the 'London Rail' division of TfL; London Rail is responsible for securing improvements to the National Rail system in London, as well as having responsibility for the DLR and Croydon Tramlink. London Rail has funded the upgrade of the East and North London Lines (in conjunction with the ODA and Network Rail) in their entirety. The funding has included capacity upgrades, staged service extensions since May 2010 and a new train fleet for all Overground services. Apart from London Overground, London Rail is not directly responsible for National Rail services in London and improvements are achieved through working in partnership with organisations such as the DfT, Network Rail and the train operating companies.

Train operating companies (TOCs)

7.55 Since 2004, rail Franchise Agreements have included an 'Games' clause which sets out how train operating companies (TOCs) are expected to cooperate in the development and execution of Service Delivery Plans for the Olympic Games and Paralympic Games. Where operators have a pre-2004 Franchise Agreement without the 'Games' clause, the ODA and Government look to those operators to act as though they did.

7.56 The ODA has worked closely with TOCs and the DfT to develop a specification for Service Delivery Plans for the Olympic Games and Paralympic Games. This specification has been informed by the demand forecasting being carried out by the ODA, as well as the outputs from the rail operations planning work streams detailed below.

Figure 7.13 Summary of spectator rail services

	Journeys within London on TfL services (LU, DLR and London Overground)	Journeys from London suburbs and south-east England	Journeys from the rest of the country to London venues (inter-city routes)	Journeys to venues outside central London
Tickets	Inclusive travel on day of event for spectators holding event ticket.	Inclusive travel in zones 1–9 for event ticket holder on day of event. Ticket holders for events outside London can book 2012 Games Train Tickets in advance.	Event ticket holders can book special 2012 Games Train Ticket available in advance. Tickets are available from June 2011 and quota controlled.	Event ticket holders can book 2012 Games Train Ticket in advance. Tickets are available from July 2011.
Service level	Enhanced inter-peak and evening services, third peak 22.00 to 00.30 on Central and Jubilee lines, most lines finish one hour later than usual. All DLR trains in three-car formation. London Overground eight trains per hour all day on North London Line.	Additional capacity provided throughout the day. Later finish on all major routes. St. Pancras International to Stratford International and Ebbfleet International served by high-speed service Javelin® service during Olympic Games (see Fig 7.17)	Additional late-night services to operate to key destinations approximately two hours from London to allow spectators to make day trips to Games venues.	Special services to operate to recommended venue stations and regional football stadia.
Early morning services	London Underground AM peak services operate as normal peak capacity, DLR and London Overground enhanced service. Earlier services to operate on Sunday.	Early morning peak services will operate as normal with some strengthening of formations where possible. Earlier services to operate on Sunday.	Early morning peak services will operate as normal. Earlier services to operate on Sunday.	Services enhanced to provide additional capacity on top of the regular timetable.
Middle day service	Off-peak services increased frequency.	Off-peak services strengthened where possible to provide additional capacity.	Existing services to operate no fundamental changes to service plans.	Special event timetable to provide additional capacity before and after session.
Evening service	London Underground PM peak services operate as normal peak capacity, DLR and London Overground PM peak enhanced service. Increased frequencies later in evening.	Strengthening of some services on key routes.	Existing services to operate, no fundamental changes to service plans.	Special event timetable to provide additional capacity before and after session.
Late-night service	Third peak 22.00 to 00.30, trains operate up to c01:30.	Additional late-night trains to operate up to c01:30.	Additional late-night trains to operate up to c01:30.	Special event timetable to provide additional capacity before and after session.
Contingency	Standby services available on some routes where capacity can accommodate localised requirements, for example, late at night.			

Figure 7.14 Comparison of rail services at Stratford station

	2006 peak frequency (trains per hour, per direction)	2012 peak frequency (potential trains per peak hour, per direction)
North London Line	5 (three-car trains)	8 (four-car trains)
Great Eastern mainline	9	17
Great Eastern local	16	15
Lea Valley Line	2	2
Central Line	27	30
Jubilee Line	18 (six-car trains)	30 (seven-car trains)
Docklands Light Railway (Poplar to Stratford station)	8 (two-car trains)	12 (three-car trains)
Docklands Light Railway (Canning Town to Stratford station)	N/A	12 (three-car trains)

Figure 7.15 Comparison of rail services at West Ham station

	2006 peak frequency (trains per hour, per direction)	2012 peak frequency (potential trains per hour, per direction)
North London Line	3	8
Docklands Light Railway (Canning Town to Stratford International station)	N/A	12 (three-car trains)
c2c	6	12
District Line/ Hammersmith & City Line	26	24 (all day)

Figure 7.16 Comparison of rail services at Stratford International

	2010 peak frequency (trains per hour, per direction)	2012 maximum peak frequency (potential trains per hour, per direction) Javelin® operation
To St. Pancras International	8	12
To Ebbsfleet International	8	12

Freight operating companies (FOCs)

7.57 The Games will present both an opportunity and a challenge for FOCs and the ODA has been discussing both of these elements with FOCs and other interested bodies. The North London Line (NLL) capacity upgrade (one-third funded by the ODA) includes significantly-enhanced facilities for freight trains. Additionally, gauge enhancement of the Gospel Oak–Barking route by Network Rail has created a diversionary route for container services, avoiding the Gospel Oak–Stratford section of the NLL.

7.58 FOCs as well as TOCs are important stakeholders in the development of rail operations plans, not only for the Games but also in relation to the construction period for the Olympic Park. Two railheads have been moving up to 60 per cent of materials into the construction sites.

Network Rail

7.59 Network Rail and train operators are essential delivery partners both for the infrastructure works and the Service Delivery Plans for the Olympic Games and Paralympic Games work streams. Network Rail recognises the importance of the successful delivery of London 2012 Games rail schemes and services and has put in place a dedicated team focused on Games delivery.

7.60 Work streams with Network Rail included the North London Line improvements, a major part of the Stratford station upgrade, including the extension of platforms 10a, 11 and 12, the Angel Lane new freight loop and the Lea Valley Line signalling improvements. It will also play a key role in timetabling and managing the UK rail network during the Games.

7.61 Network Rail has funded and undertaken some further improvement works at Stratford station during the spring and summer of 2011. These complement the capacity and enhancement works already funded by the ODA and give remaining parts of the station a more modern appearance, similar to those already completed, in time for the Games.

7.62 Network Rail is also closely involved in the wider development work on the Olympic Park to ensure that the interface with the railway is managed safely and efficiently. In particular, Network Rail provides support to the operation of the High Speed One line, on which the Javelin[®] high speed service will operate.

Central Government

7.63 The ODA is working with its partners across Government to ensure the objectives and outputs are joined up to facilitate delivery.

7.64 The DfT is a key partner and has the contractual relationship with train operators that will allow the Service Delivery Plans for the Olympic Games and Paralympic Games to be put in place. The Highways Agency and TRANSEC are also part of the DfT. The DfT is also responsible for furthering Government transport policy and the ODA continues to work closely with the DfT to deliver the respective organisations' objectives.

Office of Rail Regulation

7.65 The ODA has been working with the independent Office of Rail Regulation (ORR) on a broad range of issues relating to the Transport Plan. The London Olympic Games and Paralympic Games Act 2006 has given the ORR an additional duty of '... facilitating the provision, management and control of facilities for transport in connection with the London Olympics.'

7.66 The ODA has had an early dialogue with the ORR on how the Transport Plan and its funding are compatible with the ORR's work on the Periodic Review of Network Rail's finances. The ORR will use 2 Section 17 (1) of the London 2012 Olympic Games and Paralympic Games Act 2006 to monitor progress on planning the Games timetable and what impacts this will have on the track access regime. The ORR also has a role in ensuring the safety of the railway (HM Railway Inspectorate), including the operation of the Games services.

Enhancements to the rail system

7.67 A wide range of schemes were commissioned to enhance the different rail systems in time for the Games and also to enhance services temporarily during the Games. These schemes can be categorised as: major rail schemes to enhance rail access to the Olympic Park – Stratford station upgrade, West Ham station capacity enhancement, Stratford International station works, North London Line (North Woolwich Branch) conversion to DLR between Stratford and Canning Town and major capacity increases for the London Overground services on the North London Line between Willesden Junction and Stratford and West London Line at Latchmere Curve.

7.68 Some schemes are 'background' schemes that have been delivered and funded by organisations other than the ODA, while other schemes are 'Games' schemes that are funded, at least in part, by the ODA.

Major rail schemes for the Olympic Park

Stratford station

7.69 Stratford station is the main recommended station serving the Olympic Park and a major east London interchange.

7.70 Stratford station currently experiences occasional periods of passenger congestion. As well as during the Games, the number of people using the station is expected to increase significantly by 2016, as forecast in the Mayor's London Plan, and due to the large Stratford City development being built adjacent to the station.

7.71 A package of improvements to increase capacity and accessibility at Stratford station has been completed. These improvements will help the station accommodate spectators during the Games, and are already providing benefits to regular passengers before and long after 2012. This work complements works related to the Stratford City development and the DLR extension to Stratford International station.

7.72 The improvements at Stratford station include:

- re-opening the eastern subway with new stairs to platforms 3/5 and 6/8;
- an additional westbound platform for the Central line;
- widening the eastern end of platforms 6/8;
- platform extensions and associated network works for platforms 10a, 11 and 12;
- improved accessibility and connections to, and between, platforms through the provision of additional lifts and staircases;
- the installation of nine lifts, providing access for mobility impaired spectators to/from all platforms;
- increased colour contrasting in lifts, on stairwells and other areas;
- added tactile strips to all platform edges and stairwells affected by the works;
- a new upper-level entrance structure to link the DLR, Jubilee and Central lines with the new town centre link bridge;
- upgraded station domestic power supplies, increased station command and control facilities; and
- de-cluttering of platforms 3/5 and 6/8.

7.73 Accessibility has also been improved with the widening and lengthening of platforms and the introduction of a new mezzanine level, which has helped to ease congestion and create a more comfortable journey experience. Located at the eastern end of the station, the new entrance and exit includes a lift, two escalators and a fixed staircase to improve passenger flow and accessibility.

7.74 Other improvements to the station, some of which are already completed or under development are:

- DLR has built two new replacement platforms for use by the North London Line London Overground services. The platforms connect to all subways, which have been extended, together with a connection between the central and eastern subways.
- DLR has converted the existing North London Line lower-level platforms to use for its new extension from Canning Town to Stratford International.
- DLR has upgraded the existing mezzanine level platform to two terminating platforms for services to Poplar.
- As part of the Stratford City development, a new northern ticket office for the station has been built. It connects to all three subways and the new town centre link bridge, which will link Stratford town centre with the new Stratford City development. The northern entrance, which has been funded by the company responsible for the Stratford City development and opens in September 2011, is another new accessible entrance point to Stratford station.

7.75 These infrastructure works have increased the peak capacity of Stratford station for existing and new services. A comparison of existing and planned peak service levels available during the 2012 Games is shown in Figure 7.15.

7.76 The infrastructure works at Stratford station are providing much needed additional capacity but are also essential to develop robust operational plans for each of the modes.

7.77 The first of the ODA-funded works, the widening of platforms 6 and 8, was completed in August 2007. The second new staircase to the Western subway was completed in 2009 and the two additional lifts brought into service in early 2010. All other major works including the remaining lifts and stairways, the reopened and extended eastern subway, the North East Corner (platform 10a and 11) works, the link subway (along with the extensions to the western and central subways), the new platform 3a as well as systems and signage opened in late 2010. The extensions to platforms 11 and 12 will be delivered with the completion of the Lea Valley line upgrade works in December 2011.

West Ham station

7.78 Work carried out at West Ham station is providing new passenger links that allow spectator access to the Olympic Park along The Greenway. The Greenway is a public walkway that will be used by spectators accessing the Olympic Park from West Ham station.

7.79 The ODA worked with the London Borough of Newham and London Underground to enhance access between the District line and Hammersmith & City line platforms, which will be used by the majority of spectators using West Ham station to reach the Olympic Park. Planning permission was granted in November 2009.

7.80 The West Ham station scheme is designed to create a clear route for spectators from the District line and Hammersmith & City line platforms to outside the station and on to The Greenway. Spectators will then reach the southern entrance of the Olympic Park via a 1.6km walk along The Greenway.

7.81 Work at West Ham delivered by the ODA includes:

- a staircase, overbridge and elevated walkway from the District line platform to Manor Road;
- a safe, high-volume pedestrian route along Manor Road with relevant traffic protection and restrictions; and
- a temporary, wide staircase and lifts up to The Greenway, permanent CCTV and lighting improvements to Manor Road and landscaping improvements following removal of the temporary works.

7.82 London Underground completed the refurbishment of District line trains in March 2008. New trains will start to be introduced on the Hammersmith & City line in 2012.

7.83 Planned signalling changes undertaken by Network Rail for the adjacent c2c (mainline rail) will allow for increased operational flexibility so that more train services can stop at the station, increasing the number of passengers able to board and alight at West Ham station during the peak hours. However, there will also be increases in inter-peak and late evening capacity of up to 50 per cent compared to the current service to cater for Games demand. In developing these proposals, the impact on station circulation has been assessed and fed into the rail operations plans.

Stratford International, Ebbsfleet and St. Pancras International stations

7.84 Eurostar services began operating from St. Pancras International station in November 2007. A full timetable of domestic services from Stratford International station started in December 2009.

7.85 During the Olympic Games, a rail shuttle service will operate from St. Pancras International to Stratford International station (for the Olympic Park) and on to Ebbsfleet International in Kent. This temporary Games-time service, called the Javelin[®], will use the Class 395 high-speed trains currently operating the Southeastern high-speed services.

7.86 At Stratford International station, passengers using the Javelin[®] will be able to use a new access at the eastern end of the domestic platforms which will reduce walking times for those passengers not using the new DLR link.

7.87 Located at the eastern end of the station, the new entrance and exit includes a lift, two escalators and a fixed staircase to improve passenger flow and accessibility.

7.88 For the period of the Games, all four platforms at Stratford International station will be needed for Javelin[®] shuttle services. International visitors travelling to/from Stratford will interchange at Ebbsfleet International or St. Pancras International and join one of the Javelin[®] services for their journey to the Olympic Park.

7.89 Temporary works are required at Ebbsfleet International to facilitate the flows of international and Games passengers. Detailed operational plans for St. Pancras International, Stratford International and Ebbsfleet International during the Games are being developed.

7.90 Some of the works at Stratford International and Ebbsfleet International stations are expected to be temporary. This includes decking used on the international platforms and ramps at Stratford International station to provide access between the international platforms and the high-speed Games services. Further work is underway to understand Games, background and legacy demand and infrastructure at these stations with High Speed 1 (HS1), the DfT, Network Rail and Southeastern Railway.

7.91 Key to the delivery of the operational plans for the Javelin® service will be the continued close working of a number of stakeholders and delivery partners, including Southeastern, HS1, Network Rail, Eurostar and the DfT. Figure 7.17 shows the comparison of services at Stratford International.

Changes to the North London Line

7.92 The North London Line (NLL) provides an orbital route, which does not pass through central London. It is becoming increasingly important as a passenger route and is an arterial freight route, linking the east coast ports to the West and East Coast Main Lines and providing a multitude of cross-London freight connections.

7.93 The NLL has undergone two significant changes before 2012. Firstly, the section between Willesden Junction and Stratford has been completely resignalled and upgraded, enabling a doubling of the number of passenger trains (which, being longer and larger, will result in a tripling of capacity). Secondly, the section of the line between Stratford station and Canning Town station (the former NNL North Woolwich Branch) has been converted from National Rail to DLR operation and extended from Stratford station to Stratford International station. For details, see the Docklands Light Railway and London Overground sections below.

7.94 The work interfaced with parallel works to extend the new East London Line north of Dalston Junction through to Highbury and Islington, which was completed when services were extended in March 2011.

Mode-specific schemes

London Underground

7.95 The London Underground network currently serves 276 stations. On an average day, it carries more than three million passengers, and on occasions the total has exceeded four million. The Games competition events together with the various cultural events will increase the demand on the network, albeit at a time of year when passenger levels are generally lower during the summer holiday period.

7.96 The package of background schemes that will benefit the Games will include line upgrades to enhance capacity, station refurbishment and modernisation, and infrastructure renewal.

Figure 7.17 – London Underground schemes

Line	Enhancement	Project completion date
Jubilee line	Introduction of a seventh car (January 2006) increasing capacity by around 17 per cent and a new signalling system allowing higher train frequency capable of increasing capacity by a further 33 per cent.	Summer 2011
Central line	Capacity enhancement scheme to improve resilience and allow a peak service level of 30 trains per hour.	Completed September 2006
Piccadilly line	Extension to Heathrow Terminal 5.	Completed March 2008
District line	Refurbishment of all 150 units of District line D-Stock (75 trains).	Completed March 2008
Hammersmith & City/Circle line	Revised and merged service to double frequency to Hammersmith & City services and aid Circle line reliability.	Completed December 2009
Victoria line	Fleet replaced by 47 new trains, providing an extra eight per cent increase in capacity.	By late 2011
Metropolitan line	Fleet replaced by 58 new, air-conditioned trains.	Introduced from August 2010

Figure 7.18 – Docklands Light Railway schemes

Line	Enhancement	Project completion date
Network-wide	Entire DLR network made three-car compatible (various schemes, see below).	2011
Network-wide	55 new vehicles for three-car operation, line extensions and enhanced Games-time services; 22 of the 55 vehicles 50 per cent funded by the ODA.	Completed October 2010
Network-wide	Improved system resilience through 'Non-Communicating Train' software upgrade to reduce instances of trains losing contact with the signalling system; part-funded by the ODA.	July 2011
West route	Improved system resilience by construction of a siding for a stand-by train next to Tower Gateway station; funded by the ODA.	Completed January 2010
West route	Improved system performance by doubling of Royal Mint Street Junction to reduce conflicts between Tower Gateway and Bank services; funded by the ODA.	Completed January 2010
West route	Complete rebuilding of Tower Gateway station and remodelling of track work to accept three-car trains.	Completed February 2009
West and south route	Infrastructure works to allow three-car operation between Bank and Lewisham by extending platforms/installing walkways and re-siting South Quay station.	June 2010
South route	Upgrade to Delta Junction (adjacent to West India Quay station) by constructing 'dive-under', reducing conflicting moves and increasing junction capacity by 25 per cent.	Completed August 2009
North route	Construction of two new three-car platforms to replace single two-car platform at Stratford station and walkways direct to Central line platforms.	Completed August 2007

Line	Enhancement	Project completion date
North route	Infrastructure works to allow three-car operation between Poplar and Stratford station by extending platforms/installing walkways.	Completed September 2009
East route	Extension of platforms at East India and Blackwall stations and power supply upgrade to enable three-car operation from Poplar to Woolwich Arsenal and Beckton; fully funded by ODA.	Completed September 2009
Beckton branch	Infrastructure works to allow three-car operation to Beckton by extending platforms or installing walkways; installation of two crossovers at Prince Regent to allow operation of high-intensity service to ExCel. Funded by the ODA, the Department for Communities and Local Government and LDA.	Late 2011
Beckton branch	Increase in station capacity by installation of an additional lift at both Prince Regent and Custom House stations and widening stairs at Prince Regent; funded by the ODA.	Late 2011
Beckton branch	Installation of covered link bridge from ExCel central circulation area to Prince Regent station footbridge; funded by ExCel.	Completed August 2009
Woolwich Arsenal branch	New branch to London City Airport (opened Dec 2005) and 2.6km extension to Woolwich Arsenal (major interchange with National Rail network), five new stations.	Completed February 2009
Stratford International branch	Conversion to DLR specification of National Rail line from Canning Town to Stratford station, three new stations and extension to Stratford International; part-funded by the ODA.	Completed spring 2011

7.97 Tfl's commitment to London Underground is around £1 billion per year up to 2012. Tfl and the ODA have agreed that the ODA's contribution to investment in the London Underground network prior to the Games will be taken forward as part of Tfl's overall investment programme and they will work together to ensure successful scheme development and implementation.

7.98 A wide range of London Underground enhancement schemes that are already planned will directly benefit the Games. Figure 7.18 illustrates these schemes.

7.99 London Underground is continuing to make rolling stock enhancements that benefit many disabled people. By 2012, 65 London Underground stations will provide step-free access between the street and the platform. The ODA has worked with London Underground to bring forward two stations onto its step-free programme in time for the Games.

7.100 The step-free scheme at Southfields station, which will serve the Tennis competition at Wimbledon, has been completed and is now operational. The step-free programme at Green Park station will serve central London cultural events and sports venues. Work is well under way for step-free access and wider improvements at this station and the programme will be completed by the end of 2011.

7.101 Although many London Underground stations are step-free from entrance to platform, these stations do not all provide level access between the platform and train. The ODA and London Underground are working together to identify solutions to overcome the step and the gap between the train and platform at key stations during the Games. Both the use of temporary platform humps and manual boarding ramps are currently being considered to assist with boarding and alighting trains.

Figure 7.20
Accessible Rail services to UK competition venues

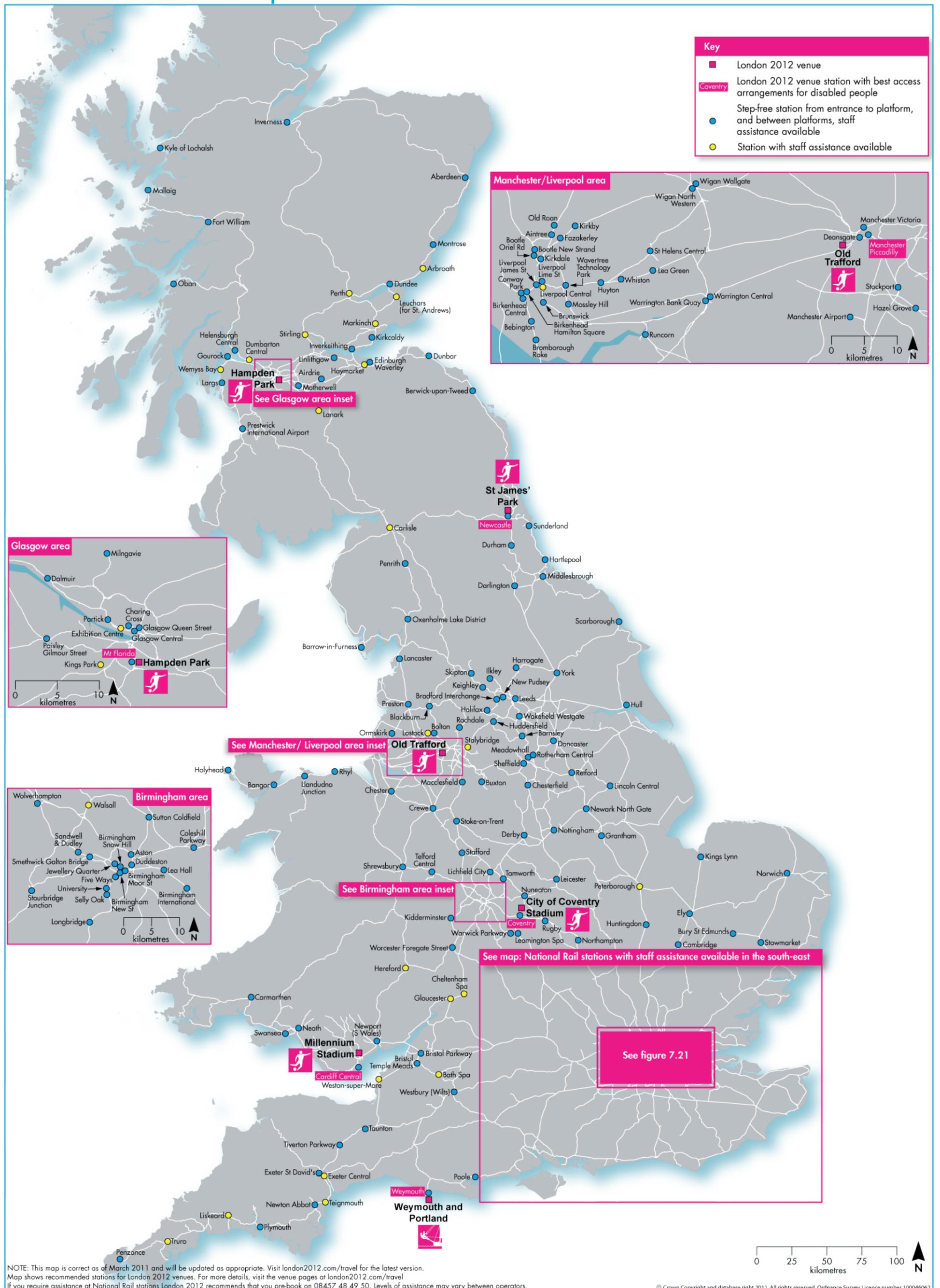
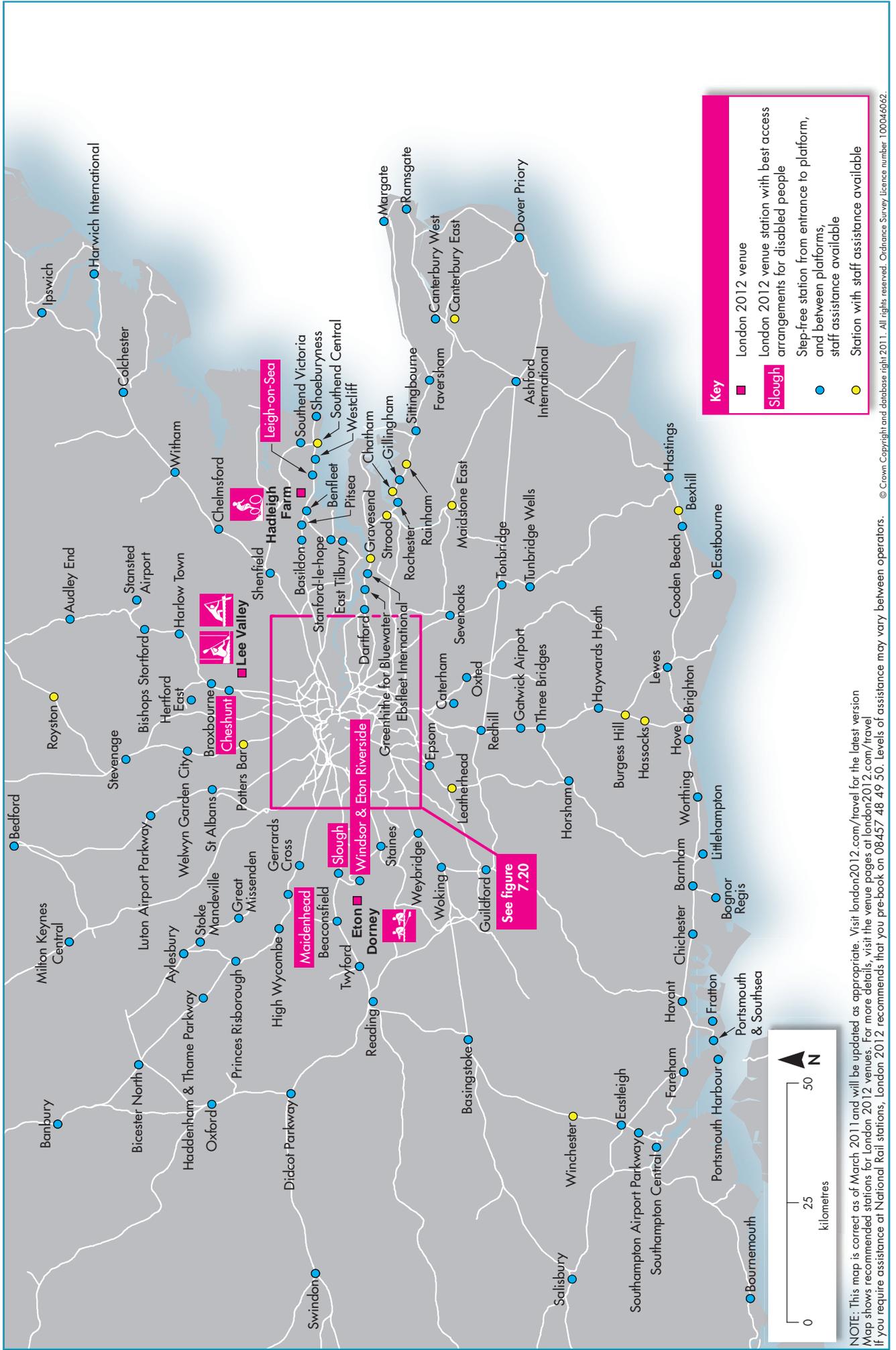


Figure 7.21 Accessible rail stations available in the south-east



Docklands Light Railway (DLR)

7.102 The DLR currently provides a step-free public transport service in east London. The DLR operates from Beckton/Woolwich in the east to Bank/Tower Gateway for the City of London in the west, and from Lewisham in the south to Stratford in the north.

7.103 To meet Games demand, DLR capacity is being increased through a number of improvement schemes. These schemes fall into two categories: background schemes, funded by TfL; and London 2012 Games schemes, funded by the ODA. Figure 7.19 illustrates these schemes, which are being delivered and will provide benefits well before the Games.

7.104 The DLR network serves a number of London 2012 venues. All vehicles have level access from train to platform and all vehicles have dedicated wheelchair user spaces. The ODA has worked with DLR to understand lift and vehicle capacities available on the network.

7.105 The ODA continues to assess and review DLR station facilities against the expected number of disabled people using this mode of transport to arrive at competition venues as plans for the 2012 Games develop and change. The ODA has funded the following lift and station improvements:

- upgrade of two lifts at Greenwich station
- upgrade of two lifts at Tower Gateway station
- two escalators at Custom House station (part-funding)
- new 17-person electric lift at Prince Regent station
- upgrade of the original lift at Prince Regent station
- new 17-person electric lift at Custom House station

7.106 Due to the nature and location of the DLR, the proposed enhancements will benefit both the Olympic Park and River Zone venues, as well as contributing to the delivery of the rail strategy for the Central Zone and cultural events.

7.107 The DLR has been extended from Canning Town to Stratford station (along the former NLL North Woolwich Branch) then onwards to a new station (Stratford International) in the heart of the Olympic Park. Four new stations have been built as part of this DLR extension: Star Lane, Abbey Road, Stratford High Street and Stratford International. The converted route also serves the existing stations at Canning Town, West Ham and Stratford. New DLR services will run between Stratford International and Woolwich Arsenal stations, and between Stratford International and Beckton stations.

7.108 This new DLR route, to which the ODA contributed funding, provides capacity and flexibility for future growth in the area and will be an important part of the rail network serving the Olympic Park and River Zone venues.

London Overground

7.109 London Overground covers services on the North London Line (NLL), the West London Line (WLL), the Gospel Oak–Barking line, the Euston–Watford DC line and the new East London Line (ELL). Overground services are operated on behalf of TfL by London Overground Rail Operations Limited.

7.110 During the Games, up to eight trains per hour will run on the busiest section of the NLL, from Willesden Junction to Stratford. Four trains per hour will operate between Stratford and Richmond and four trains per hour will operate between Stratford and Clapham Junction. This represents almost a doubling of services compared to current levels on both the NLL and WLL.

7.111 TfL has converted the former London Underground ELL to National Rail standards and London Overground now operates on the line. At the south end, services run to Crystal Palace, West Croydon and New Cross. In the north, the line runs to Dalston Junction and Highbury & Islington.

7.112 On the ELL, the former London Underground six trains per hour service has been replaced by around 12 trains per hour on the core section of the London Overground service during the Games, rising to 16 trains per hour by the end of 2012.

7.113 TfL has also purchased new rolling stock for London Overground services. Initially delivered as three-car units, the new class 378 trains were extended to four-car formation in 2010.

National Rail services

7.114 National Rail services are those run by train operating companies (TOCs) on the UK rail network. The network carries 2.75 million passengers per day, half a million of these commute into London. There are over 2,500 stations across the network. As well as directly serving a large number of the competition venues, National Rail services will also play a key part in the multi-modal journeys made by spectators from across the UK, particularly to and from London.

7.115 A number of Games-funded schemes have enhanced or will enhance the capability of the network (Games schemes), as well as rail schemes that are funded by other parties (background schemes, for example King's Cross), which will facilitate the delivery of Games transport.

7.116 There will also be a need for temporary rail service enhancements across the UK to accommodate the peaks of passenger demand generated by the Games.

Assisted Passenger Reservation Service

7.117 Along with other stakeholders, the ODA has contributed to the development of a replacement for the Assisted Passenger Reservation Service (APRS), a project being led by ATOC. There will be a new assistance booking system for rail customers available from summer 2011. Developing and improving this service will provide significant value to rail customers during the Games.

Figure 7.23 indicates the different National Rail schemes that will benefit the Games.

Other rail station enhancements

7.118 A range of station enhancements have been made to facilitate the delivery of rail services for the Games. These schemes are a mixture of works especially for the Games and schemes already planned by delivery partners.

7.119 The ODA has identified a number of strategically important rail stations where there are opportunities to make accessibility improvements during the Games. The ODA works closely with the Department for Transport's railways accessibility improvement programme, 'Access for All', to help deliver an improved and integrated service for all passengers.

7.120 Network Rail is delivering the Access for All (AFA) programme on behalf of the DfT. The 10 year programme gives improved step-free access from the entrance to platforms for stations nationally, all delivered without interrupting passenger journeys. The programme includes installing new lifts, footbridges, handrails and tactile paving.

7.121 For example, at Slough station, the Access for All programme will provide better access before summer 2012, giving spectators travelling to Eton Dorney an easier and more pleasant journey experience. Additionally, there are a number of stations across London where the programme has already been delivered including Lewisham, Streatham Common and London Euston. Further schemes planned are Vauxhall, Camden Road, Finsbury Park and Earlsfield.

7.122 More detailed information on the Government's Railways for All Strategy can be found on the Department for Transport and Transport Scotland websites.

Railway maintenance access planning

7.123 The construction work being carried out in and around the Olympic Park and across London and the UK requires efficient planning in relation to any railway possessions and road closures.

7.124 The ODA has worked closely with all its stakeholders to ensure an integrated approach to railway possessions planning that maximises utility of possessions and minimises disruption and cost.

Games rail services for competition venues

7.125 Rail improvements will allow rail services to a number of competition venues to be enhanced. The following sections describe the rail services that will be available for each venue or group of venues.

Olympic Park

7.126 During the Games, the Olympic Park will be served by 12 different rail services as set out in Figures 7.24 and 7.27. These services will be delivered by LU, the DLR, London Overground and providers of National Rail services.

7.127 Figure 7.26 shows the rail capacity to the Olympic Park on Day 7, the busiest day of the Olympic Games, during the morning peak.

7.128 National Rail services into the Olympic Park will be delivered by a variety of operators from a number of geographic areas. Figure 7.27 sets out the current operators and the areas their services cover. Figure 7.28 shows rail services to River Zone venues. Figures 7.29 and 7.30 show rail services to Central Zone venues and other venues.

7.129 The ODA is working closely with the DfT on the re-franchising of the Greater Anglia franchise to ensure delivery of Games-time services to/from Liverpool Street.

High-speed rail service

7.130 The proposal to run high-speed trains during the Games was first promoted in the 2005 'Straight to the Heart' report. The trains used to operate the service have been in revenue-earning operation on the High Speed Line between St. Pancras International, Stratford International and Kent since 2009.

7.131 The Javelin® service represents an important contribution (along with the other rail services) to the transport capacity at the Olympic Park. The ODA is working closely with Southeastern, the train operator, to develop the service proposal for the Javelin® which provides a fast, frequent service and works within the resource base of Southeastern in order to deliver a robust, reliable operation.

7.132 The service principles for the Olympic Games are:

- eight trains per hour in each direction from 07.00 to 22.00 (capacity of over 8,000 in each direction);
- up to 12 trains per hour in each direction from 22.00 to 02.00;
- two trains per hour between Stratford International and London St. Pancras International from 02.00 and 05.30 (capacity in excess of 2,000 per hour in each direction);
- capacity in excess of 1,000 spectators per train;
- most services to be operated in 12-car formation (2 x six-car trains);
- timetable developed to allow Eurostar to operate an enhanced service to Brussels and Paris at peak times during the Olympic Games;
- high-speed services to use all four platforms at Stratford International; and
- special queuing arrangements at St. Pancras International, Stratford International and Ebbsfleet International stations.

7.133 For the Paralympic Games, the normal Kent high-speed services will be supplemented with extra services with additional capacity provided, where possible, during the day and after 22.00. This will necessitate Southeastern operating at least 90 minutes later in the evening than their normal service.

7.134 In order to maximise the utility of this high-speed link for the dedicated Javelin® service, additional infrastructure work has been undertaken at Stratford International station. This work includes new access arrangements at the eastern end of the station, platform works to enable domestic trains to call at the international platforms and ultimately the provision of Games-time spectator circulating areas. To ensure smooth operation at this station, an Olympic Park Transport Integration Centre (OPTIC) has been established, which will control passenger and spectator movements to/from the station during the Games.

7.135 St. Pancras International station will be a key transport hub with four National Rail operators using the station; East Midlands Trains, First Capital Connect, Eurostar and the Southeastern high-speed services (Javelin® during the Olympic Games). The movement of spectators plus normal rail traffic will require temporary works to keep the station operation highly effective and the ODA will continue to work with all parties in order to deliver a safe and efficient operation.

7.136 Temporary infrastructure works will also be required to facilitate the flows of passengers at Ebbsfleet International station and again, most temporary works will relate to passenger queue management and transfer to other modes. Further work has also been undertaken to understand the Games-time demand and the queuing strategies needed at the three stations to ensure that high volumes of people can use the stations safely and efficiently.

7.137 Key to the delivery of the operational plans for the Javelin® service will be the continued close working of a number of stakeholders and delivery partners, including Southeastern, HS1, Eurostar and Network Rail. This group is working together to minimise the impact of temporary disruption to normal travellers wherever possible.

Figure 7.22 Background National Rail schemes

Scheme	Enhancement	Project completion date
Asset renewals	A range of asset renewals being carried out by Network Rail to improve the performance of the network.	Ongoing 2006–2012
High Speed 1 (HS1) phase 2	Completion of the HS1 link from Fawkham Junction to St. Pancras International, including new stations at Ebbsfleet and Stratford International.	Completed
West Coast mainline upgrade	Line speed improvements and increased capacity between London, the West Midlands, the north-west and Scotland.	Completed
East London Line extension phase 1	Conversion of the existing East London Line to national rail standards and extension north to Highbury & Islington and south to Crystal Palace and West Croydon, allowing the operation of high-frequency services. Infrastructure and new rolling stock funded by TfL.	Completed
North London Line capacity upgrade	Enhancement of the North London Line to a metro-style service. Re-signalling and upgrade to enable a metro-style service, tripling passenger capacity by Games time while increasing freight capacity. Joint TfL/ODA/Network Rail scheme with new rolling stock provided by TfL.	Completed
Thornton's Field relocation	A facility to replace the carriage sidings at Thornton's Field (near Stratford). ODA funded and delivered.	Completed
Signalling and platform works at Stratford station	Expanding platforms 11 and 12 to eight-car capacity so that longer services from Stansted Airport and other locations can access Stratford station. ODA funded.	December 2011
New high-level platforms at Stratford station	Two proposed new platforms for terminating North London Line services delivered by DLR as a replacement for the current low level platforms 1 and 2 used by North London Line passengers.	Completed
Enhanced signalling scheme at West Ham station	Signalling scheme to increase the number of trains that stop westbound in the peak period to eight trains per hour. Funded by Network Rail.	Completed autumn 2009
Station works at Stratford station	Capacity upgrade works. Funded by the ODA.	Completed end 2010
Signalling and platform works at Stratford station 10a	Extending platform 10a and associated signalling works to increase the number of Great Eastern mainline services that can stop at the platform during peak hours. Funded by the ODA.	Completed spring 2011
New freight loop at Stratford station	Provide capacity to stand a freight train within a new freight loop. The loop will include new track to the east of platform 10a. Funded by the ODA and Network Rail.	Completed spring 2011
Station works at Stratford International station	Temporary works including decking of the international platform to raise the level to meet that of the domestic platforms and temporary ramps to enhance station access capacity. A new exit has been added to the eastern end of the station from the domestic platforms. This additional facility was being jointly funded by the DfT, TfL, HS1 and the ODA.	Spring/Summer 2012 Eastern Egress complete

Scheme	Enhancement	Project completion date
London termini temporary station works	Temporary works to facilitate the increased flows of people using London termini during the period of the Games.	Spring/Summer 2012 on target

Figure 7.23 Games-time rail services to the Olympic Park

System	Line	Olympic Park recommended station
London Underground	Central Jubilee Hammersmith & City District	Stratford Stratford West Ham West Ham
Docklands Light Railway	Prince Regent – Stratford International Poplar – Stratford Lewisham – Stratford	West Ham, Stratford and Stratford International Stratford Stratford
London Overground	North London lines	Stratford
National Rail	Great Eastern Mainline Great Eastern Electric Lines North London Line Essex Thames-side Lea Valley Line High Speed 1 rail link (Javelin® service)	Stratford Stratford Stratford West Ham Stratford Stratford International

Figure 7.24
Olympic Park
Spectator Rail Services

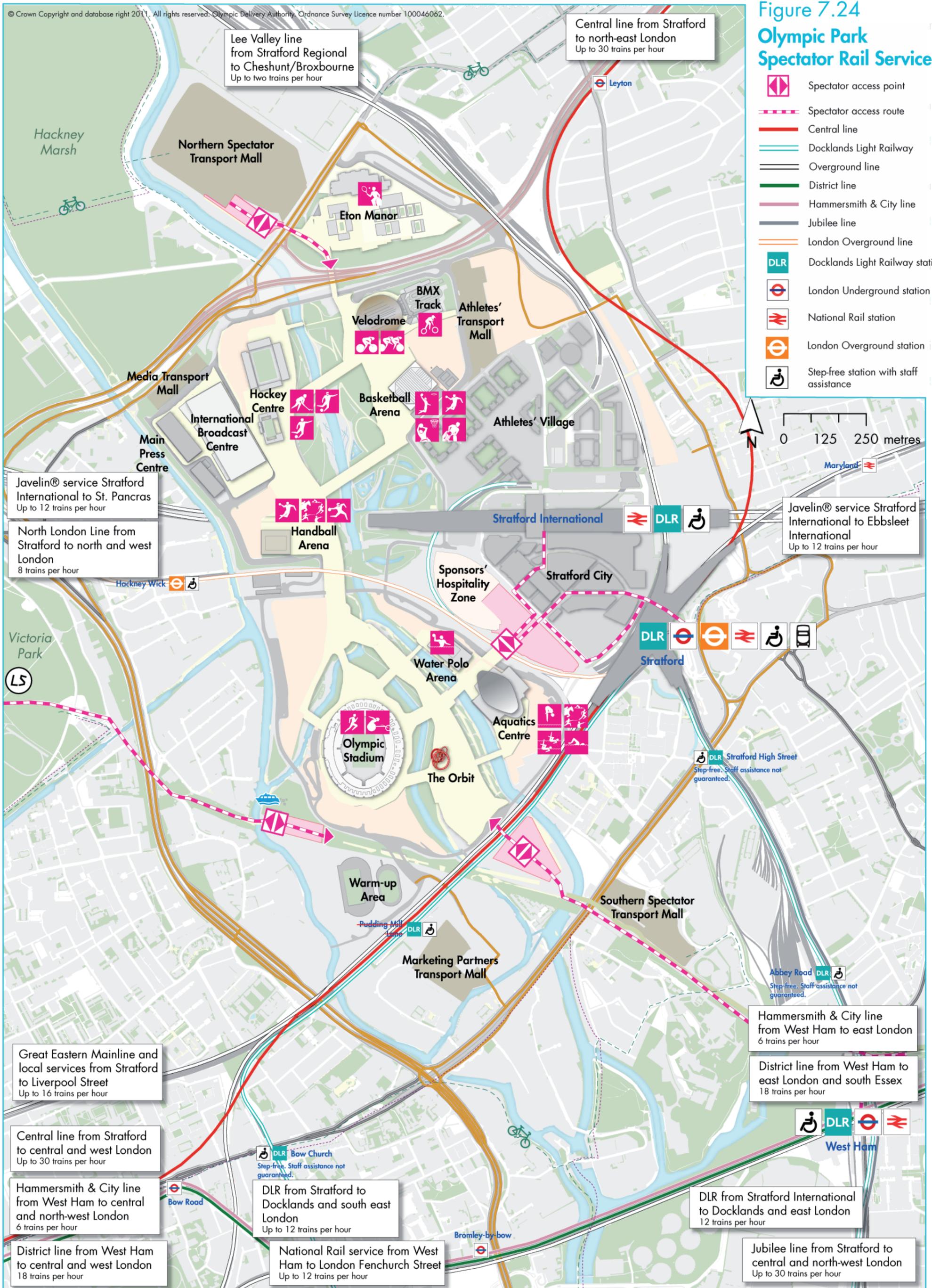


Figure 7.25 National Rail train operators serving the Olympic Park

Line	Operator	Area served
Great Eastern Mainline	Greater Anglia franchisee	Essex and East Anglia
Great Eastern Metro	Greater Anglia franchisee	East London and Essex
London Tilbury Southend	c2c	East London and south Essex
Lea Valley Line	Greater Anglia franchisee	North-east London and Hertfordshire
High Speed 1 (HS1) (for the Javelin® service)	Southeastern	Kent and central London

Figure 7.26 Stations directly serving River Zone venues station

Competition venue	Jubilee Line station	Docklands Light Railway stations	National Rail stations
ExCel		Custom House, Prince Regent	
North Greenwich Arena	North Greenwich		Charlton
Greenwich Park		Greenwich	Greenwich, Blackheath
The Royal Artillery Barracks		Woolwich Arsenal	Woolwich Arsenal

Figure 7.27 Services and stations directly serving Central Zone venues

Competition venue	London Underground services	London Underground station(s)	National Rail service(s)	National Rail station(s)
Earls Court	District, Piccadilly	Earls Court	London Overground, Southern	West Brompton
Horse Guards Parade/The Mall	Bakerloo, Northern, District, Circle and Jubilee	Charing Cross, Green Park, Piccadilly Circus, Victoria	Southeastern	Charing Cross, Victoria
Hyde Park	Central, Piccadilly	Green Park, Marble Arch, Hyde Park Corner, Knightsbridge, Paddington	First Great Western	Paddington, Victoria
Lord's Cricket Ground	Bakerloo, Jubilee	St John's Wood, Marylebone, Paddington	Chiltern, First Great Western	Marylebone, Paddington

Figure 7.28 Services and stations directly serving other venues

Competition Venue	Croydon Tramlink London Overground	London Underground service(s)	London Underground station(s)	National Rail service(s)	National Rail station(s)
Wembley Stadium/Wembley Arena	London Overground	Metropolitan, Jubilee, Bakerloo	Wembley Park, Wembley Central	Chiltern	Wembley Stadium, Wembley Central
Wimbledon	Tramlink	District	Wimbledon, Southfields	South West Trains	Wimbledon
Eton Dorney				South West Trains First Great Western	Windsor & Eton Riverside Windsor & Eton Central, Maidenhead, Slough
Lee Valley White Water Centre				Greater Anglia Franchisee	Cheshunt
Weymouth and Portland				South West Trains	Weymouth
Hadleigh Farm				c2c Greater Anglia Franchisee	Leigh-on-Sea

Information and wayfinding

7.138 Many of the customers at Games time may be new to the public transport systems. Operators want to take this opportunity to show public transport at its best – despite the pressures that the additional volume will bring. The customer experience will be driven as much by the information, signage and wayfinding as by the operational efficiency of the services. Customer information needs to contribute to the positive experience for ‘background’ users too – the normal transport information systems should be enhanced for the Games, not displaced or disrupted.

7.139 London 2012 is working with delivery partners and key stakeholders to ensure that there will be a coherent information and wayfinding approach from the home to a Games event and home again. A coherent ‘look’ to Games information is to be presented for whichever channel of communication is used and on whatever organisation’s territory.

7.140 This look should be consistent with the overall Games look and feel. The information and wayfinding will be consistent with travel demand management messages.

7.141 Games-time signage and wayfinding are temporary branded enhancements that are only relevant during the Games – the expectation is that the majority will need to be removed immediately after the Games.

7.142 In order to ensure a seamless journey experience for spectators entering and leaving the competition venues, significant planning has been undertaken. This is called the ‘Last Mile’ and is the pedestrian route used by spectators to travel between each London 2012 venue and the designated transport nodes (TfL/rail stations, park-and-ride, Blue Badge, etc).

7.143 London 2012 has developed an integrated approach to crowd management within the Last Mile, which is made up of the following components:

- Crowd and traffic stewards;
- Volunteers;
- Temporary event infrastructure;
- Communications technology;
- De-cluttering/physical alterations;
- Provision of crowd/traffic control room; and
- Wayfinding and signage.

7.144 All organisations (LOCOG, local authorities, land owners, TfL, Olympic Security Directorate (OSD), emergency services and others) will accept a responsibility for participating in collaborative planning of crowd management along the Last Mile. LOCOG will be the Last Mile crowd management planning coordinator for each venue, except where another organisation is better placed to provide this function. A Last Mile Planning Coordinator will sit within the City Operations team. LOCOG is also responsible for ensuring the delivery components of Last Mile Crowd Management (moving people safely along the Last Mile when there is no threat to life/public order situations) are in place at each venue. LOCOG will allocate this role to another organisation if they are better placed to do this. Last Mile planning now forms part of the venue operational planning process. Detailed planning will also take place within subsequent Venue Transport Working Groups.

ODA directly managed bus and coach services

Overview

7.145 For some, rail may not be the most convenient or practical choice of mode, so to provide a service for this group, a network of 2012 Games coach services is being provided by the ODA. The services will take ticket holders directly to the Olympic Park, Ebbsfleet, ExCeL, Greenwich Park (Day 3) and Weymouth and Portland venues. This service network has been devised by the ODA and is based on likely demand, both geographically and on an event basis, and also takes into account other factors such as journey times, cost and convenience.

7.146 Additionally, buses and coaches will also provide an important support function at some competition venues, providing park-and-ride services locally, and also shuttle services to connect nearby rail stations to the venue entrance.

7.147 In 2010, the ODA awarded a contract to First Group plc to manage and operate bus and coach services for the Games either through its own resources or through carefully selected sub-contractor operators. Private operators are expected to continue to operate their own networks.

7.148 For many disabled spectators, a direct coach route will be the easiest journey to a Games venue. The ODA is working closely with First Group to create both an accessible booking service and operation. There will also be a training programme for staff involved in the project.

7.149 Direct coach services can be characterised by two principal types of operation:

- 2012 Games coach services designed for individual travellers; and
- private charter and 'ad hoc' operations more typically for pre-arranged groups.

2012 Games coach services

7.150 2012 Games coach services will be used by individual travellers who will book and reserve seats on services from a variety of origin points and travel directly to the venue.

7.151 The origin points have been carefully planned to allow as many spectators as possible to access the service based on expected demand. Even where there is no origin point locally, each one is easily reached from a wide area nearby. All routes are also planned in a 'linear' way, to allow for duplicated services where there is demand, and to enable consolidation of origin points.

7.152 The services are planned for those travelling to events on a day return and the ticketing structure will offer concessions to ensure the services are attractive to spectators.

Figure 7.29
2012 Games coach service network

-  Javelin® service
-  2012 Games coach service to the Olympic Park, ExCel and Greenwich Park*
-  2012 Games coach service to Weymouth and Portland
-  2012 Games coach service to Ebbsfleet International for Javelin® services to the Olympic Park
-  London venue served by 2012 Games coach services
-  Weymouth & Portland venue
-  Ebbsfleet International station (for Javelin® services to the Olympic Park)



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*Coaches will directly serve Greenwich Park on 30 July 2012 only

7.153 Services will be pre-booked to enable efficient operation and to maximise use of vehicles. This will be through a bespoke web-based booking and ticketing system, which will link to the operational planning processes to determine the levels of service and vehicle utilisation. The ODA will work closely with the appointed contractors to develop the operations, the network designs and the passenger management once demand data is refined.

Private charter and other operations

7.154 Although the network services will effectively service the demand for individual seats, some of the demand for coach travel will emerge from groups that wish to travel together, for example, sports clubs or local interest groups. Operators may wish to offer advertised tours or excursions or integrate a visit to the Games as part of a broader tourist itinerary.

7.155 The ODA will support these operations by facilitating the use of the spectator transport malls and associated infrastructure. To ensure efficient management at all venues, a permit system will be in force to enable operators to pre-book arrival and departure slots at the malls, both to give the spectator a better experience and also to manage the demand for space.

7.156 It is anticipated that this type of service will be an attractive option for those arriving from northern Europe, in addition to passengers from the UK. The ODA will be working closely with operator groups to ensure operators in Europe are well-placed to maximise the opportunities available.

7.157 As part of the ODA's management function for handling private charter coaches, parking facilities will be available at most competition venues for daytime or (in some cases) overnight layovers, on a pre-booked permit basis. Some of the facilities will include provision for driver welfare, vehicle maintenance and cleaning.

7.158 The permits will be booked online using an 'operator only' part of the booking website and information will be disseminated to vehicle operators through the period leading up to the Games, using trade associations and trade media.

Park-and-ride to the Olympic Park

7.159 The ODA recognises that, even with a comprehensive rail network and additional coach services, there will still be some spectators who will find it difficult to make their entire journey to and from the Games by public transport. As another alternative, a number of park-and-ride sites are planned to provide a facility for those travelling into the Olympic Park from the North, north-west and north-east London, and the South East of the UK.

7.160 The sites currently identified are at Redbourn in Hertfordshire, at the Lakeside and Bluewater shopping centres and at Ebbsfleet International station. These sites have been carefully chosen, taking into account a wide range of factors, including expected demand on the local road network, the availability of spaces and the cost effectiveness of the infrastructure and the work required.

7.161 Car parking spaces will be provided at a modest cost with coaches or buses operating regular shuttle services taking spectators directly from Redbourn or Lakeside to the Olympic Park. There will be accessible parking spaces provided at all park-and-ride sites. Suitable coach and shuttle bus services will be available to take disabled spectators to Games venues.

7.162 From Bluewater, a bus shuttle service will transfer spectators to the Javelin® service at Ebbsfleet International.

7.163 The ODA is working closely with the landowners of the sites and the relevant local highways authorities to ensure smooth operation of the sites and services, particularly at peak arrival and departure times.

Local venue park-and-ride sites

7.164 At some venues outside the Olympic Park and particularly outside London, the use of public transport directly to the venue is more challenging. However, to encourage as much of the journey to be made by public transport as possible, local park-and-ride services will be provided. This will be an integrated and inclusive service with accessible parking spaces available for disabled spectators.

7.165 The locations of the park-and-ride sites for each venue are still being planned and are subject to further work on seeking agreements with landowners.

7.166 The park-and-ride sites are managed on behalf of the ODA by Mott Macdonald in association with Event Guard, which is experienced in all aspects of large-scale customer event management.

Venue shuttle services

7.167 In addition to the above, where public transport cannot serve the venue directly, bus shuttles will be provided to connect the nearest rail or public transport hub with the venue.

7.168 Buses may also be used to relieve demand or congestion on other modes at certain venues, such as ExCeL.

7.169 These services will be provided by the ODA as part of the spectator management process and are identified within each individual venue transport plan.

7.170 Due to constraints around the location of some venues, there may be a further need to provide additional parking sites for disabled spectators that require a shuttle service. Accessible vehicles will be provided to run shuttle services from these sites and from some recommended venue stations to venues.

7.171 The ODA is working with existing shuttle bus service providers to deliver high-quality accessible travel to Games events. These transport operators have expertise in accessible transport provision, including high standards of customer service and driver training.

7.172 The ODA will continue to work with LOCOG's venue teams and local authorities to ensure that adequate drop-off and pick-up facilities for accessible transport vehicles are provided as close as possible to each competition venue.

7.173 Shuttle services may include the use of accessible buses, coaches and golf buggies.

Management of bus and coach services

7.174 All of the ODA organised bus and coach services will be coordinated by the Bus and Coach Control Centre which will be located at the bus operations centre in Barking and will interface with the Transport Coordination Centre (TCC). Regional managers will take 'on the ground' responsibility for operations at the venues and park-and-ride sites.

7.175 ODA-managed bus and coach services to the Olympic Park will take spectators to the transport malls at the northern and southern spectator entrances. In addition, private coaches will be provided with pick-up and drop-off areas in each mall, managed by the pre-booked, web-based permit booking system. The malls have been designed to operate effectively given the local road network and the likely levels of operation. There will be some limited facilities for spectators during their time in the malls.

7.176 The park-and-ride shuttle services for individual venues are shown on the maps in chapter 8.

Enhanced local bus services

7.177 Existing local bus services will also be enhanced where appropriate. Within London, London Buses (TfL) will deliver these enhancements. For venues outside London, the ODA will work with the relevant local transport authorities and local operators to ensure a solution appropriate to meet local spectator needs.

Bus strategy

7.178 TfL is responsible for planning and securing the local bus network within the Greater London area, through the provision of service contracts with bus operators who deliver services according to its specification. The network is comprehensive and operates 24 hours a day on many major routes. This makes it far more extensive at certain times of day than networks provided by other modes. The use of TfL buses during the Games will not generally be for the use of mass movement of spectators, as this function is to be performed largely by rail. However, buses will be a significant local facility, including for those working at and around Games venues. TfL buses are included with the Games Travelcard during the Games for spectators and, where applicable, Games Family. Additionally, the operation of every venue will have an impact on local bus operations.

7.179 The UK bus industry has made many accessibility improvements in recent times. The entire fleet within London has low-floors and are all fitted with ramps. The iBus system, with automatic passenger information displays and announcements, makes it easier for everyone to use London's buses, but especially those with visual impairments and those who are not very familiar with the city or its bus routes.

7.180 The ODA has worked very closely with its colleagues in TfL London Buses to plan appropriate enhancements of bus services. This approach of augmenting the already comprehensive network in London is intended to maximise the usefulness of the whole bus network for passengers by ensuring that the planning and provision of additional services is integrated into the wider process of London Buses operations.

7.181 Some adjustment to bus service alignments caused by Games-time operation is necessary. The bus strategy developed with TfL focuses on maintaining the bus network, adjusting it to fit the Games-time need. The core objective has been to create a network that works while identifying the sections which could benefit from additional capacity over and above the existing provision.

Taxis and private hire vehicles

7.182 Taxis (black cab) and private hire vehicles will be required during the Games where individuals require a level of flexibility not offered by public transport modes. In particular, taxis provide an accessible travel alternative for those with special needs and impairments.

7.183 Taxi and private hire forms an important mode of transport. In London, some 162 million trips are made by taxi and private hire each year. London has 23,500 licensed taxi vehicles, all of which are wheelchair accessible. In addition, there are 50,000 licensed private hire vehicles. Taxi and private hire vehicles and drivers in London are licensed by TfL – Taxi & Private Hire Directorate. In London, approximately 8,000 taxi drivers work through a Radio Circuit, these are; Radio Taxis, ComCab and Dial-a-Cab. These operators mainly provide a pre-booked and corporate service. However, the drivers are still free to ply for hire and work independently. All taxi drivers in London have to complete the TfL Knowledge – a detailed test of the road network and points of interest. There are two types of TfL taxi driver licence, namely the Green Badge which allows drivers to work anywhere in Greater London, and the Yellow Badge where the driver is restricted to pick-ups in a suburban area of London only.

7.184 Outside of London, there are over 150,000 taxis and private hire vehicles licensed by the local authorities. Licensing requirements can vary from one authority to another. In some authorities there is no mandatory requirement for taxis to be wheelchair accessible and the types of vehicles do vary from one authority to another.

7.185 The Olympic Games will take place during late July and August, which is traditionally a quieter period for the taxi and private hire industry, but they will create an increase in demand for travel by taxi and private hire. The Paralympic Games will take place in late August and September, which is busier due to school and social contract work with a higher need for accessible transport. The Paralympic Games will further increase demand.

7.186 It is expected that there will be a requirement for taxis and private hire travel during the Games to make various types of trips. These will include airport transfers, journeys between public transport and accommodation, plus venues, cultural events and sightseeing tours.

7.187 Since the first edition of the Transport Plan, the ODA has established a taxi and private hire transport strategy group with stakeholders from the taxi and private hire industry. This group facilitates clear communication between operators, trade associations and other stakeholders such as TfL, local authorities and the ODA.

7.188 Work has been undertaken to establish the likely demand for taxi and private hire travel to the individual Games venues, and public transport links such as the rail interchanges. The ODA is working closely with its delivery partners and stakeholders to identify and plan for the role of taxis and private hire during the Games.

7.189 Working with stakeholders, the ODA will ensure that latest good practice guidance for the integration of taxi ranks and pre-booked taxi and private hire vehicles (PHVs) is used when designing venue transport infrastructure. While TfL leads on taxi facilities at rail interchanges in London, the ODA is liaising with TfL to ensure that the requirements for the Games are taken into account.

7.190 It is envisaged that taxi and pre-booked taxi and private hire will be able to pick up and drop off at specific zones at all of the Games venues. There will also be facilities at most public transport interchanges.

7.191 The ODA is investigating the potential for taxi share schemes at some venues and designated public transport locations; as used already at some locations such as the Wimbledon Tennis Championships and Paddington station. The precise details are currently under review, but ODA will work with stakeholders to maximise the opportunities available.

7.192 The ODA will ensure that adequate Games information is provided to taxi and private hire drivers and the operators. This information will relate to, for example, the venues, event scheduling, expected demand, location of ranks and other pick-up/drop-off points. In addition, the ODA is working with the industry on ways to communicate to drivers and operators during the Games, with information such as changes to event finishing times, unscheduled road closures, congestion, hot spots and emergencies.

7.193 Security and safety will be essential during the Games, and to also make sure that only authorised licensed taxi and private hire drivers are transporting spectators. The ODA is working with security, the police forces and licensing enforcement officers for each of the venues on this matter. In addition, the ODA will make information on the safe use of taxi and private hire available to all spectators.

7.194 The taxi emissions strategy was introduced in London by TfL to improve air quality in the city. Since July 2008, all London's taxis have been required to meet 'Euro III' emissions standards as a minimum.

7.195 Under current traffic legislation, taxis are permitted to use the bus lanes. It is proposed that taxi and private hire vehicles will not be permitted to enter or use the Games Lanes. Games Lanes are for accredited vehicles and emergency vehicles responding to an emergency.

7.196 Throughout the development of the Transport Plan, consideration is being given by the ODA to accessibility, ensuring that there are adequate accessible taxis and private hire vehicles for all Games venues and designated pick-up and drop-off locations.

Caravans and motorhomes

7.197 The use of caravans and motorhomes as a method of combined travel and accommodation is commonplace for major sporting events. The ODA has initiated plans to deal with this demand as it is likely that this will be a popular choice for many spectators, in particular from Europe where motorhome and caravan ownership is high.

7.198 Consultations and discussions have been held with the leading industry bodies, which plan to operate campsites near venues, to establish the level of demand and fully understand their transport needs.

7.199 The ODA is working alongside these operators to assist with the planning and coordination of services. This will include ensuring that additional demands on public transport are understood and catered for.

Waterborne transport

7.200 While waterborne transport will play a relatively small role in enabling spectators to access the relevant competition venues, it is an attractive travel option and the ODA is keen to maximise its usage within the overall available capacity of boats, piers and waterways.

River Thames passenger transport

7.201 The River Thames has a well developed network of existing passenger services that carries more than five million passengers a year by boat. Thames River services can be separated into two main areas of operation:

- scheduled services for both leisure and commuting purposes; and
- chartered services.

7.202 Scheduled passenger services will provide the main form of waterborne transport for spectators travelling on the Thames during the Games. Scheduled passenger services will offer an attractive and leisurely journey option for Games spectators travelling to River Zone competition venues.

7.203 Private charter services are unlikely to play any role for spectator transport to competition venues, but will be utilised by some Games Family client groups and other non-accredited groups for leisure and hospitality trips.

Games river services

7.204 Competition venues in London that will be served by river services are primarily those in the River Zone:

- Greenwich Park (Greenwich Pier)
- North Greenwich Arena (North Greenwich Pier)
- The Royal Artillery Barracks (Woolwich Pier)

7.205 In addition to the River Zone venues, some of the central London venues, such as Horse Guards Parade, The Mall and other non competition venues, are served by river transport via the central London piers. It is also possible that spectator journeys to the Olympic Park could be made by river via the Canary Wharf Pier with a connecting public transport journey. However, the interchange and additional time required is likely to make this option unattractive.

7.206 Demand forecasting work has been undertaken by the ODA to provide an understanding of the numbers of spectators likely to use Thames river services. The demand forecasting work indicates that there will be spectator demand for river passenger services within the overall low levels of capacity available on the river, particularly Maritime Greenwich and Greenwich Peninsula (for Greenwich Park and North Greenwich Arena). These river services will play an important role in spectator transport plans, particularly on busy days at these venues.

7.207 The numbers of additional spectators forecast to use river services varies from day to day, based on spectator numbers at River Zone competition venues for different events and days. Forecasting work indicates that an average 6,000 daily additional river passenger trips will be made by spectators travelling to and from competition venues in the Borough of Greenwich.

7.208 The existing network of scheduled river services will form the basis for meeting Games demand, with some temporary service enhancements.

7.209 Despite the fact that the Games coincide with the Thames river industry's busiest period, competition event session times are, in most cases, different to the peak times for background river travel demand. This means there is some capacity on the existing scheduled passenger services for Games spectators, but that some additional river capacity is required at certain times.

7.210 The ODA has recently completed a feasibility study to look at the accessibility of key piers within London. Eight piers were identified due to their proximity to venues or transport interchange locations. The feasibility study considered walking routes to and from piers, access onto the river boats, tidal impacts on pier gradients and a 'mystery shopper' exercise to consider customer service. From these findings, four piers have been identified for further discussion with delivery partners to make accessibility improvements.

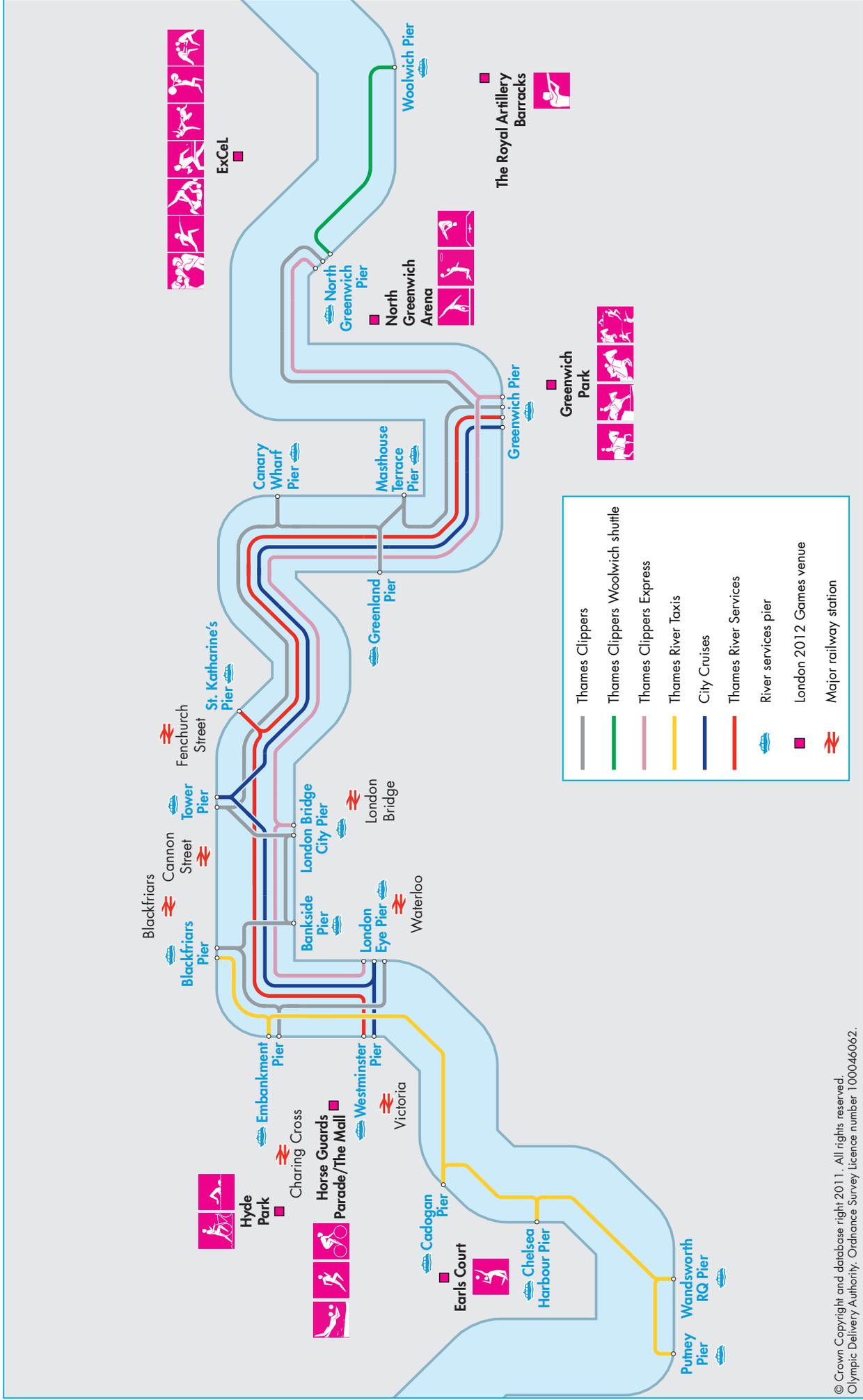
River bus services

7.211 In addition to the existing commuter stopping service, Thames Clippers will also operate an express service from Waterloo (London Eye Pier) to Greenwich Park and North Greenwich Arena, with an intermediary stop at London Bridge. This express service will be in operation for every session arrival and departure at the North Greenwich Arena and Greenwich Park for both the Olympic Games and Paralympic Games.

River tour services

7.212 Existing scheduled river tour services to Greenwich, operated by City Cruises and Thames River Services, will be enhanced for the duration of the Olympic and Paralympic Games. This will involve both these operators running a frequent and coordinated timetable leaving for Greenwich from Waterloo and Westminster Piers with a stop at either Tower or St. Katharine's Pier. This combined timetable will run earlier in the morning and later into the evening on selected days during the Olympic and Paralympic Games to meet the additional Games demand. Tickets bought for use on the river tour services to Greenwich will be available for use on either operator's service.

Figure 7.30
Proposed Games River Services and Pier Locations



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Ticketing

7.213 Tickets for the various river services outlined above will be available online through the operator's online ticket booking system. Links to these sites will be provided from the London 2012 website and spectator journey planner.

Travel information

7.214 River service information for spectators will be available through the London 2012 website including details on the nature of the services and their key features, venues served, timetables and key pier information. Information about the extent to which services and piers are accessible will also be provided. River services may be particularly attractive to people with restricted mobility, as piers and river services are generally step-free.

Stakeholder engagement

7.215 The ODA will continue to work through the Mayor's River Passenger Services Concordat Working Group, and specifically the London 2012 Olympic River Services Sub-Group with key river operators, TfL's London River Services (LRS) and the Port of London Authority (PLA).

7.216 The Olympic and Paralympic Games offer the opportunity to leave a positive legacy by helping to raise the profile of the Thames as a transport and leisure resource. This will include ensuring that river services are fully promoted as part of the Games travel information portfolio.

Pier infrastructure and management

7.217 London has an extensive network of river piers. With the exception of ExCeL, which is not directly served by a scheduled river service, all the other River Zone venues are served by existing piers. Central London is also well served by piers.

7.218 In conjunction with LRS, and through utilising the Piers Action Plan undertaken for the Concordat Working Group, the ODA has reviewed where some capacity or other enhancements may be required on existing piers to support requirements during the Games. The conclusion of this work is that the ODA is making a financial contribution to the capacity enhancement of Tower Pier and improvements to Greenwich Pier.

7.219 There will also be a requirement for an enhanced level of operational management on some of the busier piers during the Games. This is particularly relevant to Greenwich Pier, which is likely to be very busy as spectators leave events. In the case of Greenwich Pier, LRS and operators are reviewing whether any additional measures need to be in place on board the piers to ensure passengers can alight and board safely. There is also a requirement to consider any required queue management arrangements off the pier at Greenwich. Pier management measures and river operations during the Games will continue to be the responsibility of incumbent operators. River services can play a limited contingency role if required, and communication links between operators and the CentreComm desk at TCC, which represents LRS, will be in place.

7.220 The temporary increments in service and management capacity and command and control during the Games set out above will be undertaken through enhancing existing day-to-day operating procedures and interfaces.

7.221 The role of the ODA in delivering river operations during the Games is limited. It will mainly be focused on operational assurance and providing a strategic monitoring and review function as set out below. The ODA will not be involved in the day-to-day operation of river service operations.

Canals and other waterways

7.222 A Limehouse to Olympic Park operator has been appointed to run a service under contract to British Waterways.

7.223 British Waterways has principal responsibility for the canals and waterways in the vicinity of the Olympic Park. The Limehouse to Olympic Park canal service would not make a large contribution to the movement of spectators to the Olympic Park and cannot be considered a mass form of transport. It is likely that its usage may be equally attractive for leisure and sightseeing purposes, in addition to being a form of transport. The service does, however, offer an attractive form of transport as part of a London 2012 day out experience.

Cruise ships

7.224 Cruise ship facilities currently exist on the Thames at Greenwich, and in the Pool of London, adjacent to HMS Belfast. Bookings have been taken for both these mooring facilities for the duration of the Games.

7.225 The London Cruise Terminal at Tilbury also offers mooring for cruise ships and the Port of Tilbury is reviewing the potential for converting some of the space normally used for commercial shipping to passenger operations during the Games. It is understood that around six berths could be made available for cruise ships during the Games.

7.226 It is also understood that some smaller cruise ships will also be moored in the Royal Docks for the Olympic and Paralympic Games.

7.227 Once through immigration and customs controls, cruise ship passengers can use a range of public transport and walking options to reach Games venues.

Planning for the cumulative effect of waterborne activities on the Thames during London 2012

7.228 In addition to increases in scheduled river transport, charter transport and cruise ships on the Thames during the Games, there is also likely to be demand for other forms of private transport and potentially cultural or ceremonial events on the Thames. The ODA will continue to work with LOCOG, TfL, PLA, GLA and other relevant bodies to ensure that river transport for spectators can continue to operate effectively and reliably for the period of the Olympic and Paralympic Games.

Waterborne transport outside London

Eton Dorney

7.229 The ODA has developed initial plans in conjunction with an existing operator of Thames river services in the Windsor area for the operation of a Games service between Windsor and the Eton Dorney venue. This service would not be under contract to the ODA, but would provide a relatively low-volume service to the venue, and offer an attractive experience. Information about the service would be provided for spectators travelling to the Eton Dorney venue.

Walking and cycling

7.230 Sustainability is a key part of the transport strategy. Walking and cycling play a major role in this respect as low-carbon modes for spectators, workforce and some Games Family trips to Games venues. They also make significant contributions to a number of the London 2012's sustainability objectives, including tackling climate change, and promoting inclusion and health and well-being.

7.231 In addition, walking and cycling are practical, enjoyable and reliable ways for spectators to access Games competition and other venues. These modes have a role in helping to relieve pressure on other public transport systems during the Games. In addition to trips made all the way to a venue by bike or on foot, a large number of spectator trips will include walking, and to a lesser extent cycling, when combined with rail or other modes, for a part of their journey to the venue.

7.232 The Games present an excellent opportunity to build on the ongoing work by TfL, local authorities and other groups to further develop walking and cycling, and to leave a legacy benefit both in London and the rest of the UK.

7.233 The existing network of promoted cycle routes included in the London Cycle Guide that serves the Olympic Park and River Zone venues is shown in Figure 7.31. The London strategic walking routes serving the Olympic Park and River Zone venues are shown in Figure 7.32. These routes and others will be promoted to spectators attending Games competition events.

Approach to planning for walking and cycling

7.234 Planning for walking and cycling infrastructure and spectator operations for the Games is an ODA responsibility, with TfL playing a major role as delivery partner, and with significant local delivery roles from local authorities and walking and cycling groups. Two groups have been set up to assist with the planning, delivery and scrutiny of Games walking and cycling plans. These are the London 2012 Active Travel Advisory Group (ATAG) and the Olympic Cycling and Walking Route Enhancements delivery partner group.

7.235 It is important to note that although walking and cycling is set out jointly in this chapter, the ODA recognises that they are very different and unique forms of transport, requiring different approaches.

7.236 The key principles used in planning for walking and cycling for London 2012 are:

- Legacy: ensuring that a legacy of local and strategic cycle and walking routes and associated infrastructure remains after the Games.
- Integration of programmes and modes.
- ‘Hard’ and ‘soft’ measures: hard measures focus on physical infrastructure such as new and upgraded routes, secure cycle parking, and signs and wayfinding systems; soft measures include a programme of awareness-raising initiatives promoted under the Active Travel Programme.
- Cooperation and coordination: ensuring a range of stakeholders continue to be engaged in the planning and delivery of walking and cycling activity for London 2012.

7.237 As part of previous demand forecasting work, analysis was undertaken of the ability of existing and planned future infrastructure around venues such as the Olympic Park to cope with predicted levels of Games demand. This work revealed that broadly, once the infrastructure enhancements being delivered through the London 2012 programme are in place (described in more detail below), the network is able to cope with the forecast numbers of additional walkers and cyclists. There are, however, a number of ‘hotspots’ on routes around venues that will require enhanced management during the Games as part of walking and cycling operational arrangements. See chapter 8 on venues for a more detailed overview of venue arrangements.

Routes and infrastructure

7.238 The ODA is funding a programme of new and improved walking and cycling route schemes focused on the Olympic Park and River Zone venues in London. There will also be some improvement of routes at competition venues outside London. TfL is leading on programme management for the delivery of the Olympic Walking and Cycling Route Enhancements programme (OWCRE) on behalf of the ODA. Local authorities and other delivery partners are delivering approximately 120 schemes that comprise OCWRE. A plan showing the routes being improved under the OCWRE is shown in Figure 7.33. These routes are known as London 2012 Cycling and Walking Greenways.

7.239 It is important to note that the approach to OWCRE is not to deliver a comprehensive upgrade along the whole length of these routes, but rather at specific, priority locations where barriers currently exist to cycling or walking. Scheme enhancements included within the OWCRE programme include improved access points onto routes, surface treatments, pedestrian and cyclist crossing facilities and footway relaying. Permanent, and some temporary, wayfinding and signage enhancements along the length of the London 2012 Greenways will also be delivered. Different base types of signage systems are being used for the London 2012 Greenways, based on the different environments, including both on and off road areas, that the routes pass through. The main base signage systems to be used on OWCRE routes will be the DfT’s Traffic Signs Regulation Guidance Direction (TSRGD) and Legible London, which is a system of maps and signs for pedestrians.

7.240 The ODA is also working with relevant local authorities and other stakeholders to help fund and deliver walking and cycle route enhancements in the vicinity of venues outside London, such as Eton Dorney, Weymouth and Portland, Hadleigh Farm and Lee Valley White Water Centre.

Walking and cycling operations

7.241 Certain operational and promotional measures will be in place during the Games to enable and encourage spectators and workforce to walk and cycle to competition venues. It will be ‘business as unusual’ in London and around other UK venues during the Games and this will have implications for how pedestrians and cyclists access venues. Some existing cycle or walk routes into and within venues may be temporarily unavailable, due to specific venue security or other temporary requirements.

Figure 7.31
London Cycle Guide routes to
the Olympic Park and River
Zone

-  Route on quieter roads recommended for cyclists
-  Route signed for cyclists separate from traffic. Usually shared with pedestrians
-  Route signed for cyclists through park or beside canal or river. Usually shared with pedestrians
-  Pedestrian link that avoids traffic
-  Route signed for cyclists. May be on busy road
-  Competition venue

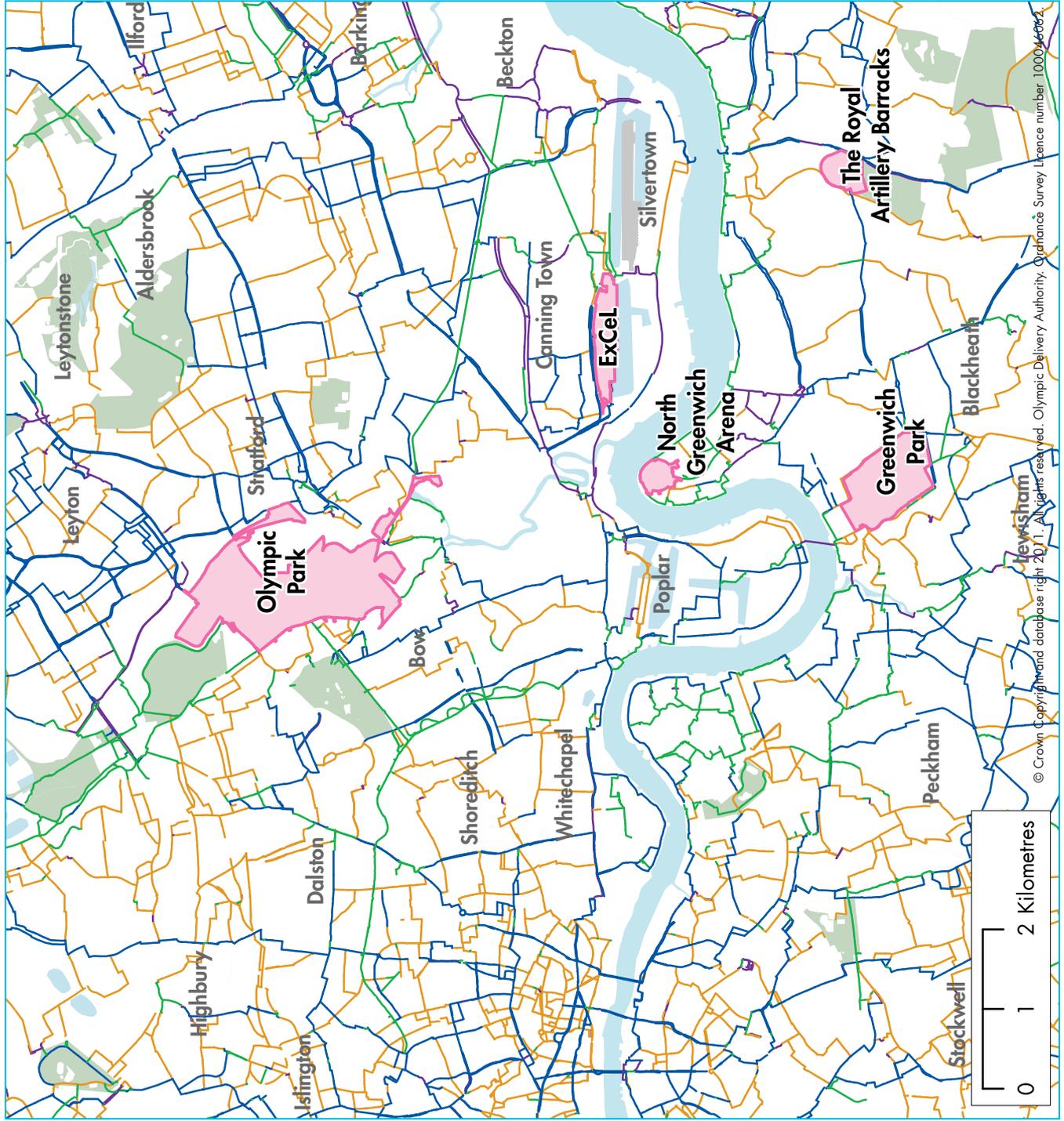
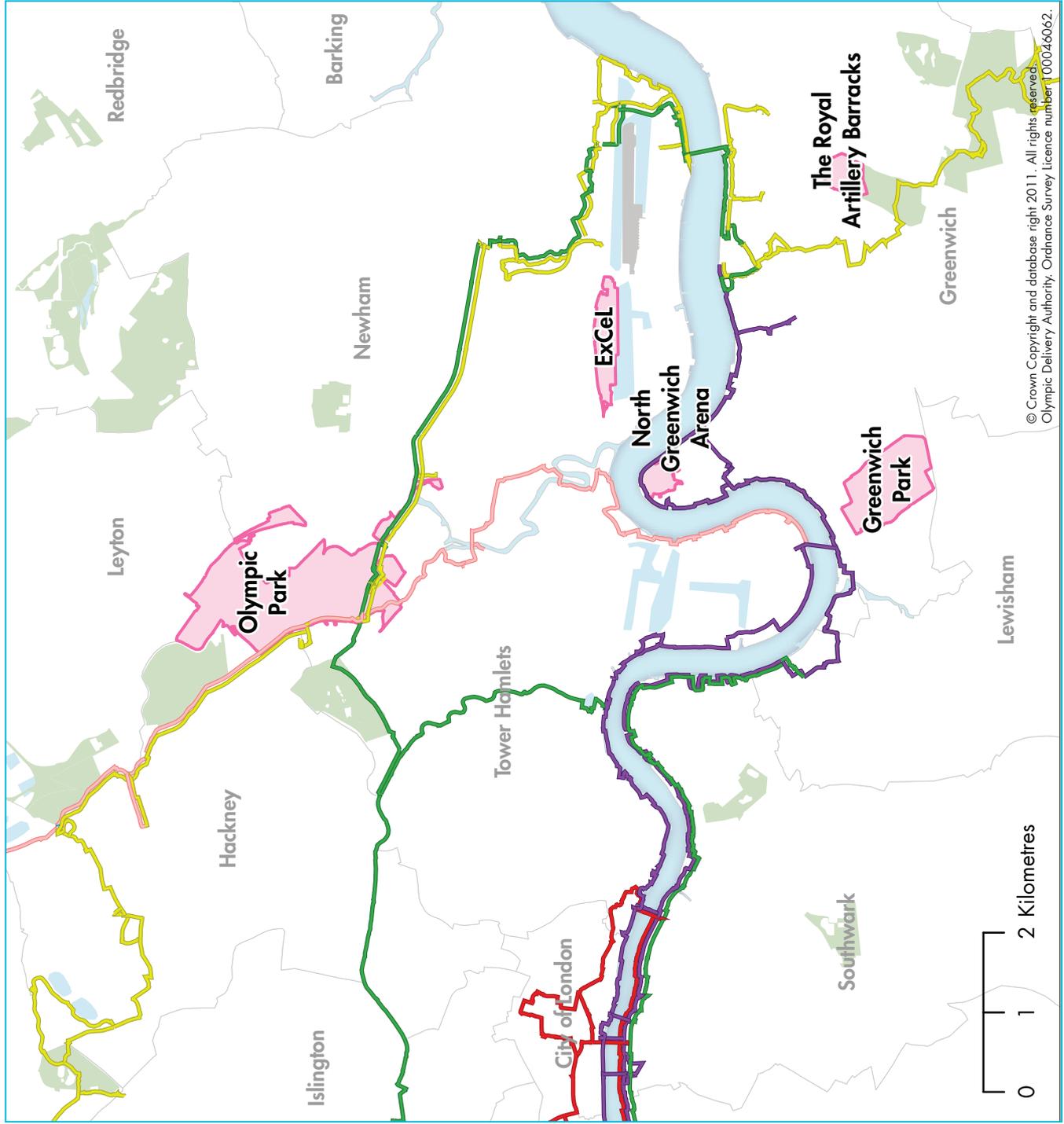


Figure 7.32
London strategic walking routes

-  Competition venue
-  Jubilee Greenway
-  Capital Ring Road
-  Thames Path
-  Lea Valley Walk
-  Jubilee Walkway



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Travel information

7.242 Spectators will be able to plan their journey through the London 2012 website (london2012.com/travel), which will include walking and cycling travel information. This will include both larger scale printable maps showing walking and cycle routes into venues, as well as more detailed printable maps enabling people to plan their detailed access arrangements at the venue end of their journey.

Venue operations

Overview

7.243 Around the majority of venues, a complex set of temporary transport, access, security and crowd management operations (referred to as 'overlay') will be in place, that in most cases will mean a change to the way in which a pedestrian or cyclist might normally access that location.

Cycle routes

7.244 A wide range of on- and off-road cycle routes will be promoted for access to all the London 2012 competition venues. Within London, the most up-to-date London Cycle Guide routes will form the basis of the promoted network. The London 2012 Greenways plan will also play a key role for access to the Olympic Park and a number of the River Zone venues. Within London, Thames river crossings for cyclists in east London, including the Greenwich and Woolwich foot tunnels (their use will be subject to existing local regulations) and river transport services will be promoted. Outside London, specific cycle routes have been identified and will be shown on the relevant maps.

Cycle parking

7.245 Each London 2012 competition venue will include secure temporary cycle parking. In determining the most appropriate locations for venue cycle parking, the ODA has worked through the various venue overlay requirements identified in the sections above. As a general principle, the objective has been to locate cycle parking as close as possible to the venue pedestrian entrance, in a safe and accessible location.

Walking routes

7.246 It is expected that some spectators will walk all the way to competition venues from their homes and temporary accommodation, or the final leg into a venue from other modes of transport. 'Walk all the way' journeys are anticipated to account for a small overall proportion of spectator journeys into venues. However, this means of access will be popular with local residents around venues who have secured event tickets. Local walk access routes into venues for local residents have been identified for all venues, with further information available in chapter 8.

7.247 Some existing pedestrian access routes into venues will be unavailable for local access or security reasons. Longer distance walking routes to venues provide the opportunity for spectators to experience other on-route attractions, including natural environments and visitor attractions as part of a London 2012 day out.

7.248 There are already a number of branded longer distance walking routes both within and outside London that connect or pass close to venues that can be promoted as part of the walking options for spectators.

7.249 Other higher volume walk access routes from stations and other transport hubs into venue entrances have been identified and can be seen in chapter 8. Many of these routes will see high volumes of pedestrian flows, often bi-directional, and will be subject to specific crowd management and safety measures. At a number of venues, temporary or permanent access infrastructure measures, such as bridge crossings, are being used to ensure large volumes of pedestrians can access venues safely and efficiently.

Route management into venues

7.250 Certain walk and cycle access routes to venues will require temporary management measures. This will include the use of route marshalls, queue and crowd management systems, safety barriers and the provision of journey information.

Temporary wayfinding and signage for Games operations

7.251 As described earlier, the OWCRE project includes the provision of permanent, and some temporary, wayfinding on the London 2012 Greenway routes. In addition to the wayfinding and signage on these routes, there will also be additional temporary pedestrian and, in key locations, cycle signage in place on the approach to competition venues.

Integration and coordination

Cycle hire

7.252 Cycle hire in London will be promoted to businesses through the Travel Advice to Business programme and is likely to play an important role in helping commuters get around London during the Games. Cycle hire will not be promoted to spectators as demand for bicycles is likely to exceed supply and the increased number of people in London is likely to make the redistribution of bicycles more difficult. It may be necessary to remove some docking stations close to venues during the Games for operational reasons.

Bikes on trains

7.253 Trains operating to the key venue stations during the arrival and departure periods will, for the majority of the time, be extremely busy. National Rail operates conditions of carriage for cycles on trains which will continue to be in place during the Games. In addition, some train operating companies operate restrictions on the carriage of bikes at certain times, which will also continue to be in place during the Games. Spectators will be advised to review the National Rail and operator guidance before considering taking a bike on a train to a competition venue. Cycle parking is available at the majority of venue stations.

Active travel programme

7.254 The active travel programme seeks to capture and build on the opportunity that London 2012 presents to inspire more people to choose active travel. Walking and cycling are easy, cheap and fun ways to get about. As nearly three-quarters of all journeys in the UK are less than five miles, there is huge potential for positive and lasting change.

7.255 Several organisations, including the ODA, LOCOG, TfL and other stakeholders, are involved in the delivery of different parts of the Active Travel Programme, which has three distinct phases: pre-Games, during the Games and legacy.

7.256 During the build-up to the Games, the programme brings together walking and cycling events, promotions and activities, using London 2012 as a catalyst to super-charge 'business as usual' projects.

7.257 During the Games, efforts will focus on encouraging spectators and workforce to walk or cycle to the Games venues, working towards fulfilling London 2012's aim for 100 per cent of spectators travelling to the Games by public transport, foot or cycle. Work is underway to ensure those that choose active travel have a positive experience and are therefore more predisposed to walk and cycle after the Games. Active travel will also be a key message delivered to those travelling in London during the Games but not to a 2012 event. Key to the success of this programme is securing long-term behaviour change by changing public attitudes, enabling walking and cycling to become more popular transport choices. After the Games, the programme will maximise the value of investment in walking and cycling infrastructure put in place for the Games, will ensure a partnership legacy between the programme partners and stakeholders and will result in a knowledge legacy of how to encourage active travel for large-scale sporting events in London and more widely.

7.258 Below is an overview of some of the deliverables of the active travel programme:

- A series of pre-Games active travel events and projects through the London 2012 Inspire programme.
- Travel pages on the London 2012 website: walking and cycling will be promoted strongly to spectators travelling to competition venues.
- Games travel marketing and communication campaign: walking and cycling will be key messages promoted through the transport publicity campaign for spectators during the Games.
- Travel Advice for Business: through engaging with local businesses, employees commuting during the Games will be encouraged to walk and cycle to work.
- Spectator guide: walking and cycling routes and cycle parking locations will be promoted on a venue by venue basis on the London 2012 website.
- Guided cycle rides and walks: These will be encouraged on routes around the Olympic Park and other venues. Cycle rides to the Velodrome and Cycling events are likely to be particularly popular.

Pre-booked accessible parking for disabled spectators

7.259 London 2012 will be providing limited pre-booked parking spaces at all venues for disabled spectators. The quantity and location of these parking areas will vary between venues, according to the other accessible transport options available to disabled people. The information about these parking sites will be available for the public on the London 2012 website through the accessible travel pages