

8. TRANSPORT STRATEGY

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Strategic Transport Study

8.1 This transport chapter is supported by a Strategic Transport Study, which is a supporting document to this OAPF. The Study was undertaken by Transport for London in conjunction with the GLA and Hammer-smith & Fulham, Ealing and Brent Councils. The Strategic Transport Study provides an evidence base for the transport measures proposed in this document and responds to major transport infrastructure proposals including High Speed 2 (HS2) and Crossrail 1.

PRINCIPLE T1: RAIL & UNDERGROUND

Proposals should:

- a. Deliver a state of the art rail station at Old Oak Common, providing interchange between HS2, Crossrail 1 and the Great Western Main Line;
- b. Provide new London Overground station(s) and supporting infrastructure;
- c. Provide substantial capacity improvements to existing London Underground and Overground stations, particularly Willesden Junction and North Acton, and potentially stations in the wider area;
- d. Ensure that the impact on existing rail infrastructure is minimised during construction; and

e. Seek to embed existing and future technology to inform station design to maximise integration with the wider area.

8.2 The new Old Oak Common station and surrounding interchange will be the key driver for development in the area and will be the focus of future transport connections. It could have the same regenerative benefits to that of the improved Kings Cross station. The station itself is being designed to accommodate 250,000 passengers a day, making it comparable in passenger numbers to Waterloo. HS2 will provide up to 18 trains per hour between Old Oak and the North, with Birmingham Airport just 31 minutes from Old Oak. The new Crossrail station at Old Oak will provide up to 24 trains per hour into central London, as well as services towards Heathrow and Reading. There will also be up to 24 trains per hour into central London on rail services using the Great Western Main Line (GWML). The station should support the integration of cycling and public transport by providing high quality, secure cycling parking at stations to meet projected demand as a minimum.

8.3 The presence of a Crossrail station will be one of the most important transport connections to the site. Crossrail will provide

a substantial increase in rail capacity to the West End, City and Canary Wharf and the station will bring excellent regional and sub-regional connectivity to Old Oak.

8.4 Subject to a positive business case a potential link from Crossrail to the West Coast Main Line (WCML) could provide additional connections from northwest London and Hertfordshire including, potentially, Wembley Central. The most recent proposals for a Crossrail to WCML extension would also be compatible with aspirations for operating passenger services on the Dudding Hill Line although a business case for this has not yet been established.

London Overground station(s)

8.5 Building on the international, national and regional links provided by HS2 and Crossrail, TfL has developed proposals for new London Overground stations at Old Oak Common which would provide access to services operating on the North and West London Lines.

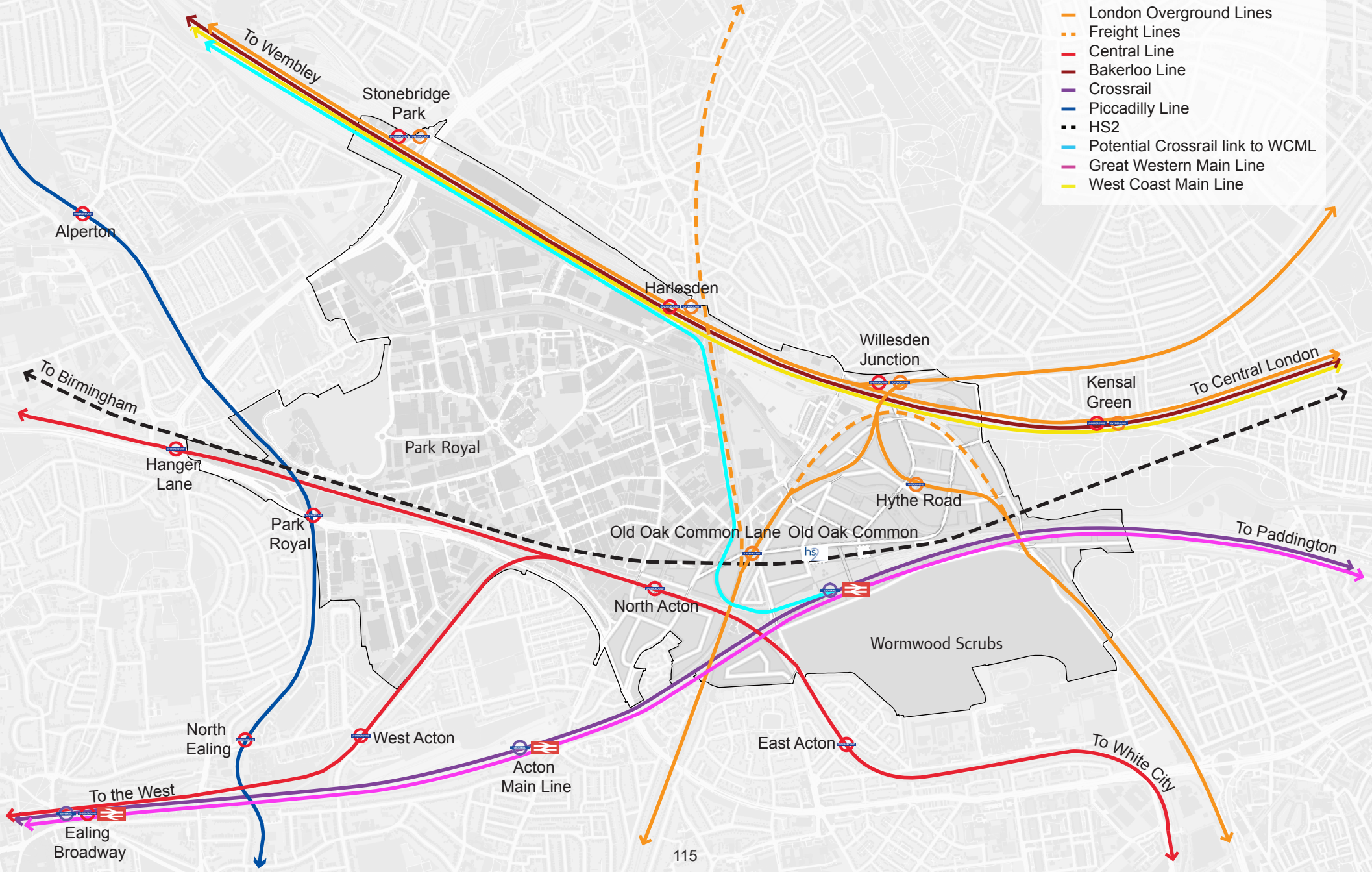
The London Overground stations would:

- Reduce the crowding effects of HS2 in central London;
- Facilitate regeneration across the Old Oak Common site;

0 0.5 1km

Figure 79: Existing and proposed rail connections

- London Overground Lines
- Freight Lines
- Central Line
- Bakerloo Line
- Crossrail
- Piccadilly Line
- HS2
- Potential Crossrail link to WCML
- Great Western Main Line
- West Coast Main Line



- Provide a new strategic transport interchange for west London and improve connections to other Opportunity Areas;
- Provide improved access to Crossrail and HS2.

8.6 Current HS2 plans do not provide for new stations on the London Overground or connections to them but they are seen as essential to maximise the potential connectivity of the new interchange. Public consultation on three alternative options for the new London Overground station(s) took place in autumn 2014. Following this TfL has made a recommendation to develop option C which would comprise two separate stations as illustrated in figure 79. This decision was also supported by a detailed technical study. The proposed stations are not a committed project and so powers of delivery and sources of funding would need to be secured. TFL, OPDC and GLA are continuing to progress these proposals.

8.7 As well as providing congestion relief at London Euston, the new London Overground stations will provide excellent local and sub-regional connections to Old Oak and will support development by extending the catchment area for new commercial activities bringing 250,000 additional people and 150,000 additional jobs within an hour's journey of Old Oak. The new stations will be essential to deliver the scale of development envisaged without compromising the operation of other parts

of the transport network. They will provide a level of public transport access and capacity which can support high density residential and commercial development.

8.8 The stations will also widen access to employment, retail and leisure opportunities for new residents by offering connections to major centres such as Clapham Junction, Shepherd's Bush, Richmond and potentially Hounslow. Improving local connectivity to Old Oak from all directions is critical to help maximise the opportunities for regeneration of the area. A 2014 study by Jones Lang LaSalle has suggested that with the local connectivity provided by the proposed Overground stations, as many as 20,000 additional jobs would be created at Old Oak. As part of the station proposals, new high quality pedestrian and cycle links will be provided across the Old Oak development area connecting to Victoria Road and the main HS2/ National Rail transport hub.

8.9 In addition to the new London Overground station(s), the case for improved service frequencies and longer trains is being investigated for the North and West London Lines. All proposals for improvements to the London Overground will be developed in close liaison with Network Rail.

Station improvements

8.10 To accommodate the scale of development at Old Oak and Park Royal, major improvements will be required at an early stage to existing rail stations including Willesden Junction and North Acton. These capacity improvements will need to accommodate the increases in rail station usage forecast but they are not currently funded or committed and so there would need to be a sound financial case and sources of funding would need to be secured.

8.11 The impact of development and growth across the area will also put added pressure on nearby stations such as Kensal Green, Harlesden, Park Royal, Stonebridge Park and Hanger Lane. Access to existing and new rail and Underground stations from Park Royal industrial estate will need to be enhanced through a combination of improved bus links and more direct high quality routes for pedestrians and cyclists.

Willesden Junction

8.12 Willesden Junction is a major interchange for north and west London. As well as the proposed rail connections highlighted above, passengers will also have the choice of taking existing Bakerloo line and London Overground services from Willesden Junction. A major rebuilding or renovation of the station will be required at an early stage to cater for development related trips and to act as a focus for

development to the north of Old Oak. The new station will need to offer improved interchange between the high and low level stations, accessibility improvements, better connections with buses and high quality pedestrian and cycle links to the surrounding streets. The station will also need to facilitate a new bridge connection over the WCML to the EMR site. However, there are no existing plans, funding or commitment to improvement by Network Rail, DfT, TfL, or rail operators and so this would need to be secured. Walk and cycle routes in and around the station will also need to be improved to cater for increased passenger numbers, particularly between Willesden Junction and the new development to the south. Any proposed work in and around the station including links over rail lines will require liaison with the Network Rail Delivery and Operations team.

North Acton

8.13 As well as improved access arrangements, works at North Acton to accommodate the predicted increase in passenger numbers will require new passenger facilities which may include new access from the north, improved entrances and ticket hall, a new footbridge, new stairs and lift access. TfL, OPDC, GLA and Ealing Council have undertaken a feasibility study looking at options for how the station's capacity and accessibility could be enhanced. The preferred option and design would be dependent on securing funding

and more detailed station modelling. There is also the possibility of a more substantial redevelopment which could allow for new structures to be built above the station. It will be important to secure good interchange with buses as part of any changes in and around the station.

Existing rail infrastructure

8.14 It is essential that existing rail infrastructure remains open during the likely long construction period and that any temporary disruption to both passenger and freight services is managed effectively and kept to a minimum. This will be a challenge when installing new stations, subways, bridges, works to move or alter rail lines or potential new decked structures over operational rail lines.

8.15 Existing and planned transport facilities and infrastructure including depots, maintenance facilities and stabling will need to be accommodated even if this involves relocation of some facilities in the long-term. Although HS2 will necessitate the relocation of the existing First Great Western and Heathrow Express depots, the new Crossrail depot is due to come into operation in 2017. TfL is currently assessing alternative locations for the reconfiguration or relocation of the Crossrail depot in the 2020's. Depending on the outcome of this work, the scale and phasing of development and related infrastructure works at Old Oak may be impacted.

8.16 South of the GWML tracks is a depot for the Intercity Express Programme (IEP) trains which is nearing completion on part of the former North Pole Eurostar depot. The first trains will arrive at the depot during 2015.

8.17 As well as the depots and stabling at Old Oak, there are existing rail freight facilities at and in the vicinity of Willesden Junction. If the existing rail freight facilities were identified for redevelopment, replacement facilities with the same capacity and accessibility would need to be provided nearby. The North and West London Lines and Dudding Hill Line also provide important routes for rail freight transport which will need to be accommodated. The GLA, TfL, OPDC, DfT, Network Rail and LCR will need to work together to plan for strategic rail and freight movement and to identify opportunities for redevelopment of sites no longer required for rail use.

PRINCIPLE T2: ROADS

Proposals should:

- a. Develop a network of new roads and streets to cater for the needs of all users, including measures to give priority to pedestrians, cyclists and buses, and to provide improved east-west and north-south connectivity;
- b. Ensure that roads in and around Old Oak and Park Royal can support development while maintaining capacity and reliability for strategic transport movements on an already heavily used network;
- c. Manage the cumulative impact of developments in west London on the A40 and A406 corridors, particularly on key junctions along these corridors including Hanger Lane, Gypsy Corner, Savoy Circus and Wood Lane;
- d. Provide appropriate links to, and improve junctions with the strategic road network;
- e. Provide sufficient capacity to enable the bus network to function effectively and for freight and site traffic to access and egress the site;
- f. Improve management of traffic on the existing network;
- g. Enhance existing highway infrastructure;
- h. Create new local links to the road network; and
- i. Create a legible, permeable and accessible network of streets for all users that encourages people to walk and cycle in comfort and connects into existing cycle infrastructure; and

j. Provide flexibility to enable the trialling and implementation of existing and future smart technology such as autonomous vehicles, drones, negative carbon vehicles and energy harvesting road design.

8.18 The road network will need to change if it is going to support new development in the area, improve conditions for existing users and facilitate improved pedestrian, cycle and bus connections. It will also be important that the amount of traffic generated by the development is limited to what the strategic road network including the A40 and A406 can handle without having a negative impact on its strategic function, given the limited amount of feasible and productive improvements that can be made. The A40 in particular has a number of junctions already at capacity and measures should be taken to ensure that there is minimal additional traffic generated that would put further pressure on these junctions as a result of development in Old Oak and Park Royal.

8.19 New junctions and road links will be needed to open up potential development sites. An indicative route network is shown at figure 80.

8.20 A 2014 study by Jones Lang LaSalle has suggested that the provision of Grand Union Street - an eastern highway link, bridging the gap between the HS2 interchange and Hythe Road, is one of the

most important highway links to provide, as it connects the largely residential development to the north, to the transport hub and commercial development to the south. Other important links that are essential to delivery are identified in figure 62.

8.21 The Roads Task Force (RTF) Street Types classification adopted by TfL will be used to identify the movement and place functions of these new routes. Measures to prioritise bus movements, provide segregated facilities for cyclists and create pedestrian priority areas will be needed. Any through routes used by general traffic should be designed to avoid rat running including traffic calming and controlled crossing facilities. 20 mile per hour speed limits will be the norm across the area, and this should be achieved through good design, rather than merely signage and traffic calming. All new and improved roads must be built to adoptable standards. Any decision to adopt streets would need to be made in collaboration between OPDC and the Local Authority.

8.22 In the wider area, highways modelling carried out for the Strategic Transport Study showed that a number of road junctions would be affected by increased traffic as a result of development at Old Oak. Changes in delays at key junctions without any substantial changes to the highways network are shown in figure 81.

8.23 It may not be possible for physical improvement works to be carried out at many of these junctions and in any case this may just shift the problem to another location. A package of transport interventions that has been designed to provide access to development sites and to minimise impacts on the surrounding road network was tested as part of the Strategic Transport Study and is fully described in the report. However, there is a need for further analysis to examine the need for improvements in the wider area. A study of the A40 corridor, which could include tunnelling options, is being carried out to understand the cumulative impact of growth at Old Oak and elsewhere in west London and to identify potential long-term solutions. The study is due to report late in 2015 or early 2016.

8.24 Development proposals will need to demonstrate that the impact on the road network can be managed in a way that mitigates the negative impacts on traffic flow and junction capacity. Collision analysis will be used to help inform the need for improvements at specific locations.

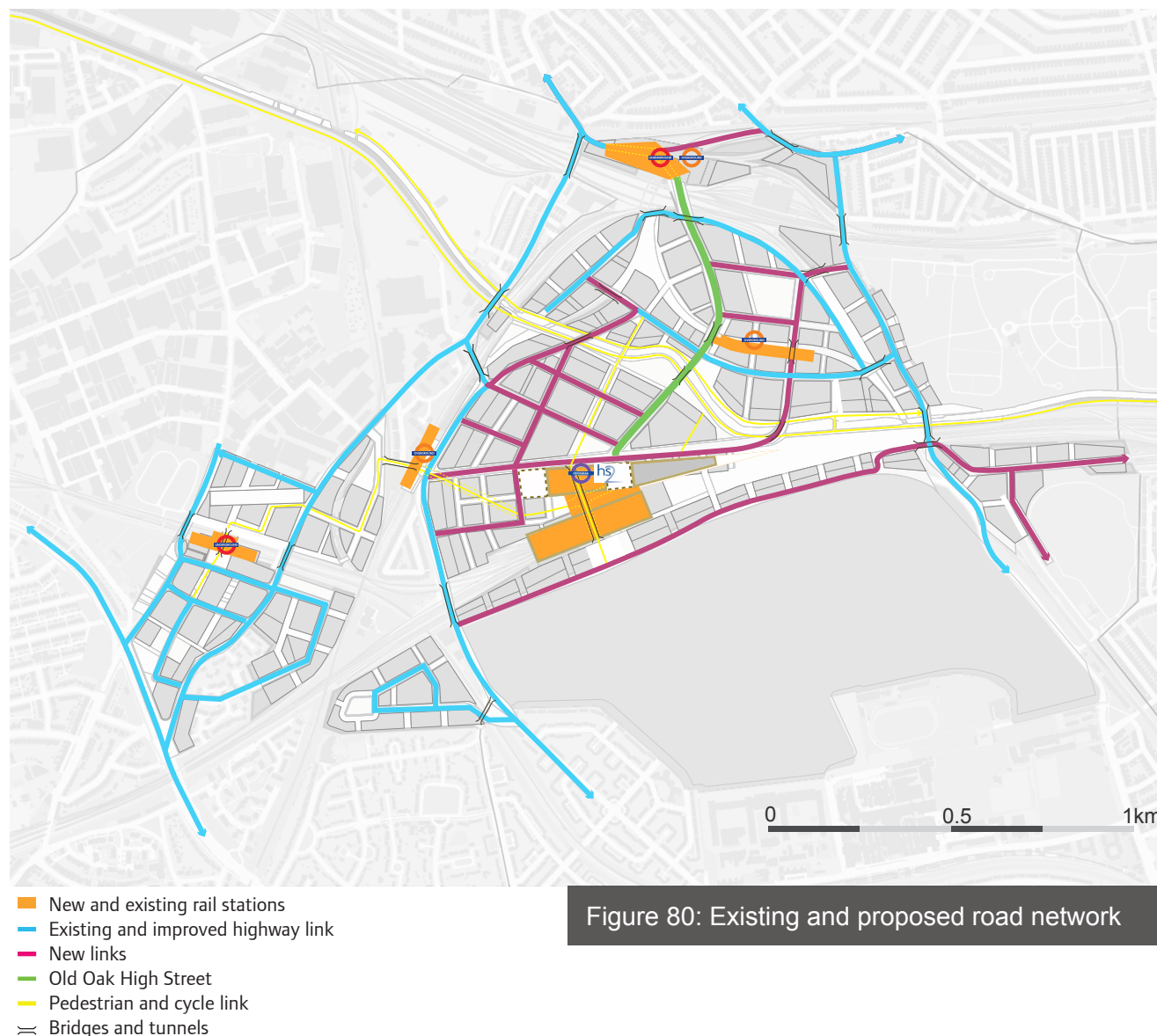


Figure 80: Existing and proposed road network

PRINCIPLE T3: CAR PARKING

Proposals in Old Oak should:

- a. Provide no car parking for new commercial development apart from parking for disabled people; and
- b. Provide no more than 1 car parking space per 5 residential units with priority given to disabled residents.

8.25 The modelling for the Strategic Transport Study indicated that the road network would not be able to accommodate additional development related traffic unless parking was restricted to very low levels across the Old Oak development area. Low levels of car parking will be essential to ensure that traffic congestion does not reach unacceptable levels. Nearly all spaces will be allocated for disabled staff and visitors, car club vehicles and operational use including deliveries. This approach is justified by the very high level of public transport accessibility resulting from the planned and proposed investment. The availability of rail services will be equivalent to central London and this will be supplemented by a radically improved bus network and high quality comprehensive walking and cycling provision on and off the highway so that the need for access to a car can be met by dedicated car club spaces together with parking for disabled people.

8.26 For new commercial development including offices, retail and leisure uses, no car parking should be provided apart from parking for disabled people. This approach will need to be applied to all new development in the core Old Oak area where Public

Transport Accessibility Levels (PTALs) will be the highest. It is expected that the majority of commercial space will be located close to Old Oak Common station and other public transport interchanges.

8.27 Further transport planning work is required to identify an appropriate level of parking for Park Royal and this would be set out through OPDC's Local Plan, where consideration would be given to the potential for flexibility to take account of the location and access to public transport services for employment uses in parts of Park Royal which are furthest from rail and Underground stations.

8.27 To ensure that impacts on the road network are minimised and to reduce the need for costly infrastructure, car parking for residential development will need to be restricted to very low levels, equivalent to a ratio of 0.2 spaces per unit. The approach taken in each place will need to be informed by PTALs and expected household types. Parking for disabled residents and visitors will be a priority and all parking spaces will be purchased on short leases rather than being sold with a specific property.

8.28 It is expected that Controlled Parking Zones (CPZs) will be co-ordinated across the area and that an approach to residents' permits will need to reflect the availability of alternatives to car ownership. Car club vehicles spread across the site should provide access to a car when needed for specific journeys and car club bays will need to be

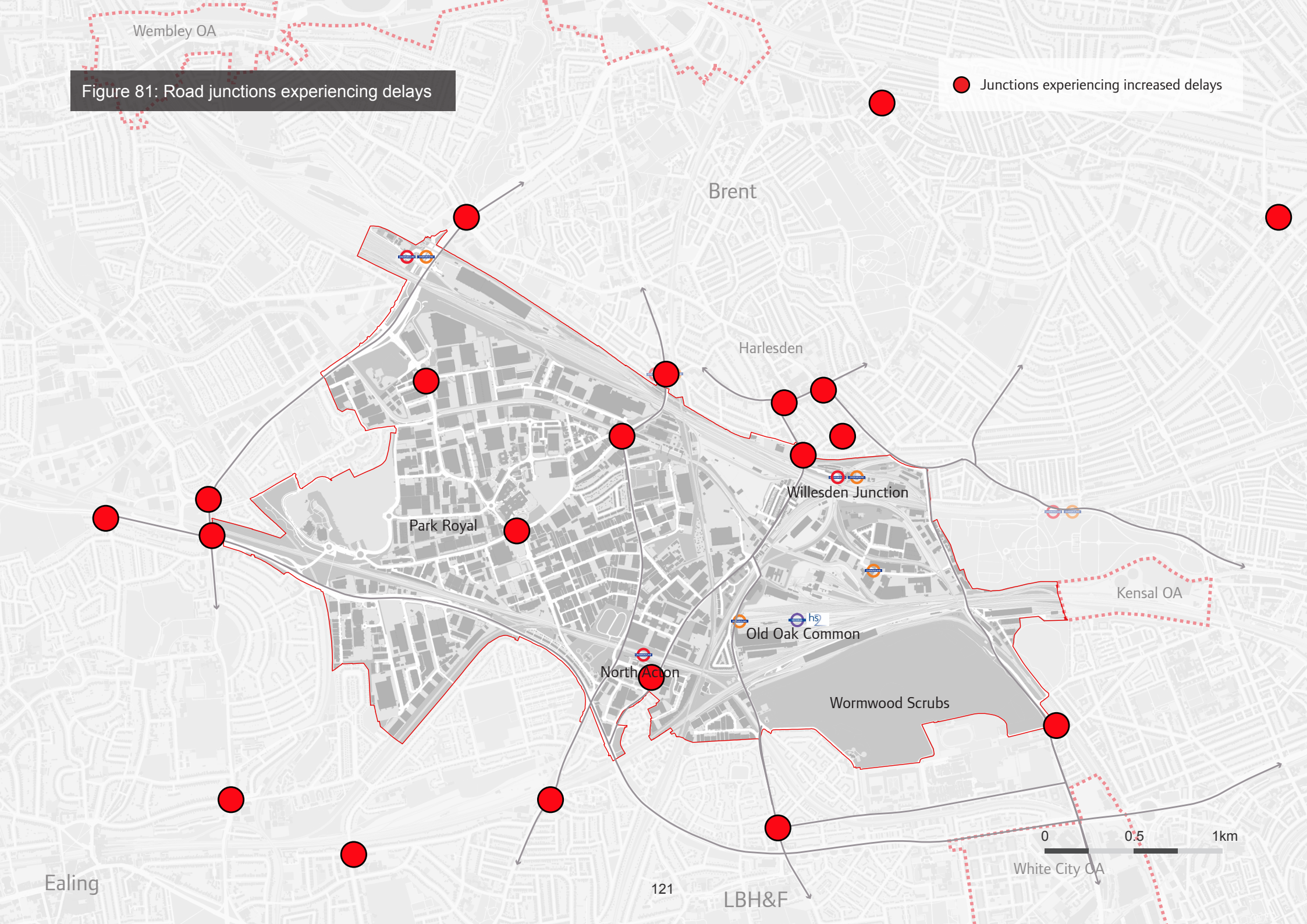
designed into the new development areas at the outset, as well as bays for existing and future technologies such as autonomous vehicles and charging point infrastructure.

PRINCIPLE T4: TAXIS, PRIVATE HIRE & COACHES

Proposals should provide suitable facilities to cater for anticipated demand from taxis and coaches.

8.29 There is likely to be a strong demand for taxis and private hire vehicles (PHV) generated by the HS2/National Rail interchange. The HS2 Transport Assessment suggests that there will be around 140 taxi trips (per direction) generated in the peak hour upon opening of HS2 Phase 2. The interchange will be designed with fully accessible taxi ranks and facilities for PHVs. Taxis and PHVs may be allowed to use access routes that are not available to general traffic. Further taxi and PHV demands will be associated with the Overground stations in the area. A key challenge will be the ability of the local road network to accommodate this number of taxis, along with residual demand from the development. Depending on the nature of development, particularly those which attract many visitors, there may also be a need to provide temporary facilities for coach parking as well as pick up and drop off. Consideration should also be given to the delivery of facilities for future transport technology such as autonomous vehicles.

Figure 81: Road junctions experiencing delays



PRINCIPLE T5: BUSES

Proposals should:

- a. Provide increases in bus frequencies on existing routes and introduce new and extended bus routes through the new development area; and
- b. Provide improvements to bus infrastructure.

8.30 To accommodate the increase in travel demand and to better serve existing communities, it will be necessary to recast the bus network in this part of London, and to introduce new and extended bus routes across the new development area. In line with the Transport Strategy's aims there will be a strong emphasis on good provision of bus services as a way of ensuring a high public transport modal share and reducing the impact of the development on the surrounding road network. Infrastructure such as bus priority to secure reliable and quick passage through the site, and suitably located stops and stands will be essential to delivering this. Bus priority could encompass measures such as bus lanes, bus only areas and/or gates depending on the individual circumstances at each location.

8.31 Bus services will provide improved connections linking Old Oak and Park Royal to surrounding neighbourhoods including Harlesden, Kensal, Acton, White

City and Shepherd's Bush. There is also the potential to provide a direct link to the Opportunity Area at Kensal Canalside. A combination of bus route extensions, new routes, additional capacity on existing services and enhanced frequencies should accommodate the substantial increase in bus trips expected as a result of growth and development at Old Oak.

8.32 Figure 82 shows existing bus services as well as the indicative roads a future bus network could operate on. Bus routes will run along Old Oak Lane and Scrubs Lane into and across the core development area. In addition, creating a bus only link between the heart of Old Oak and Willesden Junction would give substantial benefits in terms of bus accessibility, journey times and operational efficiency. This could be achieved by building the proposed bridge across the West Coast Main Line rail tracks to a standard that could accommodate buses. A feasibility study will look at the cost, design and engineering implications. Routes running into the site via this bridge would attract additional bus passenger trips and create a vital link between the Old Oak development area and areas to the north that include some of the highest levels of deprivation in London. There would also be benefits in allowing buses to use the proposed route from Old Oak Lane/ Station Road to High Street/Harrow Road past Willesden Junction station.

8.33 All roads that will be used by buses must allow appropriate clearance for the largest double deck vehicles and be built to an adoptable standard with sufficient width. Where appropriate, priority should be provided over other vehicular traffic which may include the creation of bus only facilities not open to general vehicular traffic. Improvements such as the works to lower Old Oak Common Lane where it passes under the Great Western Main Line are absolutely vital in allowing access for double decker buses. These works will be carried out as part of HS2.

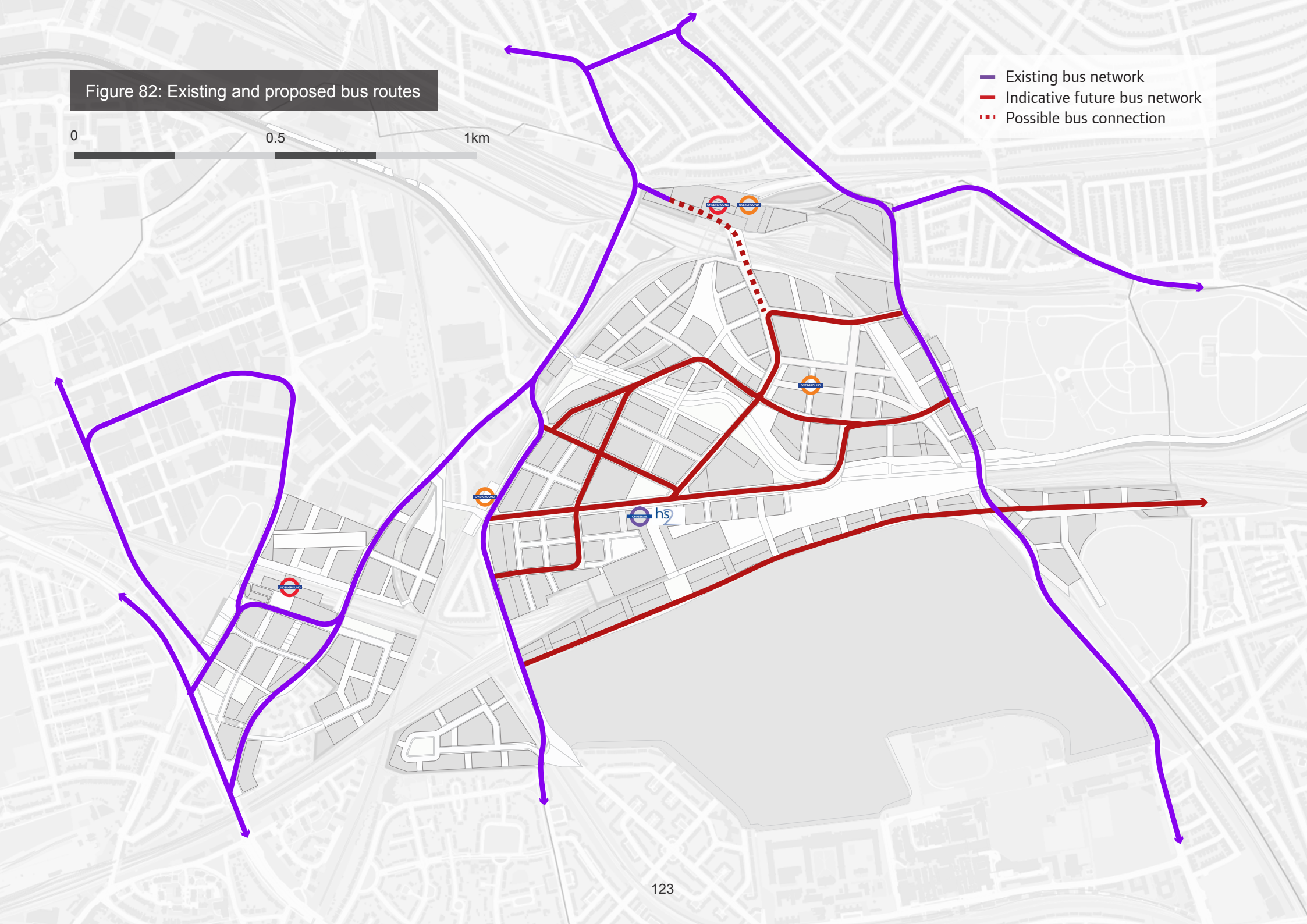
8.34 The bus routes which use these roads would need to be determined at a later date following a review of the bus network operating in the wider area and the form new development takes, particularly north of the canal. Proposals for individual sites, sources of funding and development phasing will all influence the development of the bus network. At present it is anticipated that there would be at least six bus routes running to/through the site.

8.35 This increase in bus services will also require provision of new supporting infrastructure such as bus stops, stands, turning and drivers' facilities and priority measures. TfL's Bus Stop Accessibility Guidance will be applied to all new facilities and existing facilities brought up to standard. Bus stops should be placed close

Figure 82: Existing and proposed bus routes

0 0.5 1km

- Existing bus network
- Indicative future bus network
- Possible bus connection



to centres of activity. Whilst these issues will need to be considered in more depth at the detailed design stage it is important that they are built into the planning process now, as they will require sufficient space to be made available. In particular, sufficient space for bus interchange and standing space for terminating facilities will need to be provided, particularly around the HS2 station.

8.36 Where possible, bus services and the availability of through routes for buses will be provided from the beginning of the occupation of development to ensure that car-dependency does not become established. The bus services are likely to require initial subsidies to pump-prime routes before they become viable. In the short-term there will need to be bus service diversions and route changes to accommodate construction works. It will be essential that disruption to bus services during the long construction period is minimised and any extra costs incurred by TfL be paid for by the developers.

PRINCIPLE T6: WALKING & CYCLING

Proposals should:

- a. Create an exemplar pedestrian and cycle network and level of service across the development area with a high level of segregated cycle infrastructure;
- b. Provide high quality cycling provision in line with the Mayor's Vision for Cycling and the adoption of best practice from the 'Mini Holland' projects;
- c. Connect to existing and planned pedestrian and cycle links in the wider area;
- d. Ensure that all key destinations including public transport interchanges, local centres, schools and community facilities are fully accessible on foot and by cycle;
- e. Provide cycle parking to meet future demand in accordance with London Plan standards as a minimum; and
- f. Provide flexibility to enable the trialling and implementation of existing and future smart technology such as energy harvesting pavement materials.

8.37 Aside from limited access along the Grand Union Canal, Old Oak is currently impenetrable for pedestrians and cyclists and the whole area is difficult to navigate with numerous barriers to movement and a hostile environment. Large highway and rail corridors in the wider area also create barriers to movement in and out of the

site. The HS2/National Rail interchange will remain difficult to access unless improvements are made to the existing road network and new high quality links are provided for pedestrians and cyclists. There will be a need to provide new connections to both existing and proposed strategic cycling and walking routes and to key destinations such as Harlesden, White City, Park Royal, North Acton, Queens Park and Ladbroke Grove. Existing and indicative future cycle routes are shown in figure 83.

8.38 Modelling carried out for the Strategic Transport Study has shown that a high proportion of journeys in and around Old Oak will need to be undertaken on foot or cycle if the road network is not to suffer from increasing congestion. The area has great potential for cycling and walking given its topography and the close proximity of major trip attractors. In line with the Mayor's Vision for Cycling there should be a transformative change in conditions underpinned by high quality design solutions. The design of the area should therefore encourage and accommodate a high mode share for both cycling and walking. All streets should be designed to be comfortable and attractive for all pedestrians and cyclists.

8.39 Redevelopment presents an opportunity to open up the area and reconnect it to surrounding residential and business areas as well as establishing connections along the canal corridor and



Figure 83: Existing and indicative future cycle routes

linking to green spaces such as Wormwood Scrubs. The canal towpath provides a leisure route for cyclists and pedestrians and is designated as a 'Quietway'. It is currently narrow and its capacity is limited but funding from the Quietway programme will improve these conditions. A continuous pedestrian and cycle route should also be created along the north side of the Grand Union Canal. There are proposals for the east west Cycle Superhighway to be extended along the A40 corridor and links to this from Old Oak will need to be provided. A substantial improvement to the cycle network on the A219 Scrubs Lane / Wood Lane will be required to make that strategic link. The Park Royal industrial estate should also benefit from improved facilities to enable more journeys to be undertaken by foot or cycle.

New route networks

8.40 Given the future delivery of the Cycle Super Highway along the A40, there is an opportunity to create new and substantially improved connections for pedestrians and cyclists in Old Oak that overcome the barriers and severance that currently make moving around the area so difficult. These links should contribute to coherent, comprehensive, high quality networks for walking and cycling across the new development area, connecting seamlessly to other neighbourhoods and local centres. Those networks should serve both local and strategic movement by pedestrians and

cyclists. Details will be determined as the masterplan and phasing of development across the site emerge.

8.41 Segregated facilities or priority measures to assist cyclists are likely to be required, particularly on busier streets. All cycle routes and supporting infrastructure will need to conform with or exceed London-wide and borough standards including the London Cycling Design Standards (2014). The network should draw on current best practice in London, including Cycle Superhighways, Quietways and the Mini-Holland programme (this is a scheme supporting three London boroughs to deliver local cycle networks with levels of service equivalent to best practice examples from the Netherlands).

8.42 New development will need to create a permeable and pedestrian and cyclist friendly environment at all times. The design of infrastructure should be accessible to all pedestrians and cyclists in line with the supplementary planning guidance Accessible London: achieving an inclusive environment and the forthcoming London Pedestrian Design Guidance. TfL's Pedestrian Comfort Level Guidance will be used to inform detailed planning of pedestrian routes such as pavement widths and crossing facilities and will be applied to both new and upgraded routes. Pinch points and hidden areas should be avoided. The most challenging aspect will

be providing infrastructure to overcome level differences and to cross rail lines and canals. Gradients should be minimised and shallow enough to provide access for all but in some locations it may be necessary to provide lifts to overcome changes in levels.

8.43 New residential areas should be designed to deliver street environments where permeability for walking and cycling is prioritised over through-movement for motor vehicles. Local streets should be low-speed environments where it is safe for cyclists of all ages and abilities to share the street with other users and where it is clear from the design of the street and use of materials that it is not a motor vehicle-dominated space.

Supporting infrastructure

8.44 Cycle parking will be provided to cater for future demand in line with the quantitative and qualitative requirements set out in the London Plan and the London Cycling Design Standards (2014), providing numbers in excess of London Plan standards. This will include private cycle parking for residents and employees as well as generous provision for visitors and high quality facilities at public transport interchanges. The spatial and design requirements will need to be factored in from the outset. Visitor cycle parking will be integrated into the overall urban design and sited in locations that do not impede pedestrian movement. Cycle wayfinding

PRINCIPLE T7: CONSTRUCTION FREIGHT, DELIVER- IES & SERVICINGS

signage will be installed to improve the legibility and navigation to, from and through the area.

8.45 A future extension of Cycle Hire into Old Oak would represent a logical expansion westwards. Subject to further analysis, a network of docking stations could be designed in to the new development areas from the outset and built at the appropriate timings. Funding for the docking stations would need to be provided through contributions from developers as there are currently no plans by TfL to extend the network in this area. The case for extending further into the Park Royal industrial estate would need more detailed investigation.

8.46 To provide navigation, particularly for the large number of visitors expected to use the transport interchange, Legible London signage will be installed at key locations. To aid pedestrians' understanding of the area there should be consistent use of paving materials. High quality pedestrian connections linking the main transport interchange to the London Overground station(s) and other key destinations such as Willesden Junction, North Acton and surrounding areas will be designed to form part of the urban fabric. Where possible, these will be open 24 hours a day to non-rail travellers even where they are managed as part of the overall transport interchange.

Proposals should:

- a. Make maximum use of rail and water transport during the construction period, including removal of excavated material, and for servicing and deliveries;
- b. Co-ordinate and phase construction projects to enable the transport impacts to be effectively managed;
- c. Manage servicing and deliveries in line with best practice to minimise the impact on the surrounding road network;
- d. Support the provision and operation of measures to reduce freight trips (e.g. consolidation centres), promote cleaner vehicles, minimise any adverse impacts on local residents and businesses, and minimise interaction of larger vehicles with cycles and pedestrians.

8.46 The concentration of multiple infrastructure and development projects within one area and the sheer scale of construction activity will generate pressures on the transport network. This has not been explicitly modelled in the Strategic Transport Study although some information on construction movements has been collated by Network Rail based on information supplied by Crossrail and HS2. Further analysis of construction transport impacts will be required as information on development phasing becomes available. A construction logistics strategy that achieves

a high level of co-ordination between all developers and infrastructure providers drawing on best practice from elsewhere will be prepared. Challenging targets for use of sustainable transport will be set and enforced through the strategy. This will need to be jointly produced by TfL, OPDC, GLA, the land owners, the boroughs, HS2, Network Rail with input from the Park Royal Business Group and local residents.

8.47 Adopting sustainable transport solutions across all major construction projects will help to minimise impacts on local residents and businesses, create new commercial opportunities for local companies and allow the sharing of overheads. Construction phasing, detailed timing of deliveries and vehicle routing will need to be managed and co-ordinated across a range of projects. A central booking system for deliveries will need to be put in place and all major construction projects will be required to sign up and participate including a contribution to the costs of shared facilities such as consolidation centres, wharves and rail facilities.

8.48 There will be a need to co-ordinate and phase construction projects to enable the transport impacts to be effectively managed. As construction activity intensifies the number of vehicle movements on the local road network will increase along with

potentially increased exposure to road safety risk and deterioration in air quality.

8.49 A combination of voluntary measures, incentives and targeted investment will be used to reduce these increases as much as possible, e.g. through use of alternative modes. Residual movements will need to be made using vehicles that are designed to be as safe as possible, together with high standards of driver training.

8.50 Membership of a scheme such as the Fleet Operator Recognition Scheme and adherence to the industry Standard for reducing Work- Related Road Risk will form part of a package of measures to reduce risk to other road users from freight movements.

Using rail and canal in construction logistics

8.51 For a number of years there have been aspirations to make greater use of the canal and rail routes for freight transport in Old Oak and Park Royal and some sites already have direct rail or canal access. However, the potential of these modes, particularly for bulk transport has not been exploited.

8.52 Redevelopment in Old Oak alongside major infrastructure projects will generate a large amount of construction vehicle movements for a number of decades exporting waste and importing materials. The amount of construction activity planned for the area provides an opportunity for sustainable transport solutions to be

adopted. Maximum re-use and recycling of waste and construction materials within the area will reduce transport demands. For residual movements, there is potential for bulk construction materials and/or waste to be transported by rail and canal although issues of local environmental impact and commercial viability will need to be addressed.

8.53 The project director for HS2 phase 1 has stated that maximum use should be made of rail and water transport for movement of waste and construction materials. Alongside use of existing facilities, this is likely to require additional rail freight facilities which could be shared with other large construction projects and provide a legacy use for future distribution and logistics services. A commitment to maximising use of rail and water transport should be extended to all other major construction projects in Old Oak, drawing on best practice from Crossrail and the Olympics. As part of the scrutiny process for HS2, TfL has petitioned for maximum use to be made of the canal and rail network for construction transport in line with policy in the London Plan and Mayor's Transport Strategy and will continue to pursue discussions with HS2 Limited as the project is developed.

8.54 Off-peak rail paths for freight movements, to 2017 are reserved as part of the construction strategy for Crossrail, enabling 85% of excavated Crossrail material (by tonnage) to be removed by rail.

Investigation should take place as to whether paths can be identified beyond 2017 for the use of transporting construction materials and waste from major infrastructure and development projects at Old Oak.

8.55 Water transport could take advantage of existing wharf facilities on the canal and may be best suited to transport of bulk loads to be used in construction including movement of material for tunnel segments.

Freight transport geography

8.56 Old Oak and Park Royal currently generate a substantial number of road freight movements as they are key industrial sites where many raw materials and manufactured goods are handled en route to their final users, generally elsewhere in London. Although business relocations may have an impact on vehicle routing, there will still be a substantial number of freight movements to accommodate on the road network. Improving the reliability of deliveries and servicing is a key factor in business success.

8.57 Park Royal is London's largest industrial area and one of Europe's biggest urban industrial estates home to more than 2,000 workplaces and over 44,000 employees. Wholesale, transport and warehousing / storage use functions account for 27 per cent of commercial floor space in Park Royal. Manufacturing accounts for 20 per cent and construction related activities account for a further eight per cent. Arguably, in some sectors such

as food preparation, Park Royal already acts as a large-scale consolidation centre for central London. These generate a substantial number of strategic and local trips by heavy and light goods vehicles. Similarly, Old Oak currently accommodates a number of key industrial and waste processing activities.

8.58 Congestion at key junctions and on links providing access to strategic routes is a major barrier to business growth and may have been a factor in business relocations away from the area in recent years. The volume of freight and servicing movements also raises challenges in terms of maintenance and management of the road network and the safety and environment for other road users.

Reducing additional delivery and servicing trips

8.59 A potential solution to the problem of large freight vehicles using unsuitable roads and the resulting congestion is the establishment of consolidation centre(s) that could service Old Oak and Park Royal and potentially a wider area of west London. Consolidation centre(s) could reduce the volume of Heavy Goods Vehicles (HGVs) passing through the area although it would generate traffic impacts in the immediate vicinity. New commercial and residential development within the Old Oak area will generate large numbers of delivery and servicing movements once occupied. TfL wishes to discourage use of unsuitable roads by vans and HGVs to

avoid the resulting congestion that could arise. Consolidation centre(s) may also enable deliveries and servicing to take place during the night-time or other off peak periods, thereby avoiding the worst traffic congestion.

8.60 The establishment of consolidation centre(s) used by multiple businesses in the area could reduce demand and help manage flows at peak times by utilising existing and future technology to enable 'call-off' deliveries of stock during quieter times on the local road network and reducing freight's contribution to congestion.

8.61 Consolidation centre(s) should be located on sites that are easily accessible to the strategic road network, rail connected and central for local deliveries and servicing. Potential sites for consolidation centre(s) in the Old Oak and Park Royal area will be identified through the Local Plan process.

Designing facilities for deliveries and servicing

8.62 Servicing and deliveries in Old Oak and Park Royal will need to be managed in line with best practice to minimise the impact on the surrounding road network. In new development areas off street solutions for servicing should be adopted, where possible, utilising different ground levels including basement and void areas within multi storey structures. Street frontage servicing should be minimised and restricted to small individual units located on lightly trafficked streets which can be

served by small delivery vehicles. From the outset residential and commercial developments will be designed with central drop off facilities for home deliveries including refrigerated storage. Given that the largest growth in traffic in recent years has been light goods vehicles (vans) it is particularly important to find more efficient means of delivering goods to enable the road network to function more effectively.



Figure 84: Grand Union Canal looking east