OPDC
OLD OAK AND PARK ROYAL DEVELOPMENT CORPORATION

Old Oak North Development Framework Principles

LOCAL PLAN SUPPORTING STUDY

June 2018

MAYOR OF LONDON

32. Old Oak North Development Framework Principles

Document Title	Old Oak North Development Framework Principles
Lead Author	OPDC (supported by AECOM)
Purpose of the Study	To provide a local vision and detailed guidance specific to the Old Oak North place.
Key outputs	Identifies a series of principles for: • Land uses • Public realm and connections • Publicly accessible open spaces and green infrastructure • Development capacity • Indicative building heights and massing • Utilities infrastructure requirements
Key recommendations	• Deliver a viaduct for the West London Line to generate wider benefits. • Delivery phasing of development to reflect updated location of key routes of Park Road and Old Oak Street. • Provide connections to Scrubs Lane that should be located at Park Road and Hythe Road. • Provide connections to Old Oak South via Park Road and Old Oak Street. • Delivery of a two-way cycle lane to the west of Scrubs Lane is no longer likely to be deliverable. • Within the place of Willesden Junction, Old Oak Street will continue as a walking and cycling route connecting to Station Approach in the west. To the east a new walking and cycling link will also be delivered to Harrow Road. • Defines locations for town centre uses aligned to reflect new street hierarchy. • Deliver decreased amounts of employment floorspace. • Defines new locations and format of publicly accessible open space. • Defines 8-12 storey shoulder heights for development, tall buildings to be appropriate across the area (subject to other development plan policies and material considerations) and preferred locations for tall buildings to reflect location of active land uses and to support legibility.
Key changes made since Reg 19 (1)	None. This is a new supporting study.
Relations to other studies	Interfaces with the Public Realm, Walking and Cycling Strategy, Environmental Standards Study, Integrated Water Management Strategy, Development Capacity Study, Bus Strategy, Grand Union Canal Massing and Enclosure Statement, Future Employment Growth Sectors Strategy, Scrubs Lane Development Framework Principles and Infrastructure Delivery Plan.
Relevant Local Plan Policies and Chapters	• All Strategic Policies. • Place Policy P1 (Old Oak South), P2 (Old Oak North), P10 (Scrubs Lane) and P11 (Willesden Junction). • Policy DI2 (Timely Delivery and Optimised Phasing)

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Draft Old Oak North Development Framework Principles

June 2018

MAYOR OF LONDON

Old Oak North
Development Framework Principles

June 2018

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Document Structure

1. Introduction
2. Shaping the Local Plan Vision and Policies
3. Development Framework Principles
   - Connectivity Principles
   - Green Infrastructure Principles
   - Land Use Principles
   - Utilities Infrastructure
   - Development Capacity and Building Heights Principles
4. Illustrative Development Framework
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Contents

Old Oak North Development Framework Principles

1 | Introduction

1.1 Overview of the Old Oak North Development Framework Principles (DFP)

1.1.1 Overiew of the Old Oak Masterplan

This document has been produced by OPDC based on information provided by the AECOM Masterplan Consortium who were commissioned in Summer 2017 to undertake a master planning exercise for the wider Old Oak area, to inform the development of the Local Plan among other objectives.

AECOM have developed a masterplan which illustrates how the objectives set out in the Local Plan and the mayor's policies might be successfully delivered, taking into account viability and technical challenges of delivery.

Drawing on the Masterplan, OPDC has produced this document to set out development principles that have been defined through the masterplanning process to infom OPDC planning policy and guidance.

1.1.2 Overview of the DFP

The Old Oak North DFP sets out a series of principles to help deliver the OPDC Local Plan Place Vision for Old Oak North.

The Old Oak North Development Framework Principles (DFP) is a supporting study to inform OPDC's Local Plan and other relevant planning guidance.

The DFP sets out a clear series of principles and indicative for the design, planning and development of sites in Old Oak North. It covers all of the Old Oak North Place defined in the Local Plan, and also takes in portions of other Local Plan Places including Scrubs Lane. This is shown in Figure 1 opposite. Whilst a Scrubs Lane DFP has been developed and published previously, this DFP supersedes elements within the Scrubs Lane DFP where relevant.

The document is structured as follows:

Section 2 – Shaping the Local Plan Old Oak North Vision and Policy - setting out how the DFP has informed amendments to the Old Oak North Local Plan place vision and policy;

Section 3 –Development Framework Principles – setting out the key requirements for development relating to:

- PR1 Key routes and servicing
- PR2 Bus network
- PR3 Walking and cycling network
- PR 4 Bridges and underpasses
- PR 5 West London Line
- PR 6 Green infrastructure
- PR 7 Publicly accessible open spaces
- PR 8 Town centre and employment uses
- PR 9 Social infrastructure
- PR 10 Residential uses
- PR 11 Heritage and character
- PR 12 Utilities infrastructure
- PR 13 Development capacity
- PR 14 Building heights

Section 4 presents an illustrative development framework for Old Oak North representing one way development could be broughtforward following the Principles contained in this document.

An Appendix includes:

Scrubs Lane Access Study

Infrastructure: Bridges and Underpasses

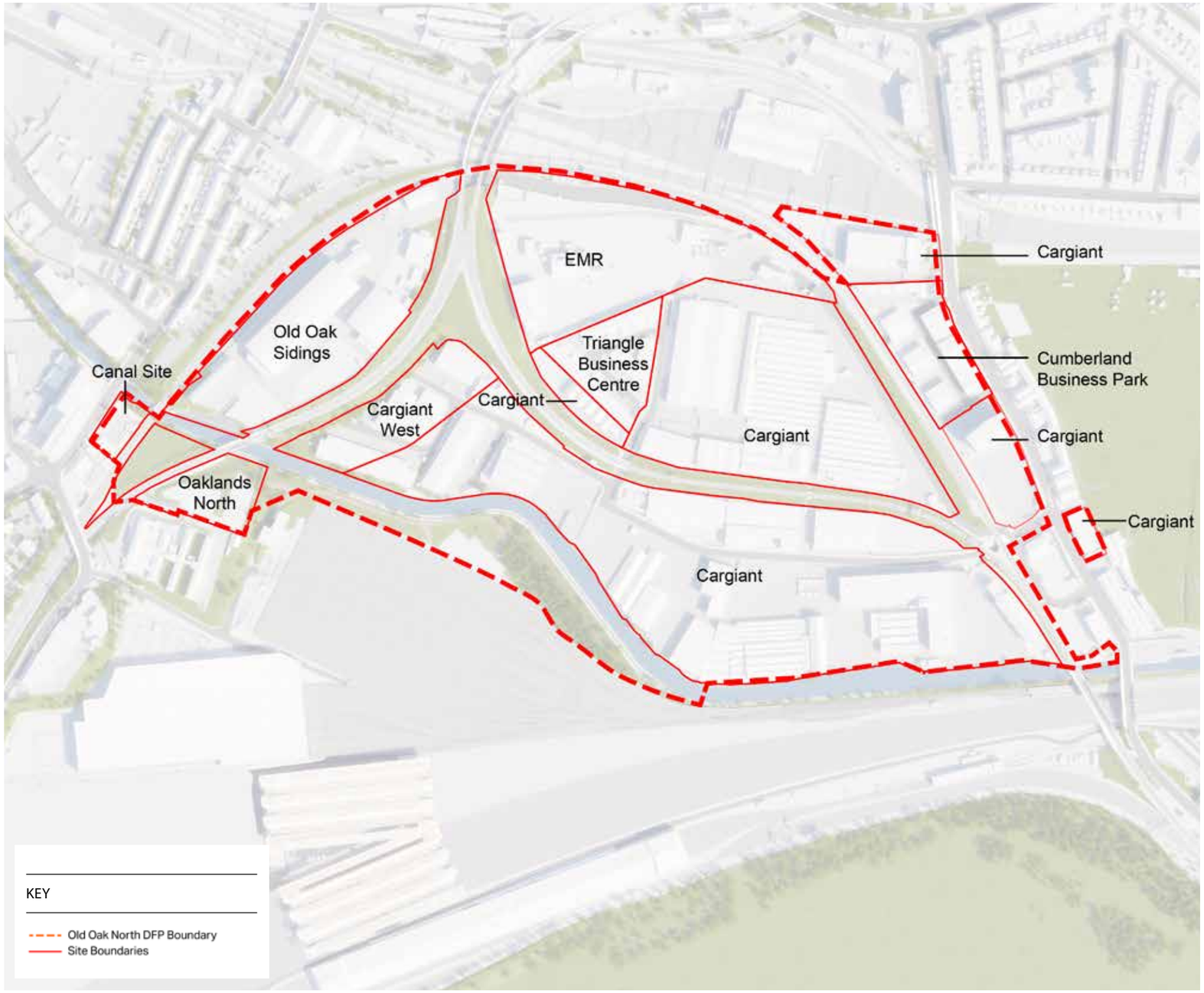


Figure 1 Old Oak North Development Framework Principles Area and Individual Development Sites

1.1.3 An Overview of Old Oak North

Old Oak North is located between the Grand Union Canal in the south and Willesden Junction and Harlesden to the north.

The area is currently home to a large car manufacturing and retail business, a range of light industrial uses, creative industries, waste management facilities at Old Oak Sidings and the European Metal Recycling site.

Access into Old Oak North is very poor with only one vehicular route at Hythe Road and three low quality walking routes from Willesden Junction Station, a pedestrian bridge over the Grand Union Canal and along Hythe Road from Scrubs Lane. Access is restricted by significant amounts of rail lines and the Grand Union Canal.

The arrival of Old Oak Common Station in 2026, coupled with access and capacity improvements to Willesden Junction Station and a new street and bus network will all significantly improve public transport access. Modelling shows that these enhancements could deliver a high Public Transport Accessibility Level (PTAL) of 6b – the highest public transport access category. London Plan policy and national guidance seeks to optimise development at transport interchanges and on accessible brownfield land. As such, the potential increase in access to public transport accessibility provides the opportunity for Old Oak North to become a high density mixed use area with a range of building heights including tall buildings.

Old Oak North will be largely unencumbered by activities associated with the construction of Old Oak Common station to the south. It also benefits from having a semi-consolidated land ownership with a limited number of land owners. This place can therefore make a significant contribution to OPDC's homes and jobs targets in the short to medium term. However, to support early delivery, a number of key challenges need to be addressed. These include delivering the West London Line viaduct, delivering new crossings across railways and the Grand Union Canal, retaining and mitigating the impacts of waste management facilities at Old Oak Sidings, managing transport impacts on the road network, ensuring the timely access to public transport at Willesden Junction and Old Oak Common Stations and ensuring the phasing of development provides the full range of uses, to meet the needs of people living and working in Old Oak.

2 | Shaping the Local Plan Vision and Policy

2.1 Shaping the Local Plan Vision and Policy

2.1.1 Local Plan Old Oak North Vision and Policy

The Revised Draft OPDC Local Plan was published for consultation between June and September 2017. This DFP has provided information that has been used to amend the Old Oak North Vision and Policy for the Regulation 19(2) version of the Old Oak North Vision and Policy.

The information set out in the DFP is based on the consideration of the previous Local Plan public consultation comments, a robust assessment of the technical constraints within the Old Oak North area and testing of the deliverability of the previous Old Oak North place policy. This process has resulted in the creation of a series of development principles used to amend the Local Plan Old Oak North Place Policy (Policy P2), Scrubs Lane Place Policy (Policy P10) and related cluster policies.

In summary, these amendments are:

- The delivery of the West London Line on a viaduct is identified as the preferred option for overcoming north/south severance of the main part of Old Oak North. This provides optimum outcomes in terms of placemaking, delivering new connections and development capacity. The viaduct will also allow for the delivery of the potential Hythe Road London Overground station.
- Delivery of the West London Line Viaduct is also identified to create the opportunity to remove the previously proposed new southern access route into Old Oak North from Scrubs Lane. Instead, improvements to the existing Hythe Road are required. However, if a West London Line viaduct is not delivered, the previously proposed southern access route will be required (see the Connectivity Principles for further information).
- Park Road is identified as the early key route into Old Oak, connecting Old Oak Common Lane to Scrubs Lane.
- Enhancement of the existing Hythe Road to provide direct and legible connection between Scrubs Lane and Park Road and the potential to continue to Old Oak Sidings, to support the optimisation of delivery of development, utilities and the Canal Park.
- Laundry Lane as a walking and cycling route has been replaced by Park Road as an all modes route, with restricted access for private vehicles.
- Reduction of or removal (where feasible) of railway embankment slopes is recommended to optimise development capacity.
- Town centre and employment uses are now proposed to be located across Old Oak North with areas of focus along Park Road, around the potential Hythe Road Overground station, the Rolls Royce Building and along the Grand Union Canal.
- Old Oak High Street has been renamed to Old Oak Street and its alignment, character and function revised to reflect changes to key connections, the phasing of development and the updated distribution of town centre and employment uses.
- Harlesden Place is a new civic space providing an access point to Willesden Junction and a focus for community activities.
- Connections north of Park Road to Willesden Junction and Harlesden have been changed to walking and cycling routes reflecting updated technical feasibility studies.
- Grand Union Square has been renamed the Canal Park. The distribution of land uses, phasing, connections and street network around the Park have been updated. The exact extent, character and function Canal Park have been amended. The information within the cluster policy for Grand Union Square has been included within the Old Oak North place policy.
- The level of employment floorspace and associated jobs target has decreased reflecting further market testing and viability work.
- The number of new homes has increased with greater delivery in the first 10 years of development to reflect updated infrastructure delivery assumptions.

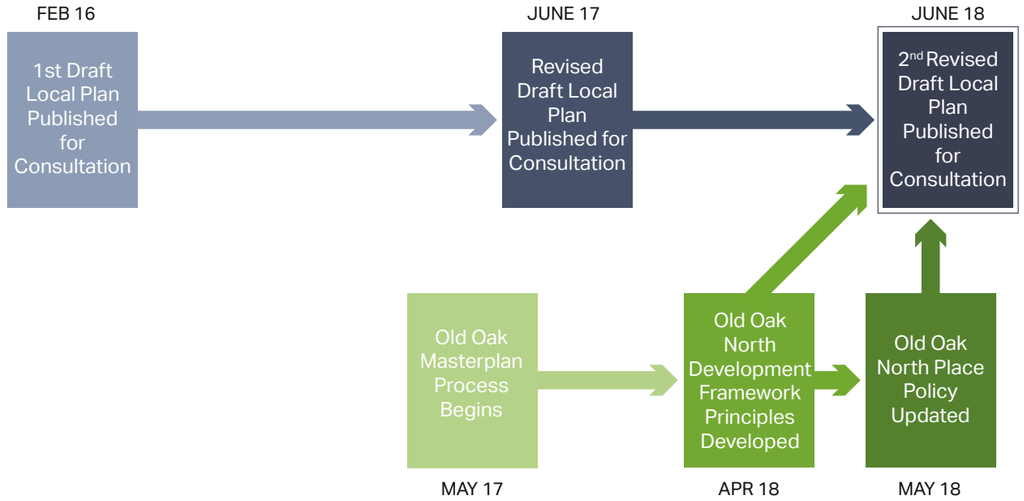


Figure 2 How the Old Oak North DFP has shaped the Local Plan

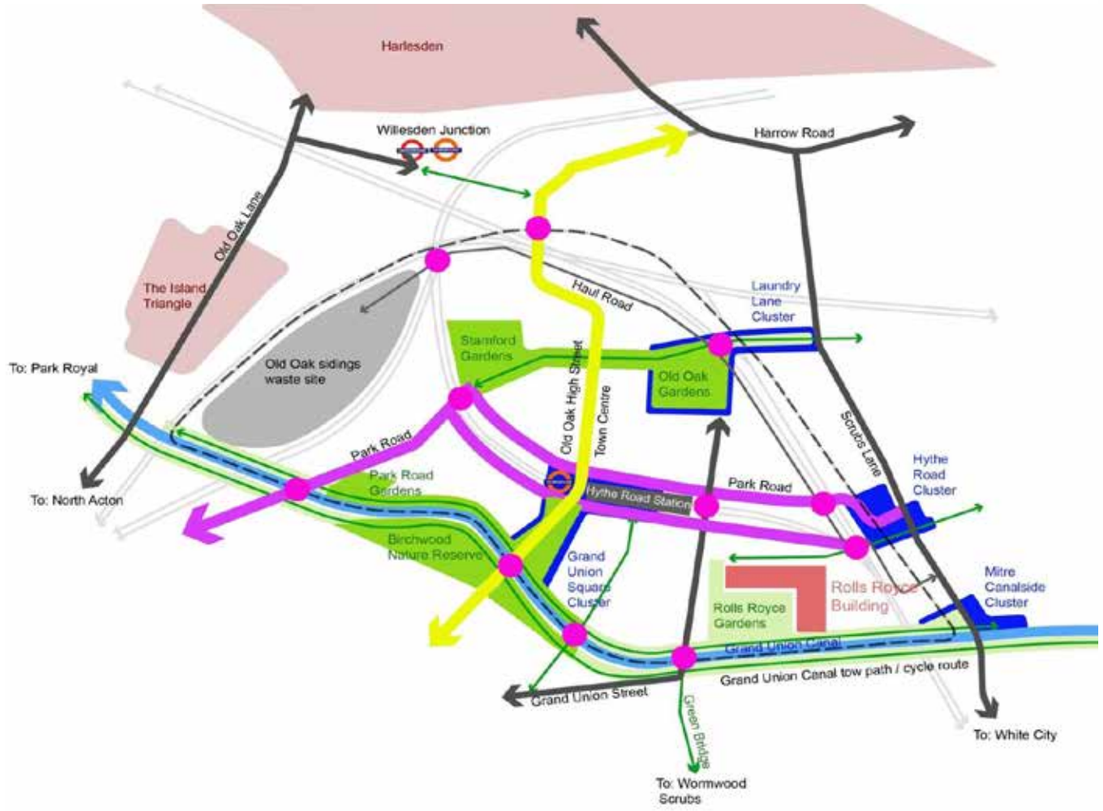


Figure 3 Old Oak North Policy Diagram - Revised Draft Local Plan June 2017

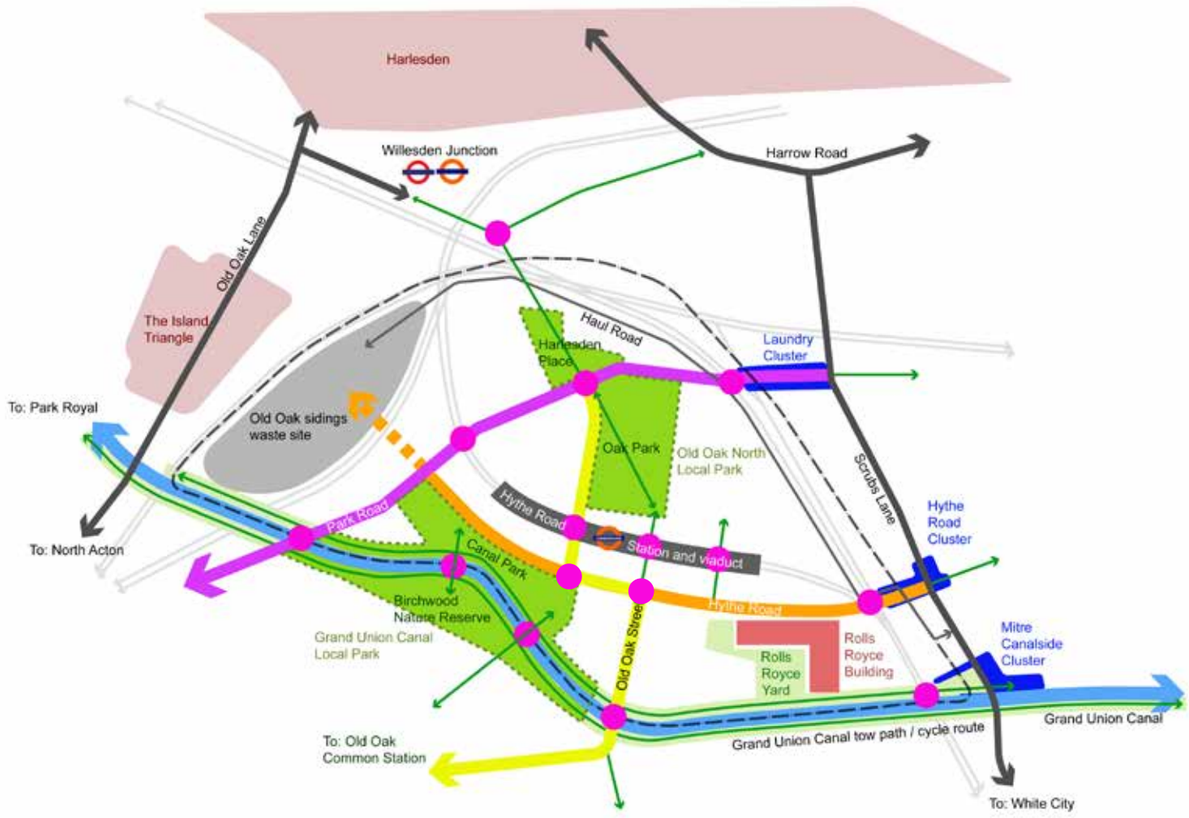


Figure 4 Old Oak North Policy Diagram - Second Revised Draft Local Plan June 2018

Key

- Clusters
- Place Boundary
- Old Oak Street
- Park Road
- Hythe Road
- Potential connection to Old Oak Sidings
- Other key routes
- Walking and cycling routes
- Railway lines
- Local Park
- Publicly accessible open space
- Potential Overground Station
- Existing residential neighbourhood
- Proposed Local Heritage Listing
- New and improved junction / bridge / underpass

3 | Development Framework Principles

3.1 Introduction

3.1.1 Introduction

The DFP sets principles to guide future proposals. These fall under the following categories:

- Connectivity: there is a need to overcome barriers created by infrastructure and create new streets and links that cross railways and the Grand Union Canal. Connections to potential future development areas will ensure that the development at Old Oak North will become the centre of a new highly connected part of London.

- Green Infrastructure: a new high quality green infrastructure network of parks, small open spaces, green streets and elements of urban greening needs to be integrated with high density development. The network needs to meet the needs of local communities, environmental requirements and help address climate change.

- Land use: a range of land uses across Old Oak North are needed to deliver a successful high density place that meets the needs of the development, ensures activation of the public realm and helps to define a series of neighbourhoods by conserving and enhancing local heritage.

- Utilities: the provision of enhanced power, water, waste and telecommunications infrastructure is needed to deliver a sustainable and resilient place.

- Development capacity and building heights : high density development, including tall buildings, will be required to deliver the new homes and jobs targets set for Old Oak Opportunity Area by the Mayor's London Plan.

3.2 Connectivity

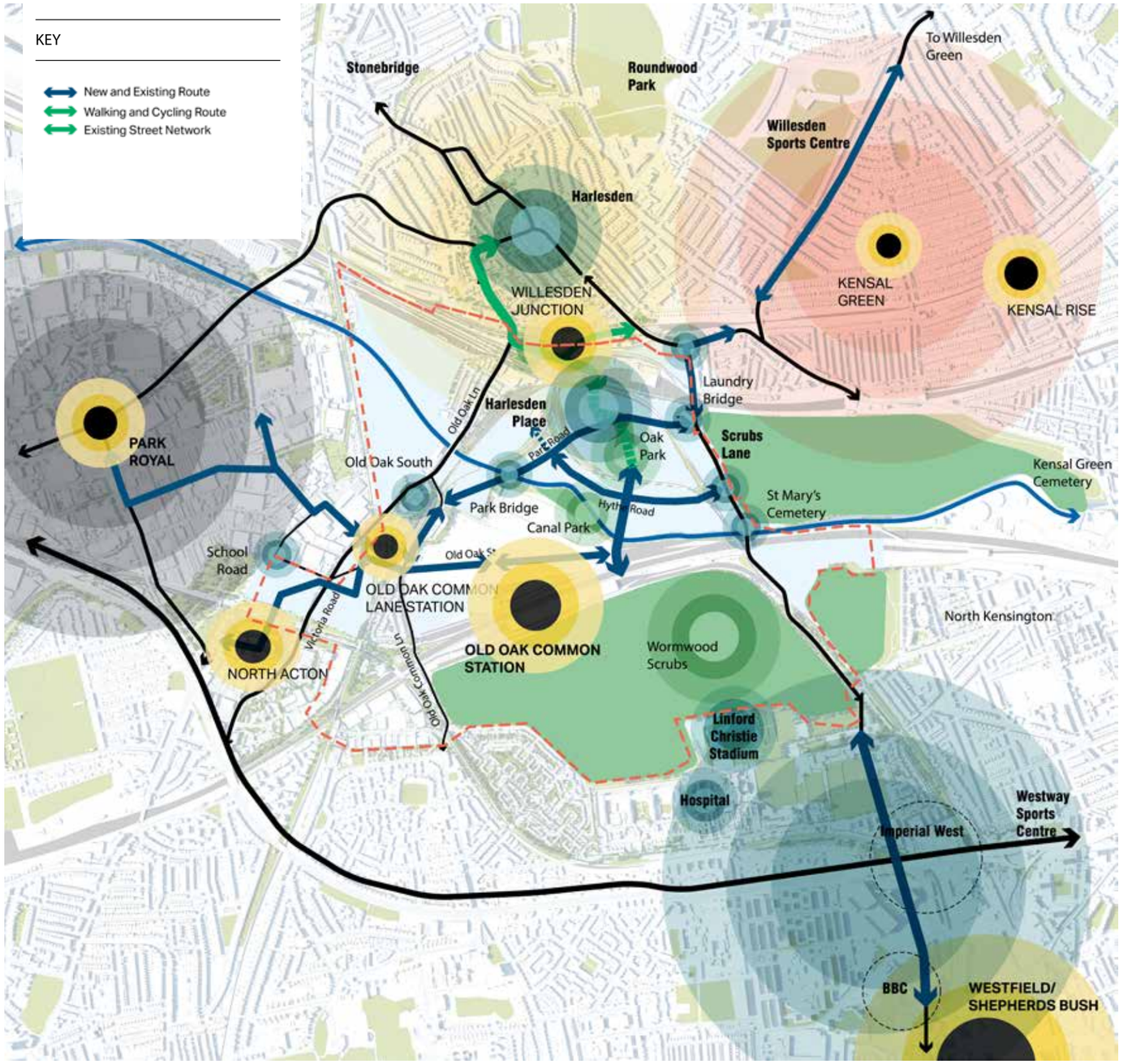


Figure 5 Destinations and connections with surrounding areas from Old Oak North

3.2.1 Connectivity Objective

To deliver Old Oak North as a well-connected piece of city with legible and high quality connections between destinations and surrounding existing neighbourhoods including Harlesden, North Acton, Park Royal, Wormwood Scrubs Park, East Acton and White City.

3.2.2 PR1 Key routes and servicing

Principles and Performance Requirements for Development

Proposals should:

a. contribute to and enable delivery of new transport infrastructure to deliver the highest Public Transport Accessibility Level of 6B in accordance with Principles 2 and 3;

b. contribute to the delivery of excellent permeability across the West London Line, including double-decker buses in accordance with Principle 5;

c. ensure the design and function of all streets contribute to the delivery of Healthy Streets;

d. contribute to the delivery of the following key routes, as shown in figure 6:

   i. Park Road;
   ii. Old Oak Street; and
   iii. Hythe Road, including enabling potential longer-term connections to Old Oak Sidings.

e. contribute to the delivery of the key routes at the topographical levels depicted or alternative appropriate levels to be agreed by OPDC that will deliver a 1:20 gradient or better;

f. enable the retention and enhancement of the Haul Road and existing access from Scrubs Lane to provide access to:

   i. Old Oak Sidings and EMR sites while in operation; and
   ii. development plots for servicing.

g. deliver servicing entrances to ensure, where possible, servicing is provided off street within developments and from streets adjacent to railways. Where this is not possible, a strong justification should be provided;

h. support the implementation of a 20 mile per hour speed limit; and

i. accord with the highways requirements set out in Appendix 5.2

Supporting Text

A high quality, legible and accessible key route network is required to support access to public transport to facilitate high density development. Within Old Oak North, the network is based on three key routes. The network of streets serves to provide a high level of permeability through the site and across the West London Line, ensuring connection between north and south and connections to Willesden Junction, Harlesden, the Grand Union Canal and Wormwood Scrubs.

The location of the key routes are based on the delivery of the preferred option for the West London Line and the proposed Hythe Road London Overground Station on a new two-track viaduct. This is set out in Principle 5. An alternative option, and resultant impacts on the movement network, for the delivery of the West London Line and station on the existing embankment is also set out in Principle 5.

The key routes have been carefully investigated through robust technical feasibility work to ensure that key connections can cross existing railway infrastructure and the Grand Union Canal to provide access to Old Oak North. This includes a detailed assessment of topographical levels required for each street, to overcome severance, cross infrastructure and to achieve a gradient of 1:20 or better. The key routes are:

Key route	Description and role
Park Road	Park Road will be an early key route delivered across Old Oak North, connecting Old Oak Common Lane to Scrubs Lane. This vital piece of infrastructure should be delivered within the first 5 years of the plan period, to significantly enhance east-west connectivity, permeability and PTALs. The street will also be critical for servicing development plots along its length, which have been identified for early delivery and is key to OPDC delivering homes and jobs within Old Oak North during the first ten years of the plan period. Park Road should be designed for all modes, but should not be delivered as a through route for private vehicles.
Old Oak Street	A new north-south connection connecting Harlesden and Willesden Junction Station to Old Oak Common Station and North Acton. South of Harlesden Place the street will be all modes with restricted access for private vehicles. A bridge from Old Oak Street in Old Oak South will link to Wormwood Scrubs to provide a direct connection between this open space and other spaces in the north.
Hythe Road	An existing street, Hythe Road will be enhanced to provide a high quality all modes route that delivers a legible connection between Scrubs Lane and Park Road. Longer-term, there is potential to continue Hythe Road to Old Oak Sidings.

There should be no through traffic along key routes between Old Oak Common Lane/Victoria Road and Scrubs Lane to prevent non-development traffic using the area's street network and to reduce traffic overall within the site. Strategically placed bus gates and other design features in the public realm will allow these routes to provide strategic bus, walking and cycling connections.

All key routes should be designed to adoptable standards for adoption by the Local Highway Authority.

In addition to the key routes, there will be a network of more local streets and lanes. These local streets will provide local access to development plots and will be more pedestrian orientated with reduced traffic levels and speeds. Please refer to Principle 3 for further information.

Development must ensure that Old Oak Sidings can continue to operate effectively during the Local Plan period. Access to the Old Oak sidings site must be maintained while it is operational. Servicing may be required to development plots along the Haul Road to maintain active frontage and reduce impact of service access on Park Road, Harlesden Place and Oak Park frontages.

All streets should follow the Healthy Streets Approach, prioritising sustainable transport modes, pedestrians and cyclists in their design.

Servicing with a high density context needs careful consideration. To help manage impact on the public realm, servicing access between development plots should be coordinated and should be located in less sensitive locations such as away from building entrances, publicly accessible open spaces and from streets running parallel to railways or locations where high levels of amenity cannot be achieved.

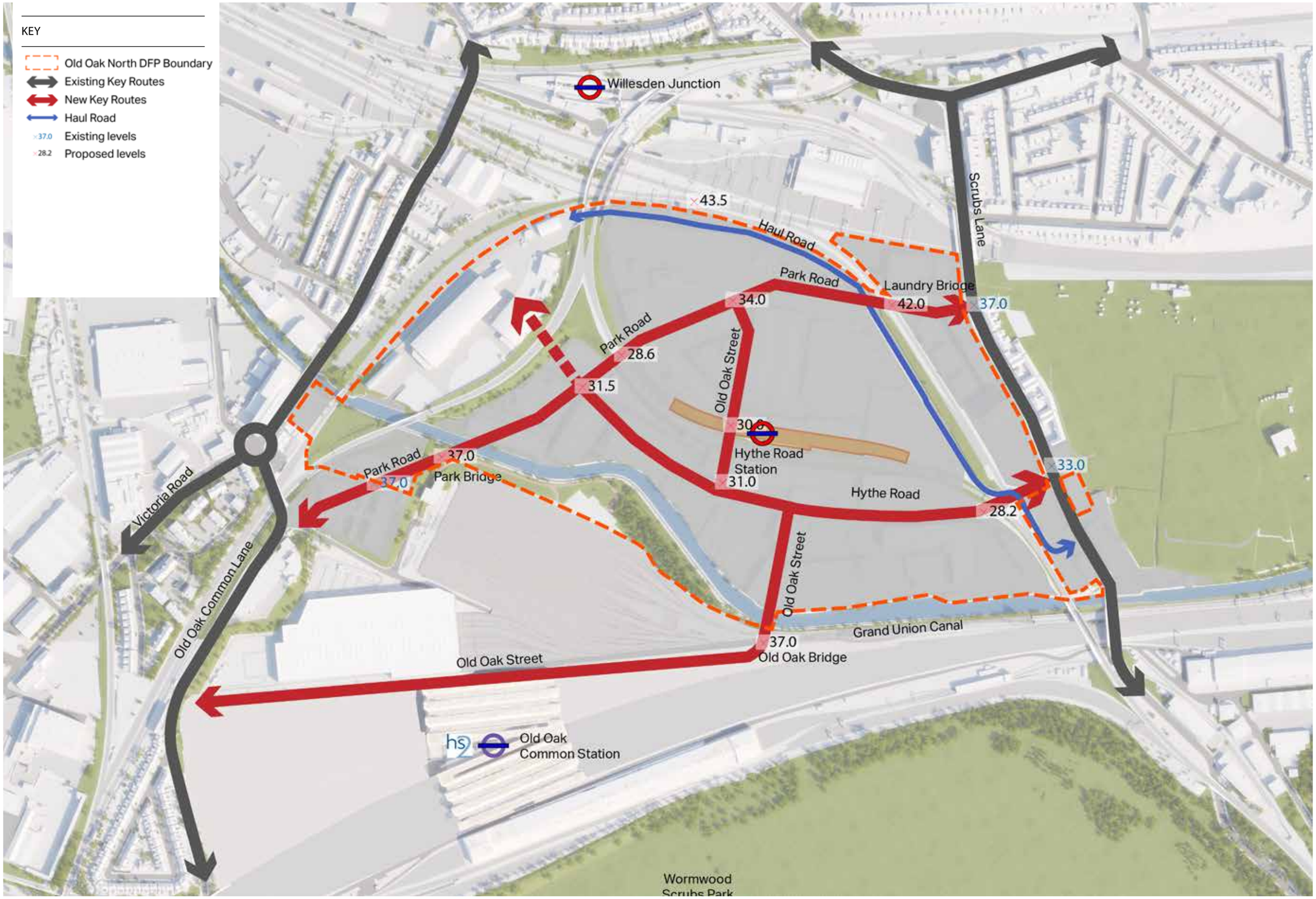


Figure 6 Key routes and servicing

3.2.3 PR2 Bus Network

Principles and Performance Requirements for Development

Proposals should facilitate a high quality and well distributed bus network to support delivering a minimum of PTAL 6B. This will be achieved by delivering:

a. services along key routes, as shown in figure 7;

b. bus stops within:

   i. the general highway; and
   ii. 400 metres of all areas within Old Oak North.

c. appropriate street widths to maintain good bus service journey times;

d. space for bus infrastructure including stands and stops;

e. bus gates to prevent private vehicle through-traffic;

f. appropriate heights for key routes crossing the West London Line to enable movement of double-decker buses in accordance with Principle 5.

Supporting Text

Old Oak North should be a highly connected community, with residents and workers provided choice for how they travel to and from their homes and workplaces. The bus network is a key element in ensuring the best connectivity for the development, and so supports commercial and town centre uses and provides connections between wider communities and Old Oak Common and other stations.

Bus connections through the site will contribute to achieving PTAL 6B across the Old Oak North neighbourhood. These routes have been located to be well distributed across the site, providing access for the wider community to proposed stations, Old Oak Common Station, and town centre uses and social infrastructure within the development.

Bus infrastructure is critical to a high quality bus network. To facilitate this, development needs to contribute to and /or provide space for infrastructure. Bus gates will be important to prevent private vehicle traffic moving between Scrubs Lane and Old Oak Common Lane. Development should facilitate the delivery of appropriate street widths to maintain good journey times for the number of buses proposed in the Bus Strategy, which is a supporting study to OPDC's Local Plan.

TfL have produced this bus strategy, which represents their ideas for servicing the development based on the emerging proposals at Old Oak North. The diagram opposite shows the bus routes within Old Oak North based on TfL's strategy (and based on emerging proposals). This strategy shows that:

– Prior to the completion of Park Road, early development will be serviced from existing bus routes and stops.

– Once Park Road is complete, bus services from the east and west will operate along Park Road and terminate as close to Harlesden Place/ Willesden Junction Station as possible. Lay-over spaces will be required prior to completion of Old Oak Common Station.

– Once Old Oak Common Station is operational, bus services will run through the site to bus stops and lay-over facilities at Old Oak Common Station. A new bus service to the west via Chase Road and Park Royal will be introduced.

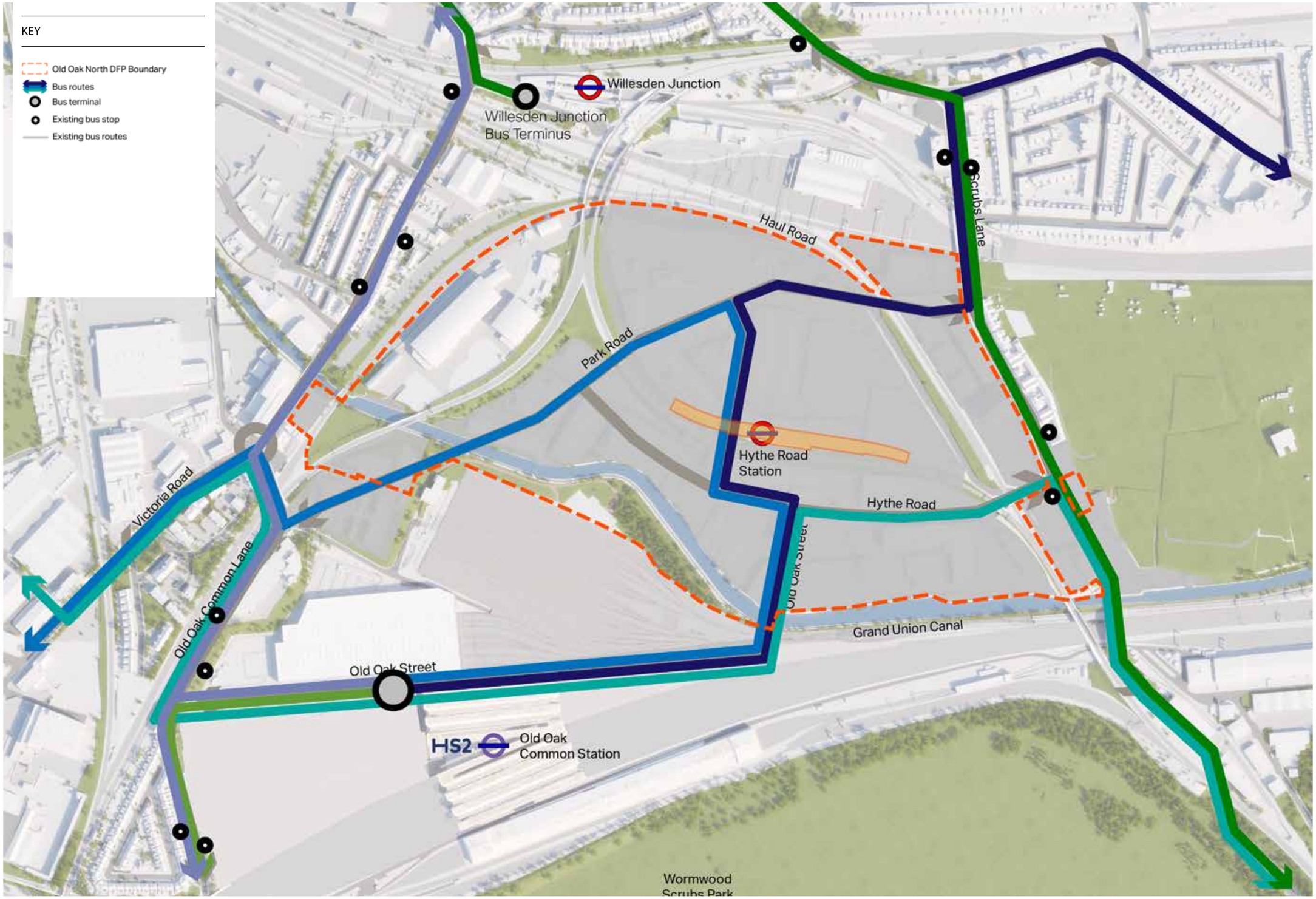


Figure 7 Existing and proposed bus routes

3.2.4 PR3 Walking and Cycling Network

Principles and Performance Requirements for Development

Proposals should deliver and/or contribute to a high quality, accessible, legible and well connected walking and cycling network as shown in figure 9 that delivers:

a. walking and cycling routes that are integrated with the wider street network including key routes;

b. street widths that take account of forecast demand, relevant TfL guidance, high levels of pedestrian comfort and daylight and sunlight requirements for the public realm;

c. cycle routes that are segregated, shared with pedestrians, or on-carriageway, as appropriate for the level of demand;

d. a north-south walking and cycling route from Willesden Junction Station, through Harlesden Place, Oak Park, over Old Oak Bridge and on to Wormwood Scrubs;

e. a north-south walking and cycling route from Harlesden Place, along Old Oak Street, through the Grand Union Canal Local Park and across the Grand Union Canal;

f. a route from Park Road, through the Grand Union Canal Local Park and across the Grand Union Canal;

g. a segregated high quality cycling route along Scrubs Lane, where feasible;

h. the portion of Hythe Road where it is adjacent to the Grand Union Canal Local Park as a shared space, prioritising walking and cycle movement;

i. a continuous east-west walking and cycling route along the north of the Grand Union Canal through Old Oak North to increase east-west connectivity;

j. walking and cycling routes at the topographical levels depicted in Principle 1 or alternative appropriate levels to be agreed by OPDC that will deliver a 1:20 gradient or better;

k. safe publicly accessible lifts, stairs and/or escalators where a 1:20 gradient cannot be delivered;

l. longer-term connections that should not be precluded. These are:

   i. a route from the Grand Union Canal Local Park to Old Oak Common Station.
   ii. a route from Willesden Junction Station to Harrow Road; and
   iii. a continuation of the northern canal walking and cycling route to Old Oak Sidings and Channel Gate.

Supporting Text

Old Oak North should be a highly connected community, with residents and workers provided choice for how they travel to and from their homes and workplaces. Providing a high quality walking and cycling network through the Old Oak North development, which connects to the wider network as well as destinations and communities will promote more sustainable modes of transport as well as health and well-being of residents.

Figure 9 identifies the key walking and cycling routes that developers should deliver, contribute or safeguard for. These routes are derived from a detailed assessment of topography and from other Local Plan supporting studies including the Public Realm, Walking and Cycling Strategy. Current modelling identifies that a segregated cycle lane only on the west of Scrubs Lane may not be deliverable. As such, segregated cycle lanes may need to be delivered on both sides of the street, where feasible and appropriate.

The Grand Union Canal, a key asset of the site, should be opened up to increased pedestrian and cycle activity. Running along both sides of the canal will be the Grand Union Canal Local Park. To support the use of both sides of the park, two walking and cycling crossings are proposed. The eastern crossing will enable longer-term routes to be delivered between Old Oak North and Old Oak Common Station. These bridges will need to be thoughtfully design to contribute positively to the character of the canal and the park.

Connections will vary in vertical alignment to cross existing railway infrastructure. To ensure high levels of accessibility and inclusion, the maximum gradient all connections must achieve is 1:20/5%. However, due to the local level differences, vertical connections (lift sets and stairs/ escalators) may be required at key locations where a gradient less than 1:20 cannot be achieved. These will provide connection from infrastructure to places such as the canal towpaths and to Park Road from Harlesden Place. These connections must be safe for pedestrians all times of the day.

On-carriageway cycle lanes should be provided for within the general traffic stream with streets designed in accordance with the TfL London Cycling Design Standards.

Future connections have been described to ensure that the pedestrian and cycle network can be extended in the future, enabling integration of longer-term development areas with Old Oak North.

Buffalo Niagara University, USA

King's Cross Canalside, London

Viaduct des Arts, Paris

Figure 8 Walking and cycling precedents

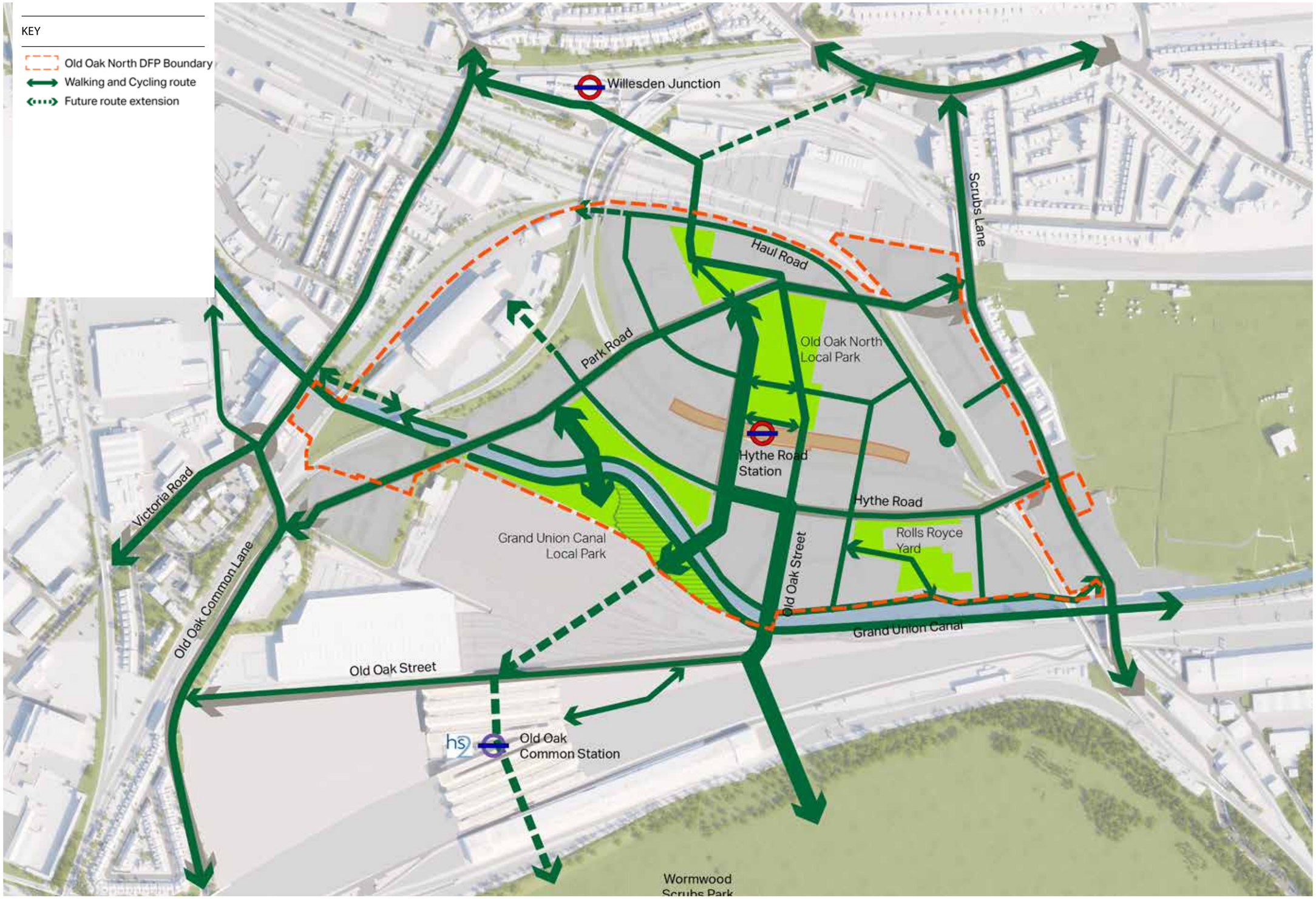


Figure 9 Walking and Cycling Network

3.2.5 PR4-Bridges and Underpasses

Principles and Performance Requirements for Development

Proposals should:

a. deliver and/or contribute to the delivery of crossings infrastructure, as depicted in figure 10:

   i. S01 - Park Bridge
   ii. S02 - Park Road Underpass
   iii. S04 - Hythe Road Viaduct (preferred as 2 track viaduct with station)
   iv. S05 - Hythe Road Underpass
   v. S07 - Harlesden Bridge
   vi. S08 - Laundry Bridge
   vii. S09 - Old Oak Bridge
   viii. S10 - Green Bridge
   ix. S12 - Canal Bridge 1
   x. S13 - Canal Bridge 2

b. deliver the requirements for Park Bridge, Park Road Underpass, Laundry Bridge and Old Oak Bridge as set out in Appendix 5.2;

c. enable integration of utilities infrastructure within the design and delivery of bridges and underpasses; and

d. deliver and/or contribute to the reduction in area of railway embankment slopings, where feasible, to minimise depth of underpasses and optimise development potential.

Supporting Text

To enable access to development within Old Oak North, a series of bridges and underpasses will be required. Fixed connections are those where their locations and alignment have been defined in related evidence base.

See Appendix 5.2 Infrastructure and bridges for further information for Park Bridge, Park Road Underpass, Laundry Bridge and Old Oak Bridge. These are fixed connections which OPDC would expect applicatns to fully accord with. Where the alignment of connections has yet to be finalised, these are referred to as Required Connections in figure 10.

Bridges crossing the canal will need to support the activation of their surrounding areas at street level and at canal level. The Canal Bridges (1 & 2) will need to be subject to further detailed design work to define their exact location and form.

Bridges and underpasses will need to accommodate utilities infrastructure to ensure development is adequately served. This includes energy, heat, SuDs, foul drainage, potable water and telecommunications infrastructure.

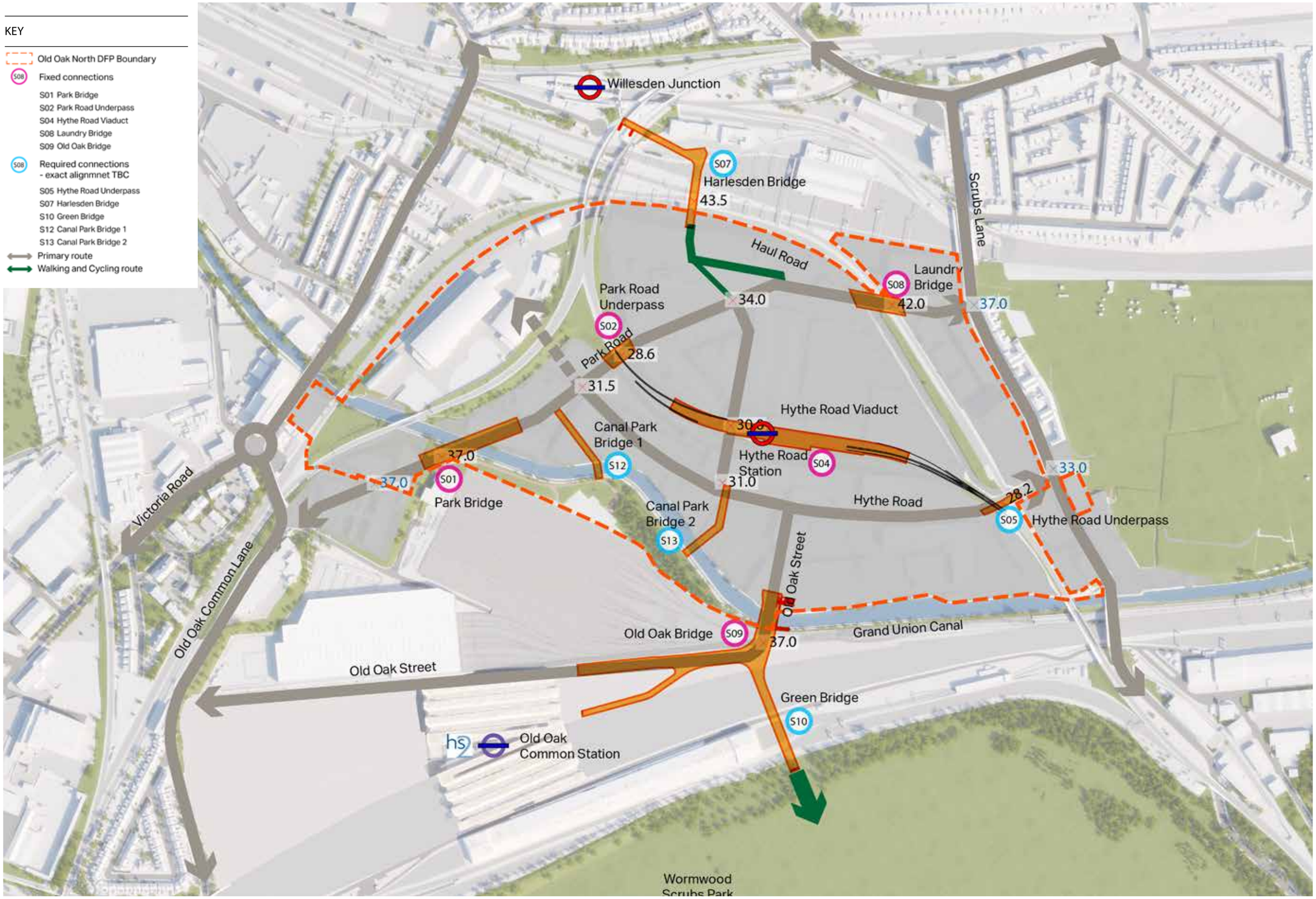


Figure 10 Bridges and Underpasses

3.2.6 PR5- West London Line

Principles and Performance Requirements for Development

Preferred viaduct option

Proposals should:

a. contribute to and enable the delivery of the preferred option for the West London Line and proposed Hythe Road London Overground Station to be located on a new two-track viaduct;

b. ensure that the viaduct and proposed Hythe Road London Overground Station building are of the highest design quality responding to views from Old Oak Street, Old Oak Bridge, Harlesden Place, Oak Park, Hythe Road and Rolls Royce Yard;

c. deliver town centre and/or employment uses under the viaduct;

d. support the delivery of the Hythe Road London Overground Station entrance on to Oak Park or on to Old Oak Street or the street to the north of Hythe Road at the alignment with Old Oak Bridge;

Alternative embankment option

Should the preferred viaduct option be demonstrated not to be deliverable proposals should:

e. where the embankment remains, contribute to the reduction of embankment slopings, where feasible, in accordance with Principle 4;

f. contribute to the delivery of the alternative locations of key routes as shown in figure 15, including the alternative southern access to Scrubs Lane north of the embankment;

g. contribute to the delivery of the alternative locations of key routes at the topographical levels depicted in figure 15 or alternative appropriate levels to be agreed by OPDC that will deliver a 1:20 gradient or better;

Principles common to both options

Proposals should:

h. contribute to and enable the delivery of four clear, direct and legible crossings of the West London Line, as shown in figure 14:

   i. Park Road underpass;
   ii. Old Oak Street underpass;
   iii. underpass at the alignment with Old Oak Bridge; and
   iv. underpass east of Old Oak Street.

i. contribute to and enable the delivery of the Park Road and Old Oak Street underpasses at appropriate heights to enable movement of double-decker buses;

j. deliver Old Oak Street underpass as a green corridor as part of the Green Infrastructure network in accordance with Principle 6, where possible; and

k. deliver active frontages along the length of each underpass.

Supporting Text

It is essential to provide high quality north-south connectivity across the West London Line railway to ensure contiguous development in Old Oak North, provide public transport connections to the wider area and provide accessibility to the Grand Union Canal and between Local Parks.

There are two options to achieve this connectivity. This principle sets out guidance to deliver development for the preferred and alternative option as well as guidance common to development for both options.

All other Principles within this document are based on the delivery of the preferred viaduct option. This option is also used to inform the Local Plan Old Oak North place policy P2.

Preferred option

The preferred option is to deliver the West London Line as a new two-track viaduct. This will deliver the benefits of:

- higher levels of permeability with better legibility and more seamless connections;
- optimised development capacity;
- less groundworks, excavations and changes in topography along key routes;
- the proposed Hythe Road London Overground Station supporting access to public transport and place making;
- a two-track viaduct which will reduce the width of crossings providing more legible connections beneath it;

The station and viaduct will be highly visible elements within the heart of Old Oak North. As such the station buildings (at street level and above at viaduct level) as well as the viaduct should be of the highest design design.

The viaduct enables uses to be located beneath the railway. This will ensure that the Old Oak major town centre is coherent, contiguous and will activate spaces and streets either side of the viaduct. FIgure 11 illustrates this. The viaduct also provides opportunity to deliver workspaces udner the viaduct and the creation of yard spaces or mews to the rear of development. FIgure 12 illustrates this.

Alternative option

Should the preferred option be demonstrated not to be feasible and this is agreed with relevant partners and stakeholders, the alternative embankment option should be delivered.

This would not achieve the same amount of benefits as the preferred option and would result in the following negative impacts:

- Hythe Road Station will not be delivered having a negative impact on local placemaking;
- poorer permeability and weaker legibility between the north and south of the embankment;
- greater change in topographical changes along Old Oak Street;
- lower development capacity;
- a less efficient layout of key routes and requirement for an additional connection to Scrubs Lane (see figure 15);
- need for development plots to removal and rationalise additional areas of railway embankments accordance with Principle 4.

Common principles

For both options, four routes are proposed with two needing to accommodate double-decker bus movement alongside the need for integrating green infrastructure and active frontages.

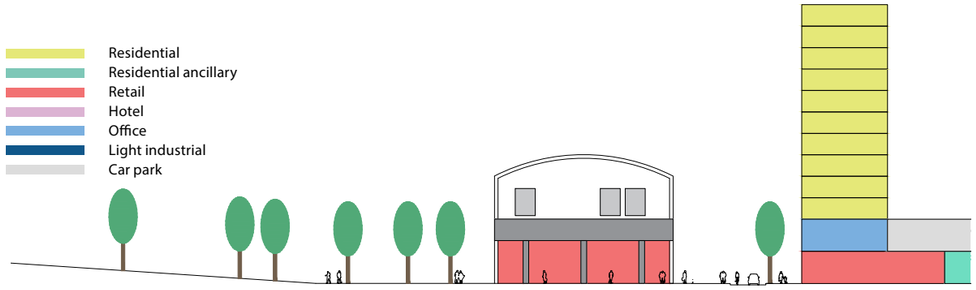


Figure 11 West London Line - Section with Town Centre Uses under

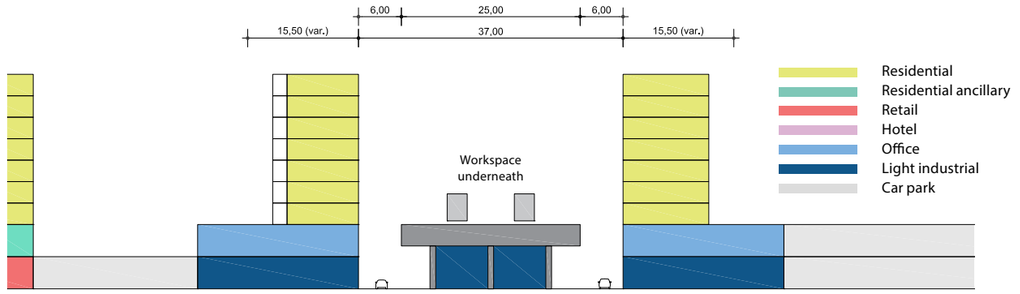


Figure 12 West London Line - Workspaces under Viaduct and Service

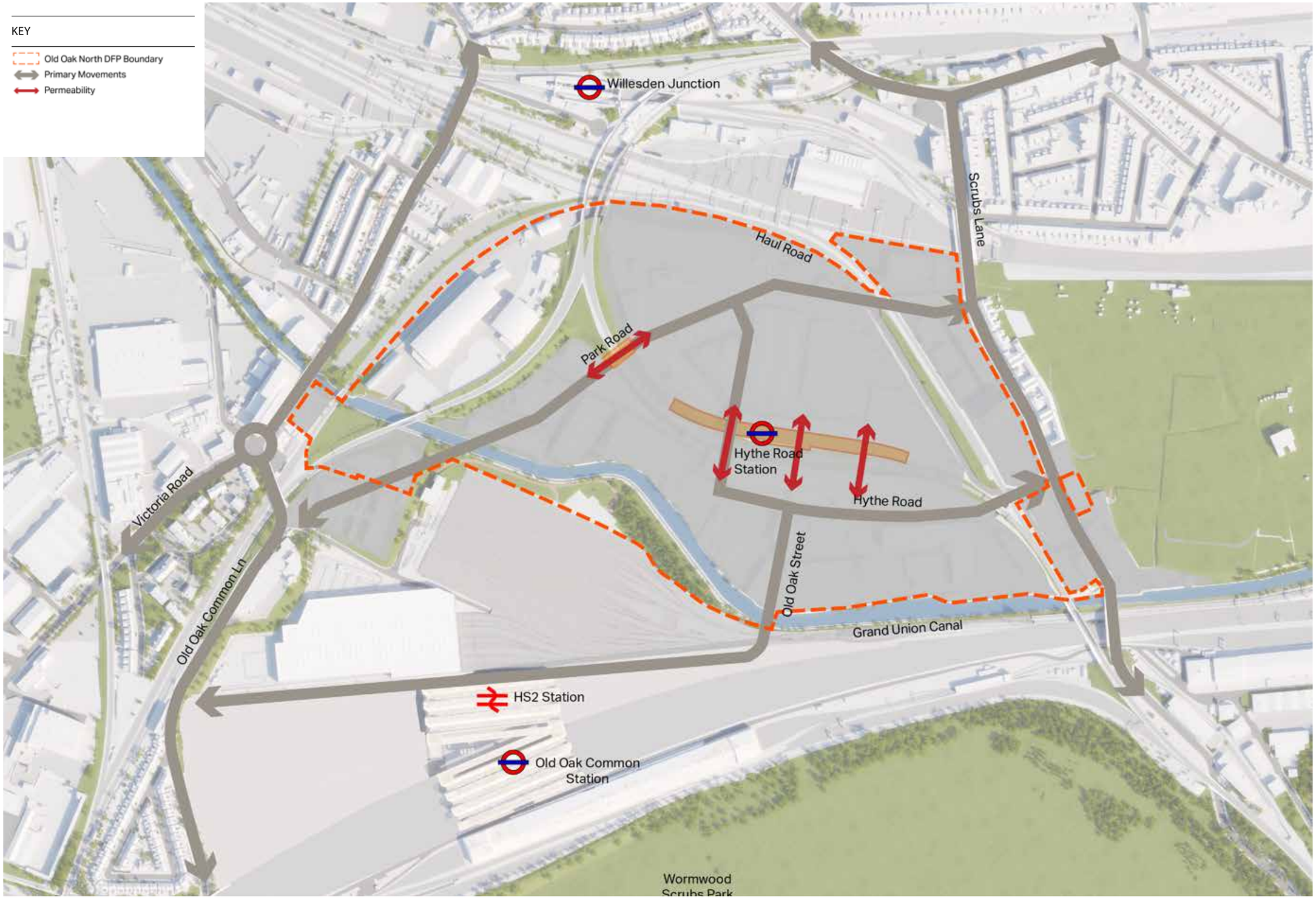


Figure 14 Preferred viaduct option

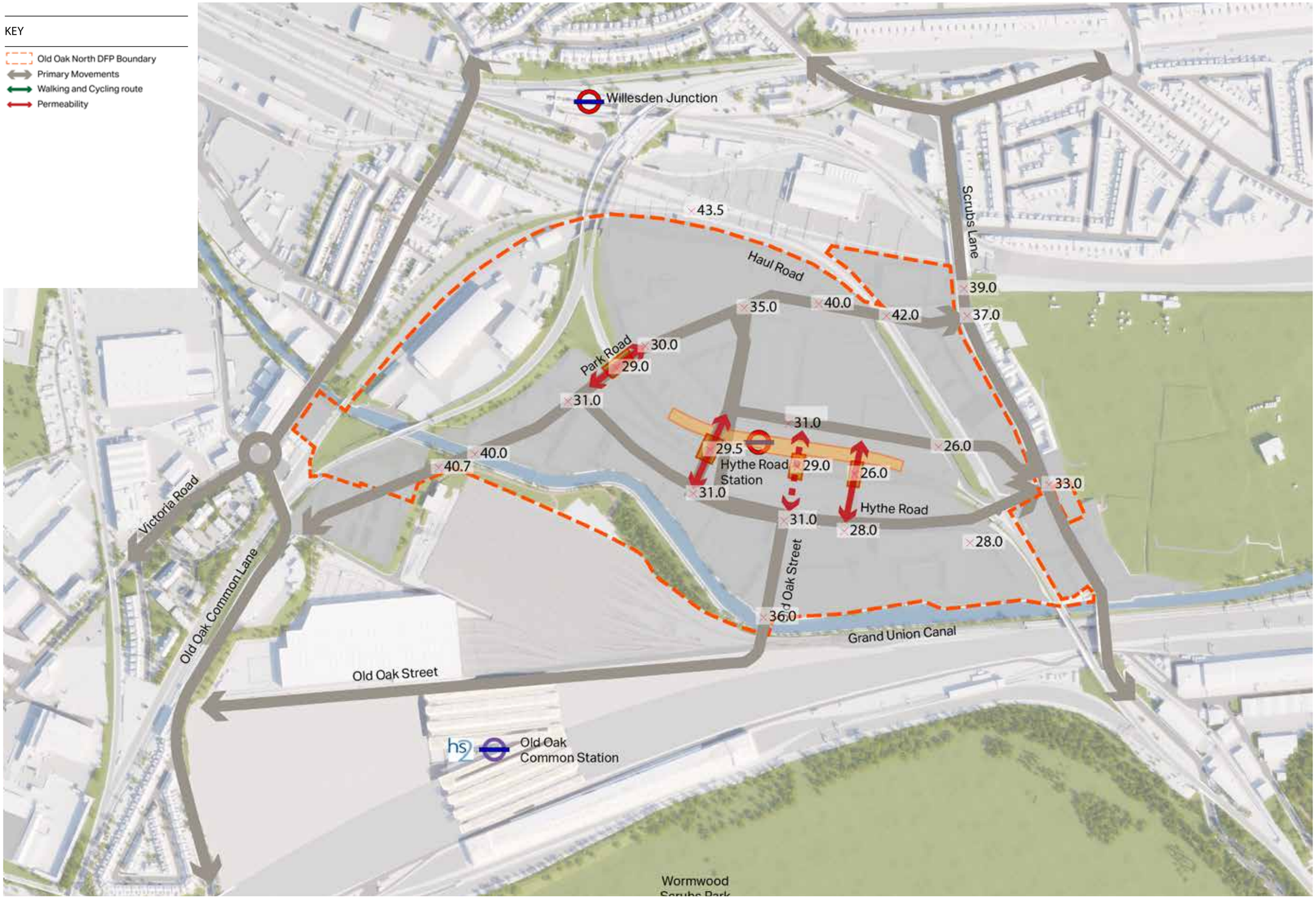


Figure 15 Alternative embankment option

3.3 Green Infrastructure

3.3.1 Green Infrastructure Objective

To deliver a new network of well-connected varied publicly accessible open spaces supporting high density neighbourhoods, local communities and improving local biodiversity.

To help to deliver this objective, figures 16 and 17 set out concepts to help illustrate how open spaces. This can help to support local ecology within Old Oak North to fit into the wider green infrastructure network and the All London Green Grid.

Park am Gleisdreieck, Berlin

Bermondsey Dive Under

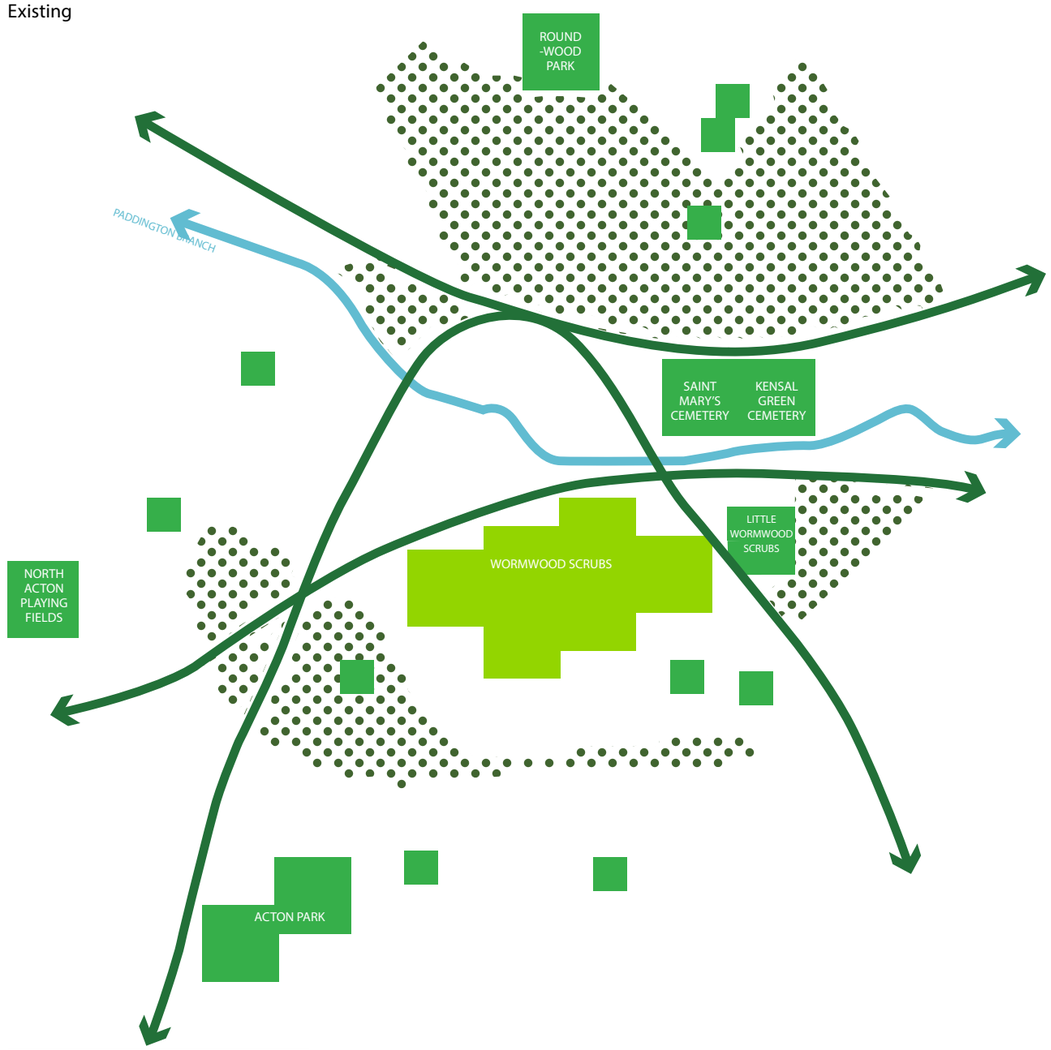
Peckham Coal Line

The Kerb Garden, Stockwell

Patch	Corridor	Stepping Stones	Matrix
– A patch is a relatively homogenous area that differs from its surroundings. – Larger patches contain a higher proportion of interior habitat, which is more likely to contain species which are of conservation importance. – The larger a patch is, the higher the local population of a particular species, and therefore the lower the chance of that species becoming locally extinct.	– A corridor is a linear landscape element which connects patches. – The more corridors in a landscape, the greater the connectivity, and the lower the risk of extinction due to habitat fragmentation. – 'Line corridors' are too narrow to contain interior habitat,	– Stepping stones are landscape elements which individually resemble small patches, but combined offer habitat corridors for more mobile species.	– A matrix is the most dominant and well connected landscape element. For example, in a landscape where forest is dominant, the forest forms the matrix and clearings are patches. – If the dominant landuse is uniformly inhospitable, organisms become isolated in patches of suitable habitat.

Figure 16 Ecology Concepts: Patch, Corridor, Stepping Stones and Matrix

Existing



KEY

- Patch
- Corridor Rail enhanced
- Corridor Canal enhanced
- Green link
- Matrix
- Stepping stone

Proposed

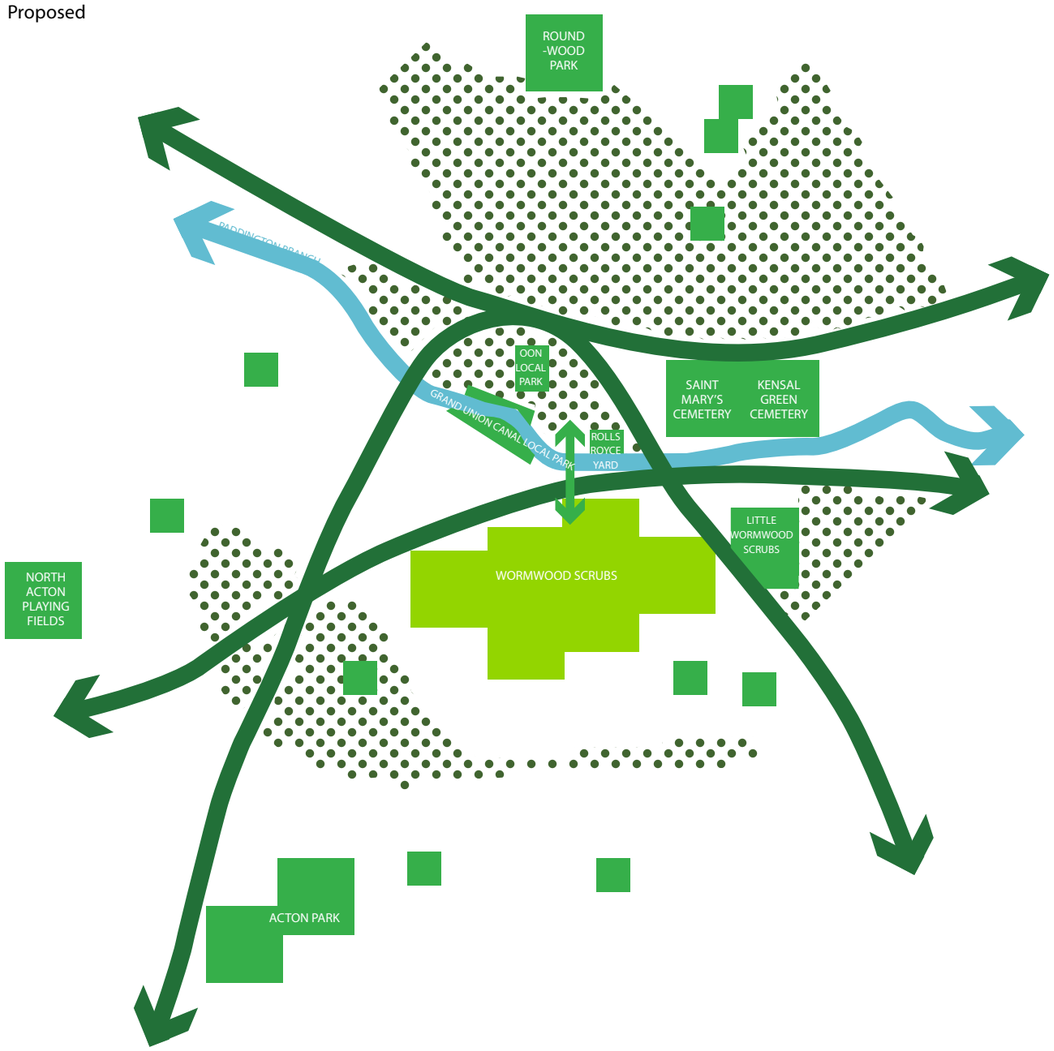


Figure 17 Applying ecology concepts

3.3.2 PR6-Green Infrastructure

Principles and Performance Requirements for Development

Proposals must take an integrated approach to delivering multi-functional green infrastructure that:

a. contributes to the delivery of a diverse network of connected and multifunctional open spaces and green links;

b. is designed to support ecological connectivity and habitat provision, helping to deliver the All London Green Grid and build on the Draft New London Plan's and OPDC's Local Plan Urban Greening Factor;

c. plays a central role within a comprehensive approach to Sustainable Urban Drainage to support water management and improve water quality;

d. is integrated into movement networks connecting new and existing publicly accessible open spaces to support the Healthy Streets Approach and provide green links that improve health and well being and facilitate a modal shift to walking and cycling;

e. integrates elements of green infrastructure and urban greening in publicly accessible open spaces and the public realm where green landscaping cannot be delivered;

f. delivers an overall net increase in ecology, supporting the Mayor's target for development to be biodiversity positive;

g. supports the increase in ecology value and visual amenity of retained railway embankments;

h. delivers planting strategies for private, communal and publicly accessible open spaces;

i. works with topographical changes to deliver a range of green infrastructure character areas such as flower meadows, woodlands, swales and glades.

Supporting Text

Well planned and managed green spaces and public realm have been shown to deliver tangible environmental, social and economic benefits. To reflect the importance of these multiple benefits to communities, green spaces that have been designed to provide functions with societal benefits is known as green infrastructure. This includes opportunities for recreation and active modes of travel can help improve health and well-being, whilst helping to manage storm water, improve air quality and reduce the urban heat island effect. High quality green infrastructure has also been shown to attract investment, increase retail footfall and improve community cohesion.

Many of the benefits from green infrastructure are underpinned by health ecosystems and biodiversity. Urban areas tend to fragment habitats, reducing ecological permeability. Connected green infrastructure networks, as advocated by the All London Green Grid, help enable flora and fauna to distribute through urban environments, making them more biodiverse and resilient. At present there is little ecological value within and around Old Oak.

A generous amount of public realm and publicly accessible, communal and private open space will need to be provided to support communities living at high density. This is especially critical given the high numbers of families who will be living in Old Oak North, as the provision of usable, high quality soft and hard open spaces will be an important measure to enable families to live successfully at the high densities envisaged. Where the focus of public realm or publicly accessible open spaces cannot support comprehensive greening, elements of green infrastructure should be delivered such as green walls, fences and coordinated street planting.

Ecological value within and around the site is very low at present and the development at Old Oak North provides the opportunity to build up the ecological profile of the area. Railway embankments are a key part of the Old Oak character and also provide the opportunity to form strategic ecological corridors. These railway corridors together with the introduction of a series of green spaces and green-streets will form a new green-network across the area which will also integrate Wormwood Scrubs.



Figure 18 Green Infrastructure Precedents

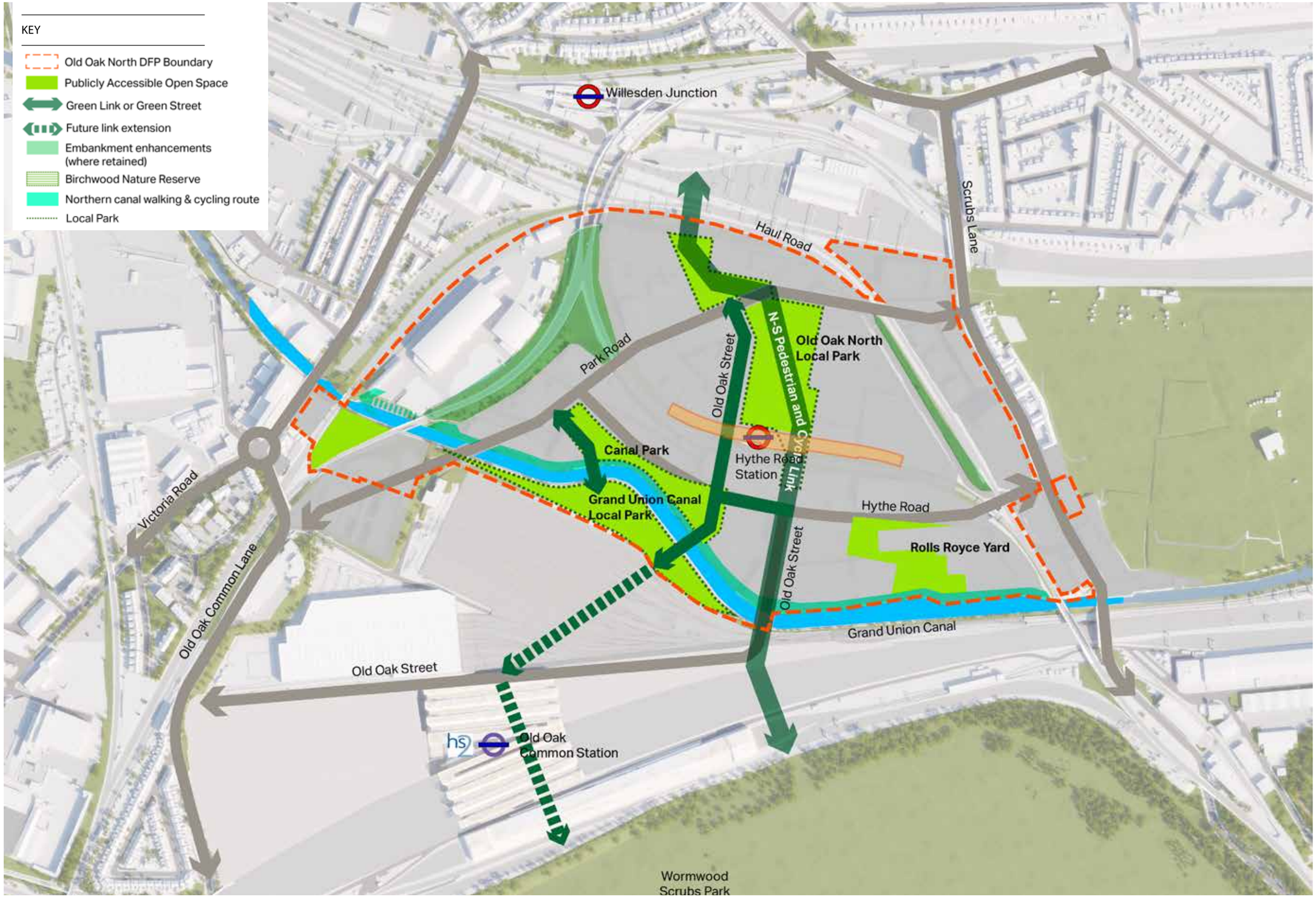


Figure 19 Green Infrastructure including publicly accessible open space

3.3.3 PR7 Publicly Accessible Open Spaces

Principles and Performance Requirements for Development

Proposals must contribute to and/or deliver 30% of developable land as publicly accessible open space. This should include the following publicly accessible open spaces and green links, as illustrated in figure 23:

a. Two Local Parks of two hectares in size located within 400 metres of all development. The Local Parks are:

   i. Old Oak North Local Park, comprised of Harlesden Place and Oak Park in accordance with Principle 7g; and
   ii. Grand Union Canal Local Park, located along both sides of the canal including Canal Park in Old Oak North and an enhanced Birchwood Nature Reserve in Old Oak South in accordance with Principle 7h.

b. Rolls Royce Yard as a smaller publicly accessible open space in accordance with Principle 7i;

c. a series of Pocket Parks or Small Open Spaces throughout Old Oak North to provide additional amenity, doorstep play and other informal activities;

d. a north-south walking and cycle route as a green link between Harlesden Place, through Oak Park to Old Oak Bridge and Wormwood Scrubs;

e. Old Oak Street as a green street between the two Local Parks;

f. a north-south walking and cycling route between Birchwood Nature Reserve and Park Road;

Figure 23 Publicly accessible open spaces and green links

Figure 20 Oak Park & Harlesden Place - Precedents

Figure 21 Grand Union Canal Local Park - Precedents

Figure 22 Rolls Royce Yard - Precedents

Old Oak North Local Park (Harlesden Place and Oak Park)

g. Proposals should deliver an Old Oak North Local Park that:

   i. is read as a single coherent space that uses landscape treatments, design features and local views to integrate Harlesden Place and Oak Park;
   ii. is of the highest design quality that is designed and used in the tradition of London's urban parks;
   iii. is largely green in character within Oak Park and more hard-landscaped in Harlesden Place;
   iv. defines Harlesden Place as an arrival space from Willesden Junction station and Harlesden;
   v. defines Oak Park as space for the community and a focus for residential, community and leisure uses;
   vi. delivers Oak Park as a sloping green space, from Park Road in the north down to the West London Line in the south that integrates levels changes in its design;
   vii. serves the new community to the north of the West London Line and existing communities;
   viii. supports walking, cycling and access to Hythe Road London Overground Station and other destinations;
   ix. is framed by homes and Old Oak's school to the north east and town centre uses to the west;
   x. ensures Harlesden Place mediates levels to delver legible and accessible walking and cycling routes to Willesden Junction and Harlesden.

Grand Union Canal Local Park (Canal Park and Birchwood Nature Reserve)

h. Proposals should deliver The Grand Union Canal Local Park that:

   i. incorporates the Birchwood Nature Reserve and the Canal Park;
   ii. celebrates the character and heritage of the Grand Union Canal;
   iii. conserves and enhances the biodiversity of the Birchwood Nature Reserve and the Grand Union Canal;
   iv. is framed by two walking and cycling bridges across the Canal to integrate both spaces effectively so they read as one park;
   v. integrates OPDC Early Activation projects within the Birchwood Nature Reserve;
   vi. delivers a local view from Park Road, through the space to the Canal and the Old Oak Bridge;
   vii. is supported by proposals adjacent to the park along Hythe Road;
   viii. is activated with a range of canal, leisure and community uses including moorings;
   ix. ensures that Hythe Road, where it borders the Local Park, is designed as a shared surface route;
   x. includes usable canal basins where feasible and connected to the Grand Union Canal;

Rolls Royce Yard

i. Proposals should deliver Rolls Royce Yard that:

   i. celebrates and responds to the industrial character and heritage of the Rolls Royce Building and Grand Union Canal;
   ii. is largely hard landscaped to allow for a range of activities and meanwhile uses;
   iii. supports active uses in moorings making use of this wider part of the Grand Union Canal;
   iv. provides space for a range of activities including spillout space for employment uses, markets, moorings, food and beverage and leisure uses;
   v. provides for appropriate servicing requirements to enable the Rolls Royce Building to operate as a SME and start-up hub.

Figure 24 Illustration of Old Oak North Local Park

Figure 25 Illustration of Grand Union Canal Local Park

Figure 26 Illustration of Rolls Royce Yard

3.4 Land Use

3.4.1 Land Use Objective

To deliver a mixed use and high density place structured by key routes, destinations and the green infrastructure network.

Figure 28 illustrates the urban framework and depicts locations of activity focused at destinations and the Old Oak major town centre. Within and around these locations, a series of characterful, high density neighbourhoods will flourish, supported by a range of social infrastructure.

Portobello Canalside, London

Barking Central, London

Sergels Torg, Stockholm

Federation Square, Melbourne

Figure 27 Old Oak North Land Use Precedents

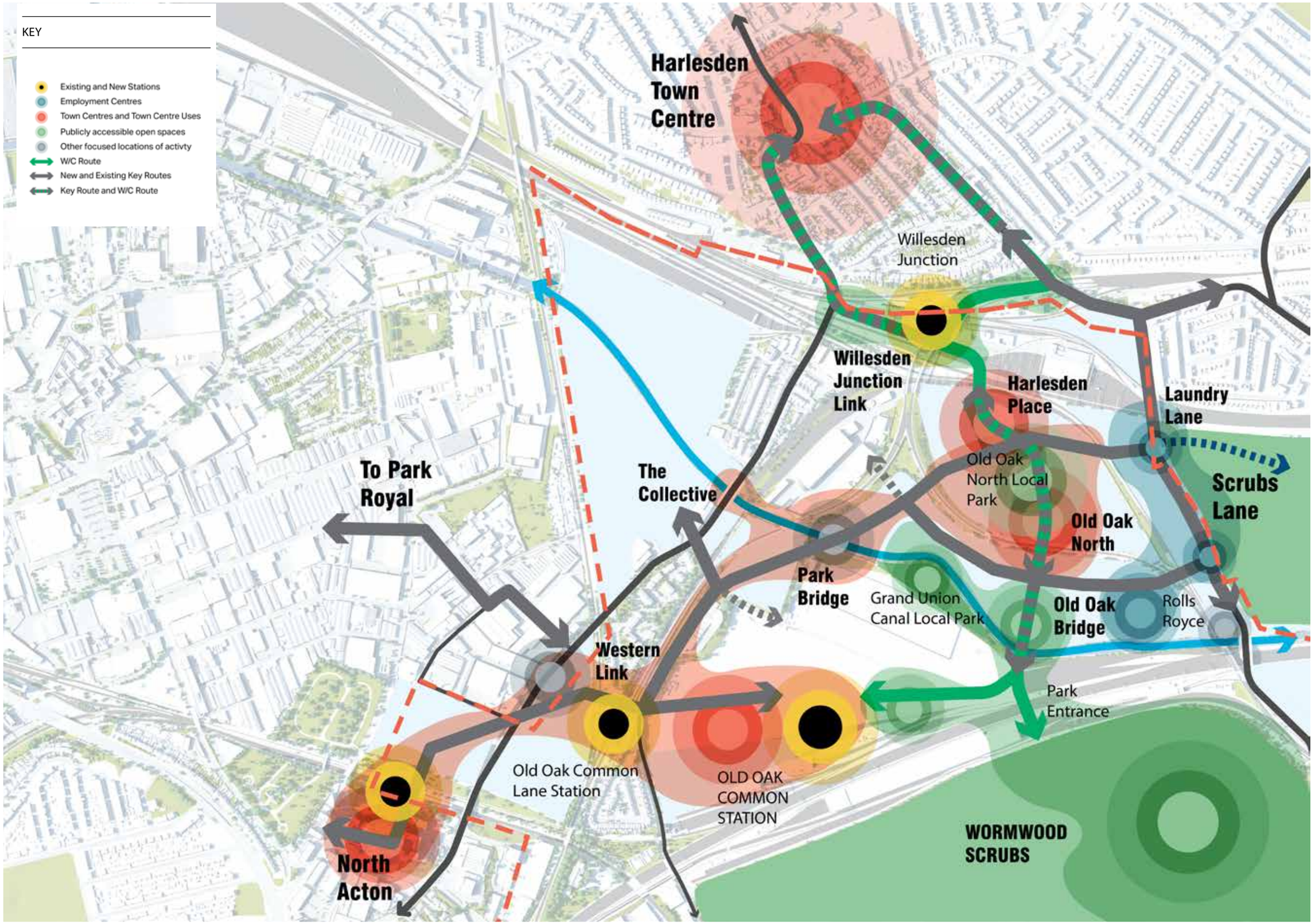


Figure 28 Destinations and broad location of land uses

3.4.2 PR8 Town centre and employment uses

Principles and Performance Requirements for Development

Proposals should deliver a range of land uses at locations that support the creation of characterful neighbourhoods and destinations. These should:

a. contribute to the delivery of a 'layered city' where a range of commerical, community and residential uses are designed, delivered and managed to complement each other both horizontally and vertically;

b. contribute to the delivery of Old Oak major town centre along key routes comprising the following distinctive focus areas:

   i. Harlesden Place and Park Road as an early focus for delivery where social infrastructure and leisure uses support retail uses;
   ii. around the potential Hythe Road London Overground Station where town centre and community uses will complement Oak Park and support access to the station; and
   iii. Grand Union Canal Food and Beverage Quarter around the Canal Park where leisure, cultural, food and beverage uses will be located to help to establish a Cultural Quarter across Old Oak.

c. deliver a range of employment uses comprising a mix of office, light industrial and affordable workspaces;

d. deliver employment uses across Old Oak North including at the following focus areas:

   i. along key route routes;
   ii. within and around the Rolls Royce Building to establish this local asset as a SME and start-up business hub;
   iii. along Scrubs Lane in accordance with the principles set out in the Scrubs Lane Development Framework Principles; and
   iv. along the Haul Road where light industrial uses will be located.

e. ensure the type and location of non-residential land uses respond to topographical changes;

Supporting Text

Development at Old Oak North must deliver a new town centre. This new centre should complement existing centres at Harlesden and North Acton and anticipate its growth to a potential future major town centre focussed at Old Oak Common Station. The centre at Old Oak North should be formed of a series of focused locations of town centre uses distributed through the development. It should be built over time with Harlesden Place forming an early focus for development. Small scale integrated workspace should support start-ups and small businesses and build on the existing activity along Scrubs Lane.

The town centre should focus initially at Harlesden Place and Park Road where community and leisure uses will catalyse and support commercial town centre uses. This location should form an accessible destination for the wider community, bringing communities into the Old Oak North development.

A second town centre location should be formed around the proposed Hythe Road Station.

The canalside should form a leisure and cultural focus for Old Oak North residents and wider communities which can contribute to the proposed Cultural Quarter created across Old Oak.

The Rolls Royce building should form a focus and flagship building for workspace and small business/start up activity and form the centre of a new employment cluster at the canal.

Employment and workspace uses should also be located to reinforce existing employment activity along Scrubs Lane and to activate Park Road.

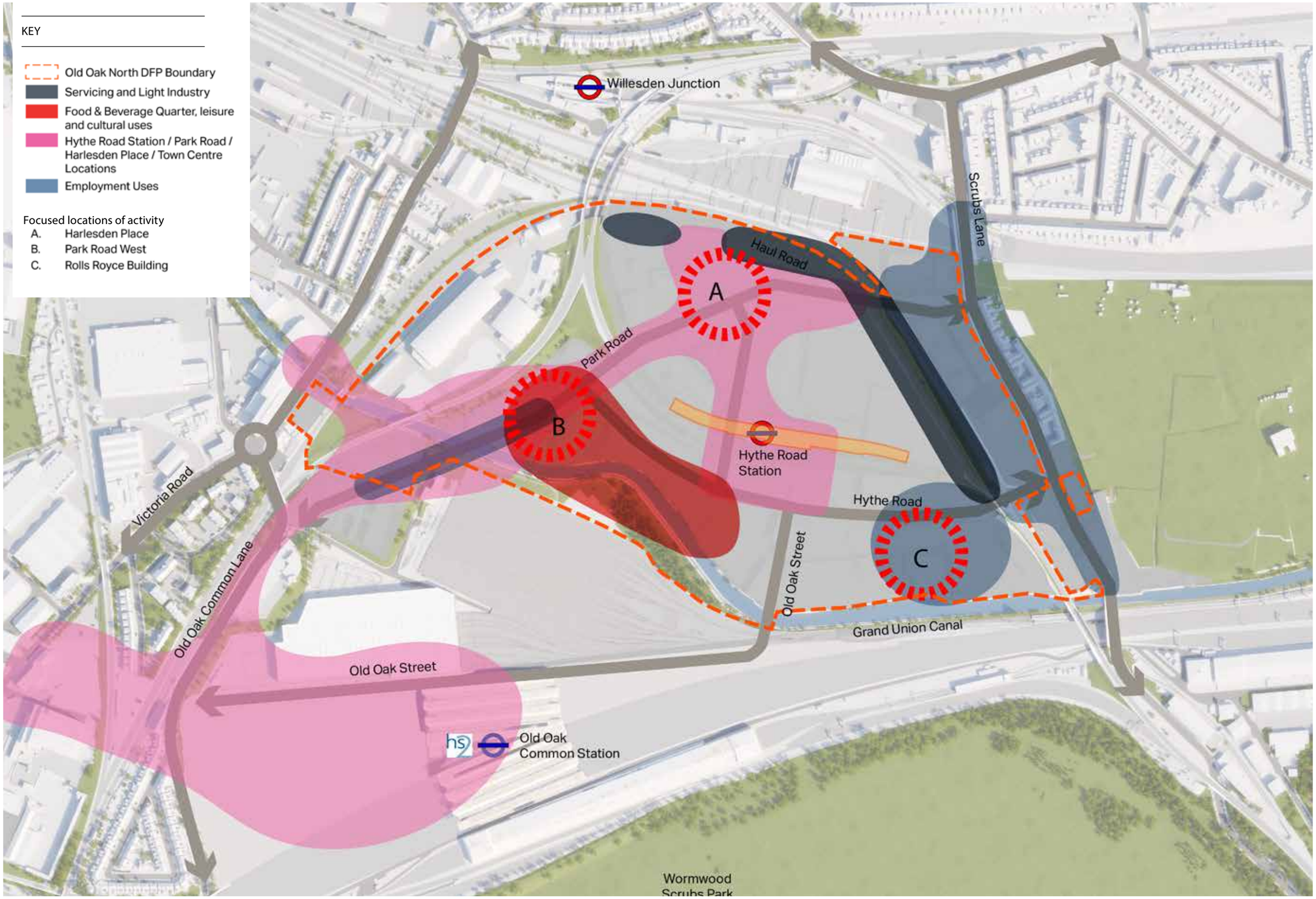


Figure 29 Places and Destinations

3.4.3 PR9-Social Infrastructure

Principles and Performance Requirements for Development

Proposals should:

a. contribute to the delivery of and/or deliver the following social infrastructure:

	Social infrastructure	Size	Date required
i.	One primary school	4 Form Entry	2030
ii.	One supernursery	120 childen (site size of 2,000sqm and floorspace of 800sqm)	Plan period
iii.	One health hub	1088sqm rising to 1,564sqm	2024
iv.	One community centre	2,600sqm	2026
v.	One dedicated Police ward office	50sqm	Plan period
vi.	One public access sports centre including swimming pool	25m swimming pool and sports courts	Plan period

b. focus social infrastructure uses at Harlesden Place, close to public transport access and be located to activate the public realm;

c. deliver the primary school north of the West London Line and provide a direct relationship with Oak Park; and

d. support the co-location of social infrastructure uses.

Supporting Text

Delivering good quality social infrastructure to meet the needs of communities is essential to delivering Lifetime Neighbourhoods. Social infrastructure can also play an important role in activating Old Oak North in the earlier phases of development and help to encourage social interation between new and existing communities.

The social infrastructure requirements are based upon the development capacity and resultant envisaged population of Old Oak North and surrounding areas. Locations are shown indicatively on figure 30. Further information is set out in OPDC's Social Infrastructure Needs Study and Sport Couts and Swimming Pools Study.

Where contributions to delivering social infrastructure will be via in-kind infrastructure or secured by planning obligations, an equitable equalisation mechanism for such provision or contributions will be required by the relevant landowning interests to allow development to proceed.

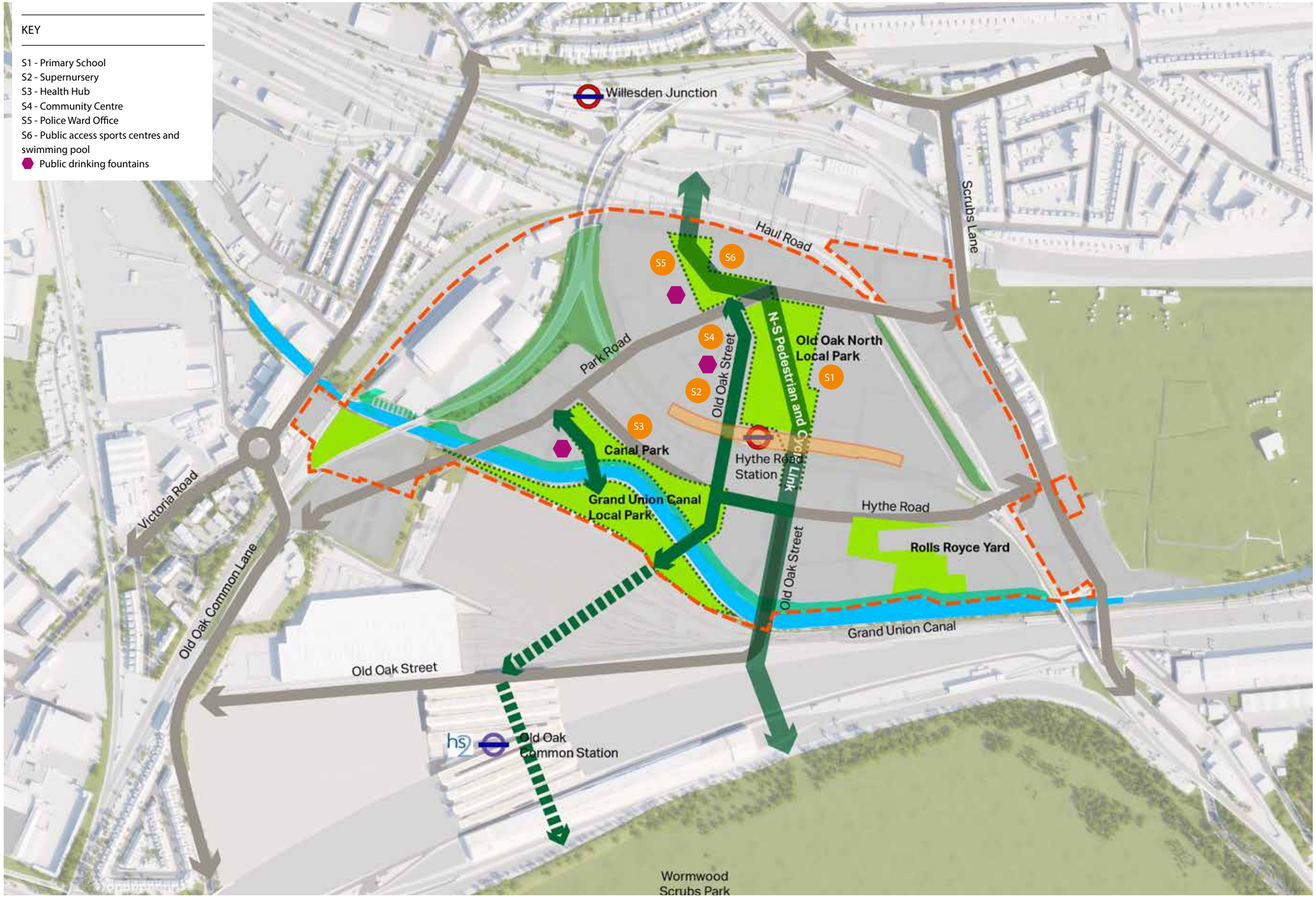


Figure 30 Indicative locations of social infrastructure

3.4.4 PR10 Residential Uses

Principles and Performance Requirements for Development

Proposals should:

a. deliver locally distinctive neighbourhoods, as illustrated in figure 33, with residential uses:

   i. above ground floors in mixed use developments; and
   ii. at ground floor in residential developments.

b. accord with the latest Mayor of London design guidance for residential uses;

c. deliver a mix of housing at a range of affordabilities in accordance with London Plan and OPDC Local Plan policies to deliver a mixed and vibrant community;

d. deliver family housing and London Affordable Rent housing tenures below the 8th floor;

e. deliver residential communal open space:

   i. at different levels including on podiums and roofspace where appropriate;
   ii. that provides residential amenity and is activated through uses including playspace, outdoor fitness gyms, seating and allotments as well as provide space for increased ecology and biodiversity;
   iii. that has appropriate levels of amenity in accordance with OPDC Local Plan policy D6;

e. deliver residential private open space space:

   i. at different levels in accordance with the London Plan;
   ii. as winter-gardens within tall buildings and as inset balconies facing key streets in accordance with the recommendations of OPDC's Energy, Overheating and Daylight in Tall Buildings Study;

f. deliver residential ancillary uses including bike storage, waste management, utilities infrastructure and parking within the envelope of development to prevent negative impacts on the public realm.

Supporting Text

Development at Old Oak North will deliver a high density, highly mixed 'Lifetime Neighbourhood' – one of intensity and complexity. Living at high density should be fully supported by a range of open spaces, accessible amenities, public spaces, community facilities, shops and workplaces, and development should cultivate connections, a quality of life and health and wellbeing. The neighbourhood should be fully inclusive with a range of accessible and affordable housing for a vibrant mix of people, including families.

To contribute to the delivery of a successful neighbourhood, family housing and London Affordable Rent housing should be delivered on lower floors up to the 8th storey of developments.

St Andrews, London

Brent Cross South, London

King's Cross Central, London

Figure 32 Residential Precedents

Figure 33 Potential neighbourhoods

3.4.5 PR11 Heritage and Character

Principles and Performance Requirements for Development

Proposals should:

a. conserve and enhance heritage assets in accordance with OPDC Local Plan policy D8 including:

   i. the Grand Union Canal Conservation Area;
   ii. the Rolls Royce Building that should be restored and reused as an SME and start-up workspace hub to inform the character of the surrounding area; and
   iii. canal bridges; and
   iv. other proposed Local Heritage Listings and historical references that should be incorporated into the design of development where possible;

b. positively respond to the Grand Union Canal, industrial and railway character of Old Oak North by:

   i. using these characters to inform the design of new development, public realm, publicly accessible open spaces and choice and materials and details;
   ii. retaining the curves and hard edges of the Grand Union Canal;
   iii. varying the development frontage line along the canal edge;
   iv. using the character of existing bridges to inform the design of new bridges across the Grand Union Canal;
   v. increasing visual amenity and biodiversity value of railway embankments, where they are retained;
   vi. enhancing the Birchwood Nature Reserve as part of the Grand Union Canal Local Park and a location for OPDC Early Activation projects;

Supporting Text

There are few heritage assets on the site compared to other locations in London but those that do exist are on a large scale and so have great visual impact on the site. Not all local heritage assets will be able to be retained and their loss will be managed in accordance with Local Plan policy D8.

The Grand Union Canal spans the full length of the Old Oak North development site and provides a 1,000m south facing waterside. The Canal is designated as a Conservation Area and the two curves of the canal, with parallel hard edges, are considered highly distinctive. Alongside the canal not many historic buildings remain, but remnants of wharfs and buildings located right up to the water's edge provide an industrial character. A wider section of water is located outside the Rolls Royce Building which could be a special place to be celebrated.

To the east and west along the canal are a set of distinctive Canal bridges where the railways meet the canal. These are celebrations of infrastructure. Old Oak North will be a place of new infrastructure and this ethos should be emulated to inform the design of new pieces of infrastructure throughout Old Oak North.

Railways and railway embankments are a key feature of the Old Oak North – railways are located within and around the edges of the site. These again are on a large scale and will have a great impact within the development.

These can also be very effective in providing for increased ecology and amenity.

The Birchwood Nature Reserve is a woodland in miniature, providing some respite and greenery in an otherwise industrial landscape. The space provides the opportunity for Early Activation projects and succession planting in preparation for future development transforming this into a central space within the wider Old Oak Common masterplan.

The Rolls Royce building is a large building occupying a prominent location along the canal. Its history, size and location represents a huge opportunity for the Old Oak North development.



Figure 34 Old Oak North Existing Site Assets: The Canal, Railway Embankments and the Rolls Royce Building

Figure 35 Heritage and Character

3.5 Utilities Infrastructure

3.5.1 PR12 Utilities infrastructure

Principles and Performance Requirements for Development

Proposals should:

<u>All utilities</u>

a. contribute to and/or deliver utilities infrastructure to meet the existing and future needs of development within Old Oak North;

b. enable the delivery of integrated utilities networks along key routes to minimise impacts from access requirements on the public realm, highways and publicly accessible open spaces;

<u>Heat network</u>

c. contribute to the delivery of a strategically planned heat network comprising:

   i. two primary energy centres located on the west of Park Road and on Scrubs Lane, as shown in figure 36; and
   ii. a network of low temperature hot water pipes.

d. connect to, or safeguard for connection to, the heat network;

e. enable the heat network to make use of local low carbon energy sources including heat pumps to extract heat from local sewers, acquifers and potentially from the Grand Union Canal;

f. not preclude the ability for the heat network to make use of heat generated from any future Energy and Waste plant and air source heat pumps;

g. deliver building heat services to achieve low flow return temperatures at peak and low loads to optimise network efficiency;

h. limit cooling demand and the risk of overheating through appropriate building design;

i. enable access to energy centres and ensure the functioning of centres provides appropiate levels of amenity to surrounding uses and spaces;

<u>Electricity</u>

j. work positively with OPDC and partners in delivering a local electricity network comprising:

   i. a standalone primary electricity substation located on the west of Park Road, as shown in figure 36; and
   ii. a 11kv network.

k. prioritise connecting to, or safeguard for connecting to, the local electricity network;

l. demonstrate early engagement with OPDC and any relevant Independent Distribution Network Operator (IDNO);

m. work with OPDC to quantify anticipated demand;

n. ensure all electricity infrastructure is designed to an adoptable standard;

<u>Gas</u>

o. work positively with OPDC and partners in delivering new gas connections from existing networks to serve the energy centres and commercial uses;

<u>Potable water</u>

p. work positively with OPDC and Thames Water in delivering an integrated potable water network;

q. support the achievement of a target water consumption rate of 105 litres per person per day for residential units;

r. deliver, where possible, rainwater harvesting and grey water recycling, particularly for non-residential uses;

<u>Sustainable Drainage Systems (SuDS) and foul water drainage</u>

s. deliver a range of SuDS including to provide sufficient attentuation storage capacity to ensure the peak rate of surface water runoff generated during rainfall events, up to the 1 in 100 years plus a 40% climate change allowance, does not exceed greenfield run-off rates;

t. where on plot SuDs cannot achieve sufficient attenuation, deliver and/or contribute to strategic SuDS that are incorporated into publicly accessible open spaces and the wider public realm;

u. maximise opportunities for delivering green roofs and walls;

v. contribute to the delivery of new sewers and relocation of existing sewers, including Stamford Brook Sewer, to serve development that accord with relevant Thames Water requirements;

<u>Telecommunications</u>

w. work positively with OPDC and partners to deliver an open access network comprised of fibre optic and wireless broadband technologies that provides linkages with exchanges and properties;

x. connect to strategic area wide telecommunications networks when and where they are available;

y. deliver telecommunications infrastructure in accordance withe the National Joint Utilities Group to an adoptable standard; and

z. support the use of existing and future smart technologies.

Figure 36 Key routes and indicative locations of energy centres and sub-station

Supporting Text

A coordinated utilities network will need to be delivered to facilitate connections of heat, electricity, potable water, foul water drainage and telecommunications services to all uses. Gas services will also need to be provided to the energy centres and commercial uses.

Heat network

In line with the Mayor's ambition for opportunity areas to plan heat networks, OPDC are working to deliver a strategically planned heat network in Old Oak North served by local, low carbon heat sources. The network will be designed to operate with a primary flow temperature of 70oC and return of 40oC.

It is currently anticipated that there will be two energy centres. One should be located on the western edge of Old Oak North on Park Road to make use of heat generated by existing sewers and one located along Scrubs Lane. The location of energy centres may vary depending on the phasing and demands of development. It is envisaged that the energy centres will initially operate independently, serving local networks in the east and west but will be interconnected once the necessary key routes are established.

OPDC's Utilities Study demonstrates that the OPDC area has access to a number of low carbon heat sources including heat from the Grand Union Canal, heat from sewage networks, aquifers and potentially heat from Energy from Waste (EfW). The work has also demonstrated that the available low carbon heat sources could meet much of the baseload heat demand. Any heat network would need to accord with guidance set out in OPDC's Infrastructure Delivery Plan (IDP).

OPDC anticipate peak and standby loads to be served from alternative sources, including gas boilers, electric boilers or additional on site renewable sources.

Electricity

Old Oak North falls across the franchise boundary between UK Power Networks (UKPN) and Scottish and Southern Electricity Networks (SSE). There is sufficient electricity supply in these existing networks to serve sites coming forward from 2018-2021, however, after this period new infrastructure is required. The electrical demand for sites coming forward from 2022- 2033 is forecast to be circa 35MVA. To serve this demand a new electricity substation is required in Old Oak North with a new connection from a Distribution Network Operator (DNO). The substation is currently identified for delivery in the west of Old Oak North on Park Road. OPDC will be exploring the potential to work with an IDNO to manage the local electricity network.

Gas

It is anticipated that the forecast gas demand for the two energy centres serving Old Oak North are circa 52 MW. OPDC are working with the existing gas network provider in Old Oak North to identify potential trigger points for reinforcement works and the requirement for cross connections within the development.

Potable water

OPDC are currently working with Thames Water to identify strategic routes for potable water supplies serving each development plot. OPDC are also working with Thames Water to identify trigger points for any reinforcement required and cross connections within the development.

Sustainable Drainage Systems and foul water drainage

OPDC's Environmental Standards Study provides high level guidance for the delivery of water management systems including SuDS. Further investigation has identified that strategic SuDS will be required to ensure Old Oak North does not exceed greenfield run-off rates.

Telecommunications

It is currently anticipated that OPDC will facilitate an open access network of strategic duct infrastructure in Old Oak North through the provision of individual ducts and chambers, located beneath key routes.

3.6 Development Capacity and Building Heights

3.6.1 Development Capacity and Building Heights Objective

To contribute to the delivery of the Mayor's London Plan new homes and jobs targets for the Old Oak Opportunity Area. To deliver high quality and high density development at a range of heights including tall buildings.

The London Plan sets a target to deliver 24,000 new homes and space for 55,000 new jobs within the Old Oak. Old Oak North represents a significant opportunity to contribute to the delivery of these targets.

To meet these targets, high quality and high density development will be required over a series of development plots. Figure 39 illustrates these plots. Densities will result in a range of building heights, including tall buildings.

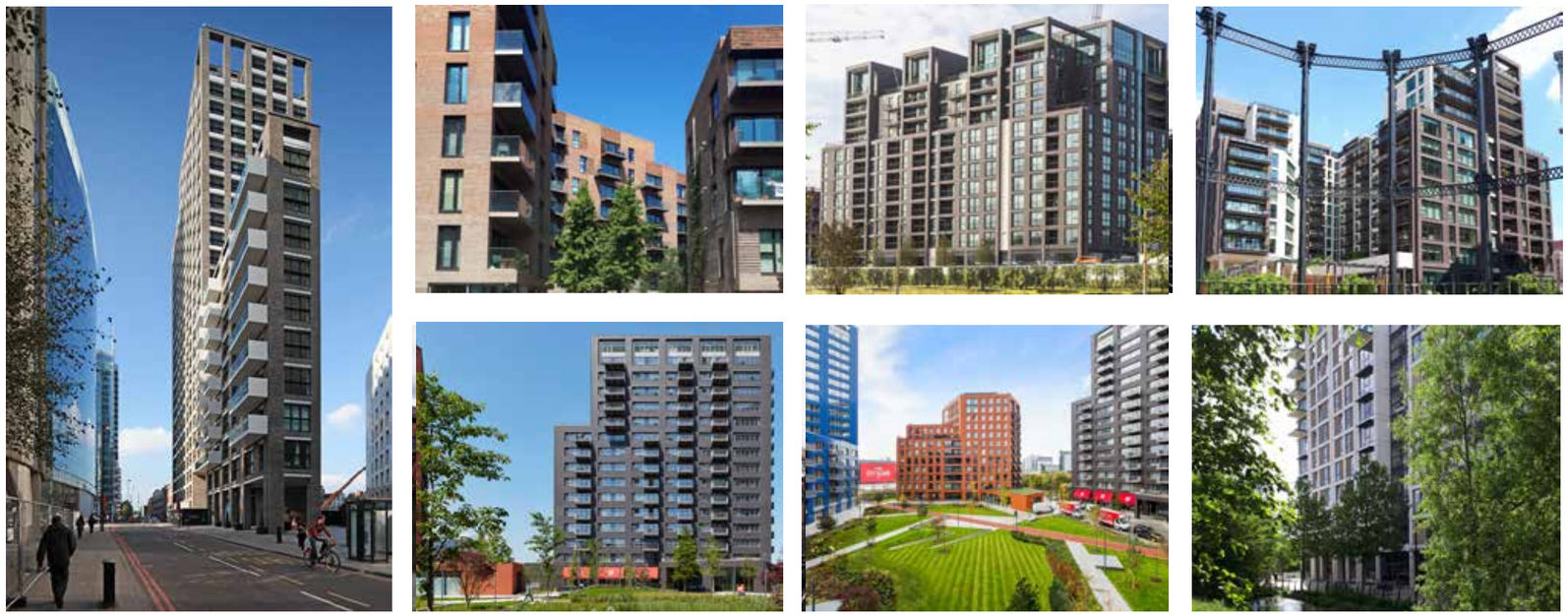


Figure 38 High density development precedents

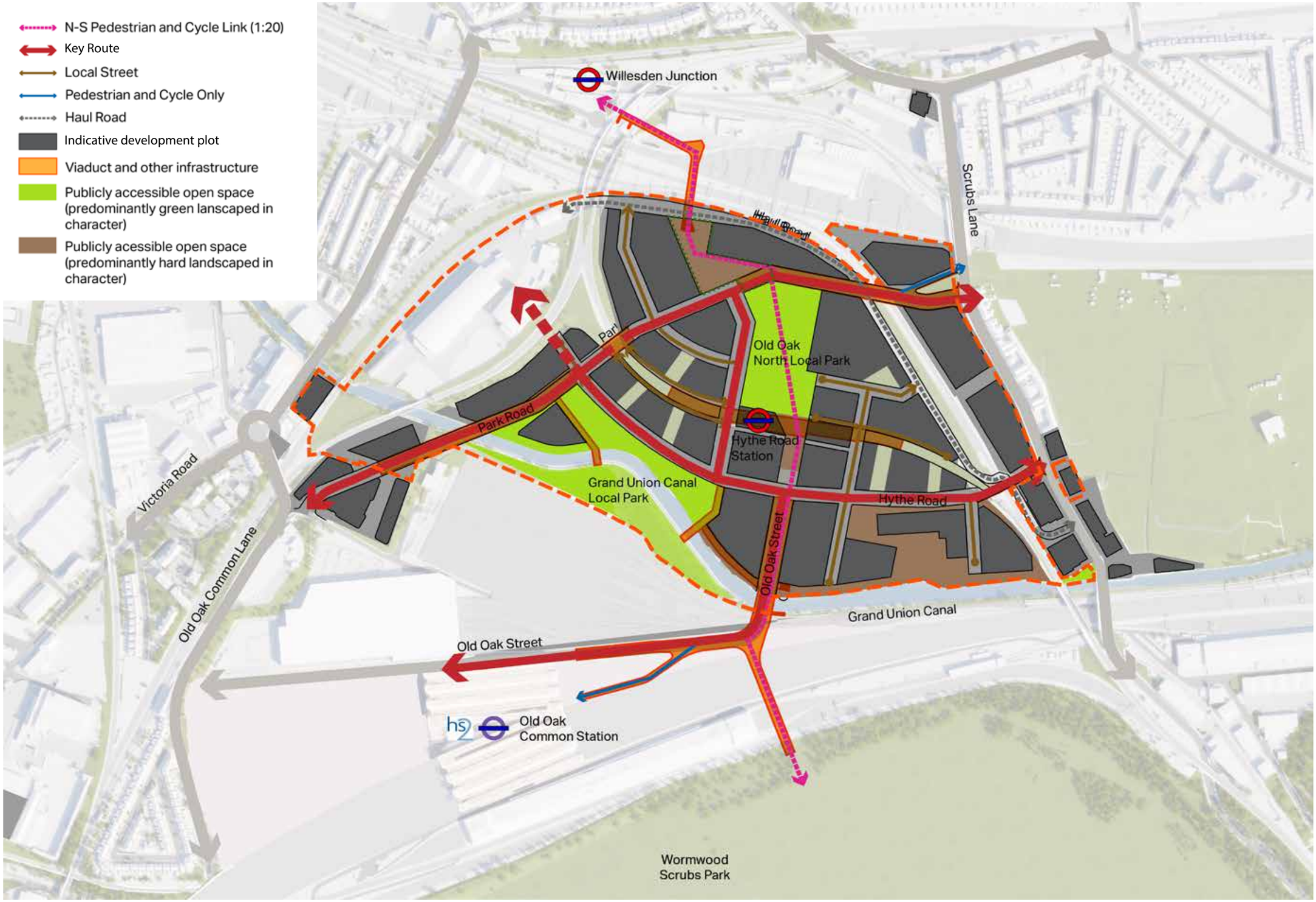


Figure 39 Development plots

3.6.2 PR13 Development Capacity

Principles and Performance Requirements for Development

Proposals should:

a. contribute to the total delivery of 7,300 new homes and 3,900 new jobs within the place of Old Oak North; and

b. contribute to the delivery of a minimum of 6,500 new homes and 3,600 new jobs within the place of Old Oak North during the Local Plan period.

Supporting Text

Development capacity

A rigorous development capacity assessment process has been undertaken to define the homes and economic floorspace capacity of Old Oak North to ensure it optimises development to meet the targets set out in the Mayor's London Plan.

This assessment is informed by a range of factors including:

- the future excellent Public Transport Accessibility Levels provided by Old Oak Common Station, enhancements to Willesden Junction Station, the potential Hythe Road Station and a new bus network;
- the future movement network;
- London Plan and Local Plan policies;
- principles set out in this document; and
- environmental, economic viability and social considerations.

This identifies a total development capacity of 7,300 news homes and 73,000 sqm (Net Internal Area) of economic floorspace. This floorspace includes retail, leisure and employment floorspace to generate an indicative total of 3,900 new jobs.

The development capacity assessment for the plan period is also reflected in OPDC's Development Capacity Study (June 2018).

Development phasing

Phasing of development is reliant on delivering new and enhanced key routes and supporting infrastructure. This is expected to be delivered initially along Park Road from the west and along Hythe Road from the east.

Development densities

The development capacity of Old Oak North will result in the delivery of a range high densities across this place.

The average density will be 600 units per hectare. This will vary across the place in response to public transport access, sensitive locations and site specific circumstances.

These densities are of a scale that have only recently been delivered in London and will contribute to the form of a new London typology. It will be critical that the design of development and publicly accessible open spaces are of the highest design quality and supported by a range community and commercial uses. The principles in this document have been developed to deliver these aspirations.

3.6.3 PR14 Building Heights

Principles and Performance Requirements for Development

Proposals should deliver a range of building heights including:

a. an average shoulder and/or podium height of 8 to 12 storeys across Old Oak North;

b. a generally lower average shoulder and/or podium heights of 6 to 8 storeys fronting on to the Grand Union Canal;

c. appropriate heights responding to the existing residential communities and the Grade I Listed Kensal Green Cemetery Registered Park and Garden;

d. increased heights near to railways to help address impacts on the amenity of the public realm and residential uses;

e. tall buildings across Old Oak North with a focus at locations marking places of high levels of activity and in accordance with all relevant development plan policies, supplementary guidance and material considerations.

Supporting Text

The development capacity and resultant densities defined in Principle 13 will deliver a range of building heights. Locations of high levels of activity include those along key routes, at stations and other destinations within the Old Oak major town centre.

Figure 40 illustrates how these heights could be delivered on an indicative development plot.

A tall building is defined within OPDC's Tall Building Statement as being above 15 storeys or above a minimum of 48 metres above ground level.

Guidance for building heights for sites along Scrubs Lane is provided within the Scrubs Lane Development Framework Principles.

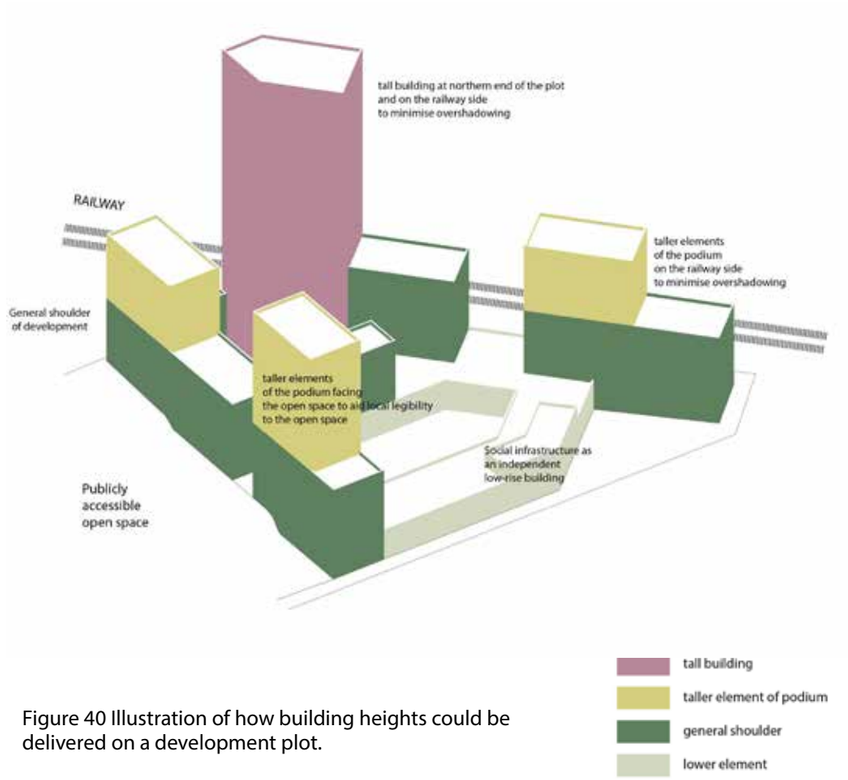


Figure 40 Illustration of how building heights could be delivered on a development plot.

4 | Illustrative Development Framework

4.1 Illustrative Development Framework for Old Oak North

4.1.1 Overview

This section presents an Illustrative Development Framework that demonstrates how the principles could be brought together to establish a thriving and successful place at Old Oak North.

The Illustrative Development Framework is framed by the fixes and required elements depicted in figure 41. These are used to shape the concept diagram for the Illustrative Development Framework.

The concept diagram is shown in figure 42 and depicts key routes, publicly accessible open spaces and locations of focused activity within Old Oak North. This has been used to inform the Old Oak North Place diagram in the Local Plan.

This overarching approach is then further refined with the principles on figure 43 to show the Illustrative Development Framework.

The Illustrative Development Framework defines development plots, movement networks, locations and function of publicly accessible open spaces and topographical information to set out how Old Oak North could be developed to accommodate the development capacity set out in principle 13.

The principles are:

- 1 Key routes and servicing
- 2 Bus network
- 3 Walking and cycling network
- 4 Bridges and underpasses
- 5 West London Line
- 6 Green infrastructure
- 7 Publicly accessible open spaces
- 8 Town centre and employment uses
- 9 Social infrastructure
- 10 Residential uses
- 11 Heritage and character
- 12 Utilities infrastructure
- 13 Development capacity
- 14 Building heights

Fixed bridges and underpasses are:

- 01-Park Bridge.
- 02-Park Road Underpass.
- 04-Hythe Road Viaduct (preferred as a two-track viaduct, with station).
- 08-Laundry Bridge.
- 09-Old Oak Bridge.

Other required bridges and under passes are listed below. The exact alignment (vertical and horizontal) of these are not fixed and can vary:

- 05-Hythe Road Underpass.
- 07-Harlesden Bridge.
- 10-Green Bridge.
- 12/13-Canal Bridge 1 and 2.

Fixed Routes are:

- Park Road – including vertical and horizontal alignment and the critical levels.
- Hythe Road (eastern alignment).

Required routes are:

- Hythe Road (western alignment).
- Old Oak Street.
- A north-south pedestrian and cycle route at no more than 1:20 gradient to provide accessible link between Harlesden Bridge and Old Oak Bridge.
- Future connection from the western end of Hythe Road to the Old Oak siding site.

Required Infrastructure are:

- Energy Centre (west) – located along Park Road and close to the sewer alignment.
- Energy Centre (east) – located along Scrubs Lane.
- Primary Sub Station – located along Park Road and close to Energy Centre West.

Other requirements are:

- The three publicly accessible open spaces are a requirement, in the locations set out, but their exact alignment are to be confirmed. The two Local Parks should achieve an area of 2ha.
- The Rolls Royce building should be retained and refurbished.
- Social infrastructure including a primary school, a supernursery, a health hub, a community centre, a dedicated Police ward office and a public access sports centre including swimming pool.

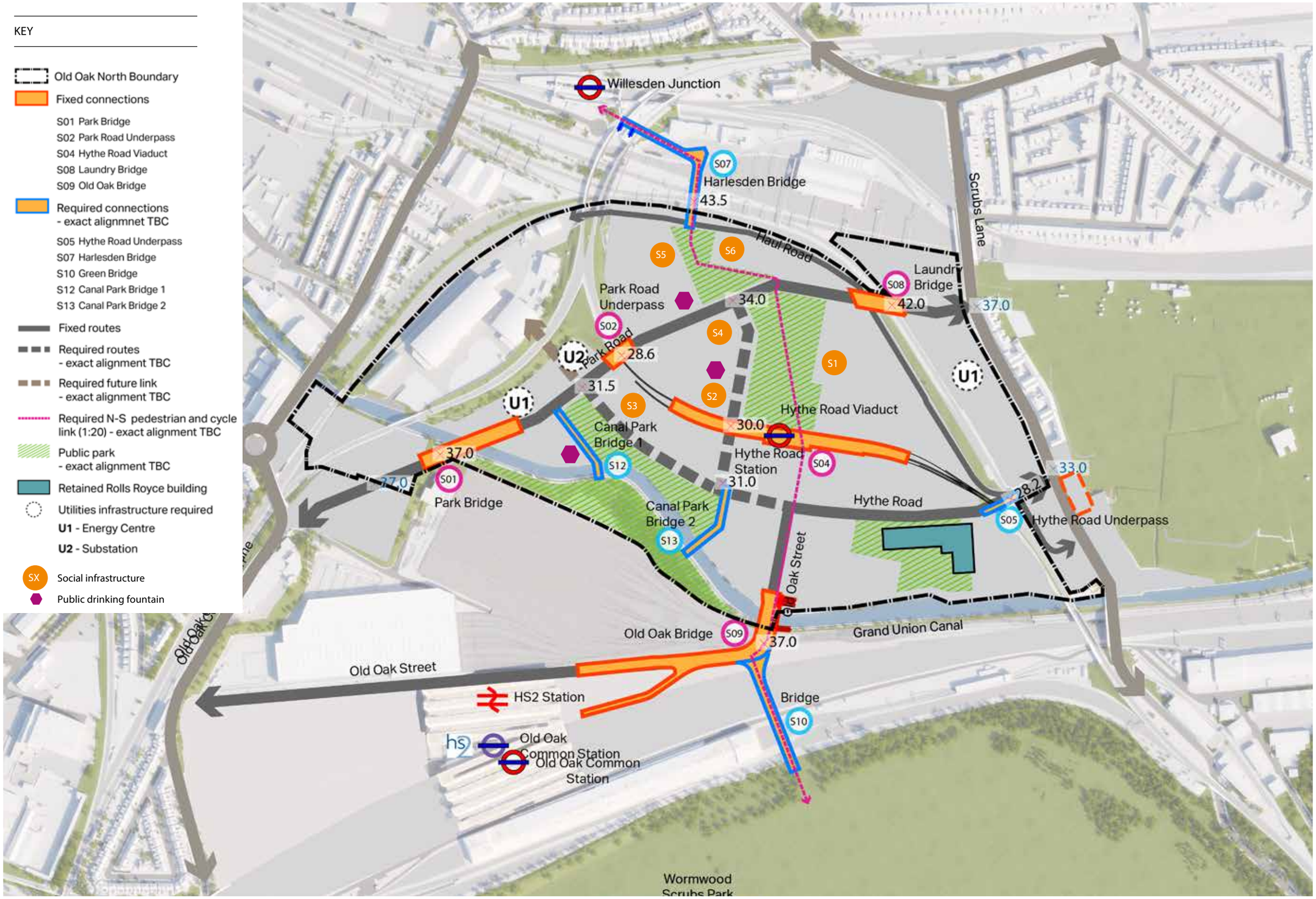


Figure 41 Fixes and required elements identified from the principles

4.1.2 Concept diagram

The concept diagram depicts key routes, publicly accessible open spaces and locations of focused activity within Old Oak North.

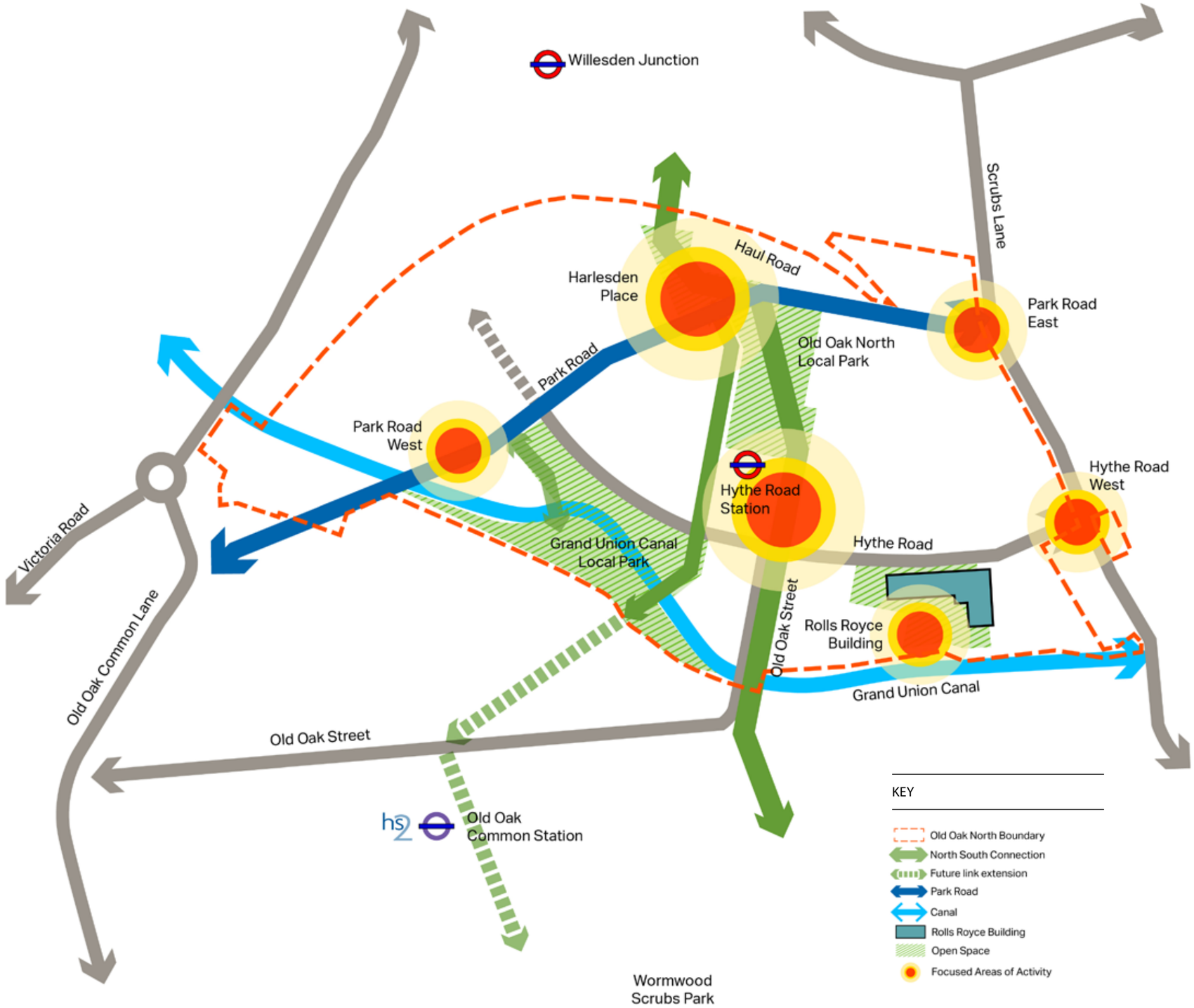


Figure 42 Illustrative Development Framework Concept Diagram

4.1.3 Illustrative Development Framework

The Illustrative Development Framework defines development plots, movement networks, locations and function of publicly accessible open spaces and topographical information to set out how Old Oak North could be developed to accommodate the development capacity set out in Principle 13.

Figure 43 Illustrative Development Framework

5 | Appendices

Appendices

5.1 Scrubs Lane Access Strategy
5.2 Infrastructure: Bridges & Underpasses

5.1 Scrubs Lane Access Strategy Summary

Scrubs Lane Access Strategy - Summary

To evaluate the options for access to Old Oak North from Scrubs Lane the following performance requirements were considered: phasing requirements of the development and its implications for access throughout the masterplan period particularly for construction traffic.

- The bus strategy and bus network resilience requirements
- Emergency access requirements
- Walking and cycling requirements
- Highway capacity requirements
- Place-making requirements

Phasing

- Hythe Road plays a significant role during the build out of the development by providing a second access for the development in the early stages and provides a route for construction traffic away from completed development as the build out continues. The existing underpass has been shown, by observation, to be able to accommodate all but the largest vehicles and therefore provides a suitable construction traffic route when used in conjunction with the Genesis Bridge for very large loads. Therefore, potential improvements to the underpass can be delayed until later in programme when its use for construction traffic reduces.
- Potential improvements to the Hythe Road Underpass may require the closure of Hythe Road and therefore this needs to be carefully programmed to not impact on development build-out.

Bus Network Resilience
Resilience of the bus network is a key requirement for TfL. Bus services must be maintained to Old Oak Common station and the development in the event of an incident or maintenance on Park Road. Therefore, alternative routes for bus services need to be identified for use during incidents that may close part of the network. To provide this resilience for routes to the east of the masterplan area two accesses for buses on to Scrubs Lane are required.

Bus Strategy
To provide comprehensive bus coverage across the Old Oak North site two accesses are required on Scrubs Lane. Double decks buses will be required to travel under the underpass and along Hythe Road . Therefore the height of the underpass and the profile and sag curve of Hythe Road needs to be suitable for the continuous movement of double deck buses.

Walking and cycling
The accesses on Scrubs Lane will provide major gateways to the new development and it will be important for them to reflect the high quality urban design and provision for walking and cycling that promote the Healthy Streets Approach. High quality pedestrian and cycle access into Old Oak North from Scrubs Lane is required at both access points.

Emergency Access
Adequate emergency access to the Old Oak North development area is required. The information currently available suggests that the Hythe Road underpass is currently adequate for emergency access and as it provides the only emergency access to the existing businesses on the site. Therefore we conclude that Hythe Road will be a suitable emergency access.

Highway Capacity
Two new signalised junctions are required on Scrubs Lane at the junctions with Park Road and Hythe Road. The analysis that has been undertaken to date indicates that the introduction of the two new junctions on Scrubs Lane will cause queuing of southbound traffic on Scrubs Lane as this link is already operating at capacity in the peak. Strategic modelling is required to confirm the capacity testing as this analysis has been unable to consider network effects in this already congested corridor. Those network effects relate to drivers re-routing or re-timing their journeys to avoid congestion.

5.2 Infrastructure: Bridges and Underpasses requirements summary

Infrastructure: Bridges and Underpasses requirements summary

The information contained within this summmary is current at the time of preparing. However, all areas are still under development and further discussions with stakeholders are planned. Therefore, the information contained in this summary is subject to refinement.

Park Bridge Requirements

2.1 Park Bridge must be designed to cater for pedestrians, cyclists, buses and for access only private vehicles. The facilities for each mode using the bridge must be appropriate for the level of demand generated by the development and evidence to support the design must be provided.

2.2 The southern end of Park Bridge must tie into the carriageway which is being constructed as part of the Oaklands South development. The tie-in level is fixed at 36.874m AOD.

2.3 Park Bridge must not preclude the ability for Crossrail to extend their depot tracks by 44m to the west in the future to facilitate 11 car trains. This includes:

• Ensuring the bridge has a minimum headroom of 5.3m+S above the Crossrail Depot access track. The current assumed level for the Crossrail Depot access track is 27.750m.

• The bridge design must enable the ability to mount OLE infrastructure to the underside of the bridge or sufficient clearance for OLE gantries to be installed beneath the bridge.

• Provision of a retaining wall outside the boundary of the Crossrail Depot to deal with the level difference between the Crossrail Depot and Oaklands North.

2.4 Park Bridge must include support for all utilities that continue from Oaklands South into Old Oak North along Park Road.

2.5 Park Bridge must include for suitable drainage provision and SuDs as appropriate.

2.6 Park Bridge must include minimum clearance of 2.75m above the Grand Union Canal towpath(s) and a minimum clearance of 3.0m clearance above the Grand Union Canal water level.

2.7 Park Bridge must be fully maintainable.

2.8 The Park Bridge piers and abutments to the south of the Grand Union Canal must take consideration of the HS2 Atlas Road logistics tunnel.

2.9 Park Bridge needs to be taken through a recognised design process (such as RIBA), including consultation with Key Stakeholders.

2.10 Park Bridge must be designed and constructed to an adoptable standard.

2.11 If an intermediate pier is located within the Crossrail Depot, it must be a solid leaf pier. Consideration is to be given to the impact the bridge and its pier may impose on the Crossrail Depot security arrangements. Discussions will be required with Crossrail and Bombardier on what, if any, mitigation measures should be taken.

2.12 The vertical alignment of the bridge shall not exceed a gradient of 5%/1:20 without a suitable alternative NMU route provided.

2.13 Park Bridge should include pedestrian and cycle connections to the Grand Union Canal southern towpath.

2.14 Park Bridge should include provision for a new towpath adjacent to the northern bank of the Grand Union Canal and should include pedestrian and cycle connections to this new towpath.

2.15 Park Bridge should be delivered prior to development of Oaklands North due to the requirement for construction working space.

2.16 Coordination will be required between the positioning of the Park Bridge northern abutment and the potential re-alignment route for the Stamford Brook sewer.

2.17 Park Bridge will need to include a suitable access for the existing Network Rail Road Rail Vehicle access point within the Oaklands North site.

2.18 Appropriate lighting, use of materials and surveillance will be required.

Park Road Underpass Requirements

3.1 Park Road underpass must be designed to cater for pedestrians, cyclists, buses and for access only private vehicles. The facilities for each mode using the bridge must be appropriate for the level of demand generated by the development and evidence to support the design must be provided.

3.2 The Park Road Underpass shall be a single continuous underpass, i.e. not separate structures segregating NMU users from the carriageway.

3.3 The Park Road Underpass must include a minimum headroom of 5.7m+S across its full width.

3.4 The Park Road Underpass must be designed to provide continuation of all utilities required along Park Road.

3.5 The Park Road Underpass must adhere to all applicable/ current Network Rail standards.

3.6 The Park Road Underpass must be fully maintainable.

3.7 The Park Road Underpass shall be taken through a recognised design process (such as RIBA / GRIP), including consultation with key stakeholders.

3.8 Park Road Underpass must be designed and constructed to an adoptable standard.

3.9 Park Road Underpass must include for suitable drainage provision and SuDs as appropriate.

3.10 The vertical alignment of the underpass shall not exceed a gradient of 5%/1:20 without a suitable alternative NMU route provided.

3.11 Appropriate lighting, use of materials and surveillance will be required.

Laundry Bridge Requirements

4.1 Laundry Bridge must be designed to cater for pedestrians, cyclists, buses and for access only private vehicles. The facilities for each mode using the bridge must be appropriate for the level of demand generated by the development and evidence to support the design must be provided.

4.2 Laundry Bridge spans the Network Rail (LNW Route) freight line and the EMR/Powerday access track.

4.3 Laundry Bridge must be designed to provide continuation of all utilities required along Park Road towards the A219 Scrubs Lane.

4.4 Laundry Bridge must adhere to all applicable/current Network Rail standards.

4.5 Laundry Bridge must be fully maintainable.

4.6 Laundry Bridge must be taken through a recognised design process (such as RIBA / GRIP), including consultation with key stakeholders.

4.7 Laundry Bridge must be designed and constructed to an adoptable standard.

4.8 Laundry Bridge must include for suitable drainage provision and SuDs as appropriate.

4.9 The vertical alignment of the underpass shall not exceed a gradient of 5%/1:20 without a suitable alternative NMU route provided.

4.10 Appropriate lighting, use of materials and surveillance will be required.

Old Oak Bridge Requirements

5.1 The Old Oak Bridge must be designed to cater for pedestrians, cyclists, buses and London licensed taxis. The facilities for each mode using the bridge must be appropriate for the level of demand generated by the development and evidence to support the design must be provided.

5.2 The Old Oak Bridge must span the Crossrail Depot, Grand Union Canal and Network Rail Retaining Wall.

5.3 The Old Oak Bridge must span the Crossrail Depot gantries and include a 1m clearance between the top of the gantry mast and soffit of the Old Oak Bridge to allow maintenance access to the gantries.

5.4 The Old Oak Bridge must include a minimum clearance of 2.75m above the Grand Union Canal towpath(s) and a minimum clearance of 3.0m clearance above the Grand Union Canal water level.

5.5 Construction of the Old Oak Bridge must not impact on the operations of the Crossrail Depot which will be in use 24hours a day, 365 days a year.

5.6 Construction of the Old Oak Bridge must be deliverable without impact on the Old Oak Common HS2 station delivery programme.

5.7 The Old Oak Bridge carriageway shall be restricted to use by authorised bus and taxis.

5.8 The Old Oak Bridge shall include suitable provision for pedestrian and cyclists.

5.9 The Old Oak Bridge must include suitable connections to both the existing southern and proposed northern canal towpaths.

5.10 The Old Oak Bridge must not preclude provision for a non-motorised link to Wormwood Scrubs. HS2 have set a requirement that no part of the structure for this NMU link may be located on their station box.

5.11 The alignment and width of the Old Oak Bridge from its connection with the Old Oak Common HS2 station box and the northern abutment is fixed.

5.12 The Old Oak Bridge must adhere to all applicable/current Network Rail standards.

5.13 The Old Oak Bridge must be fully maintainable.

5.14 The Old Oak Bridge must be taken through a recognised design process (such as RIBA), including consultation with Key Stakeholders.

5.15 Old Oak Bridge must be designed and constructed to an adoptable standard.

5.16 The Canal and River Trust have set a requirement that no structural pier may be located between the towpath and the waterway.

5.17 The Canal and River Trust have set a requirement that any area of waterway lost, must be replaced.

5.18 The Old Oak Bridge must consider the aspirations of HS2 in terms of design and any usage they may consider beneath the structure within the HS2 station box.