



# UPPER LEE VALLEY

Opportunity Area Planning Framework

July 2013

MAYOR OF LONDON

## Project team

Kim Tagliarini  
Martin Scholar  
Colin Wilson

Far more people than it is possible to thank individually have contributed to the production of the Upper Lee Valley Opportunity Area Planning Framework. They include officers from the Lee Valley Regional Park Authority, North London Strategic Alliance, Environment Agency, landowners, consultants and many others.

Special thanks go to past and present officers and members of Enfield, Haringey, Waltham Forest and Hackney Councils and Transport for London for their continuing hard work and commitment to the project.

Additional acknowledgement is made to Urban Graphics for the initial formatting of this report and to Urban Beings who developed and finalised it.



## Photos

Unless otherwise indicated, photos in this report were taken by Urban Beings and Colin Wilson.

## Published by

Greater London Authority  
City Hall  
The Queen's Walk  
More London  
London SE1 2AA

## Enquiries

020 7983 4100

## Minicom

020 7983 4458

Copies of this report are available:

[www.london.gov.uk](http://www.london.gov.uk)

## ISBN: 978 1 84781 558 3

© Crown Copyright and database right 2013.

Ordnance Survey 100032216

Greater London Authority

## Cover photograph

© Colin Wilson

This report includes data sourced from:

- Cities Revealed® Copyright by The GeoInformation Group®, 2010. All Rights Reserved
- © Landmark Information Group Limited and/or its Data Suppliers. All rights reserved 2008
- Copyright © and Database rights Environment Agency 2013. All rights reserved

This report is printed on fully certified FSC paper made of 100% recycled waste. Revive 100 white offset (FSC SGS-COC-0912)

# UPPER LEE VALLEY

## Opportunity Area Planning Framework

July 2013

MAYOR OF LONDON



## Mayor's foreword

In 2012, the Lower Lea Valley played host to the most successful Olympic and Paralympic Games ever. The legacy of that fantastic Summer is now taking shape.

Just up the road, the Upper Lee Valley has the potential to offer similar change. It is in many ways a hidden gem. Firstly, an illuminating history full of interest. As an example, Sir Jules Thorne, the founder of the Electric Lamp Services Company Limited bought his first lighting company, the Atlas Lamp Works in Edmonton in 1932. This company became known as Thorn and quickly became one of the largest lighting and electrical companies in the World. All from a base in the Upper Lee.

Secondly, its existing assets such as the wonderful Lee Valley Regional Park. And finally, its bright future which includes major investment in the West Anglia Main Line and the multi-million new stadium to be built by Tottenham Hotspur.

Of course, the Upper Lee is not without its challenges which includes pockets of deprivation and I am determined to address these issues. This framework will be used as a basis to direct public sector investment in rebuilding and regenerating communities. This is a joint statement of intent between myself and the Upper Lee Valley boroughs to create jobs and housing opportunities.

I want to see a busy, thriving community of residents and workers in places that are beautiful, that will capitalise on their industrial heritage, that are fully integrated with their surroundings and which create accessible links to the Park.

I am therefore delighted to introduce this Upper Lee Valley Opportunity Area Planning Framework. I look forward to working in partnership with all those who can help deliver this vision, in particular the London Boroughs of Enfield, Haringey, Waltham Forest and Hackney, Transport for London, the Lee Valley Regional Park Authority and the North London Strategic Alliance.



**Boris Johnson** Mayor of London

July 2013



# Contents

00	Executive Summary	vi
01	Introduction	01
02	Land use	19
03	Transport	33
04	Urban design	69
05	Heat, waste and water	91
06	Tottenham Hale & Blackhorse Lane	103
07	Meridian Water in Central Leaside	121
08	Ponders End	139
09	A10/A1010 corridor	151
10	Infrastructure, implementation and delivery	171
<b>Appendices</b>		<b>179</b>
A1	Bibliography	180
TA1	Industrial uses	184
TA2	New jobs and homes	188
TA3	Summary of the Transport Study result	190
TA4	Strategic landscape projects	198
TA5	Flood risk management	206

## Executive summary

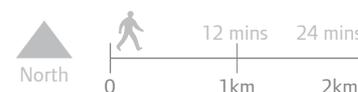
The Upper Lee Valley Opportunity Area covers 3,884 hectares shared between the London Boroughs of Enfield, Haringey, Waltham Forest and Hackney.

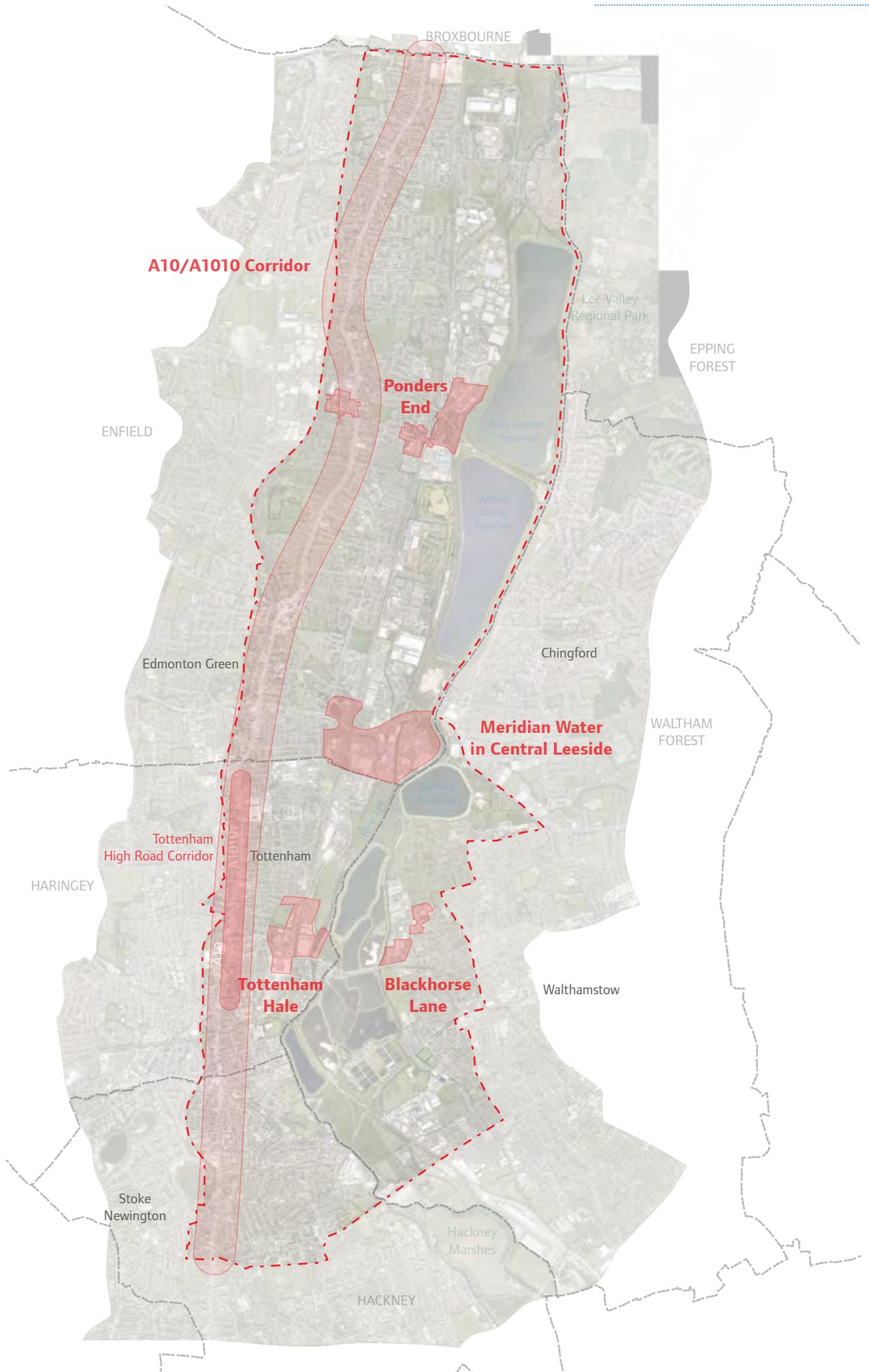
This Opportunity Area Planning Framework (OAPF) has been produced by the Greater London Authority working with the four boroughs referred to above together with wider stakeholders including Transport for London, the Lee Valley Regional Park Authority and the North London Strategic Alliance.

The Opportunity Area Planning Framework sets out an overarching framework for the area which is amplified where necessary by boroughs' own planning documents for specific areas.

The Upper Lee Valley contains a wealth of existing assets such as the Lee Valley Regional Park, established residential communities, a large concentration of industrial land and connections into central London. Taken together, they provide the catalyst for economic and physical regeneration.

A report prepared by Oxford Economics on behalf of Enfield Council has estimated that with the appropriate investment, the Upper Lee Valley could deliver cumulative additional gross added value (GVA) of around £10 billion by 2031.





© Crown Copyright and database right 2013. Ordnance Survey 100032216 and Cities Revealed®

**Chapter 1** considers the local and strategic policies which shape the overarching principles of this framework. It also describes the purpose of this document.

**Chapter 2** sets out the land use strategy for the Opportunity Area. Using analysis of employment land and in places with good public transport accessibility or planned improvements, a measured amount of industrial land has been released around 4 identified growth areas - Tottenham Hale, Blackhorse Lane, Meridian Water in Central Leaside and Ponders End. The strategy also sets out that notwithstanding some industrial land release, there is still healthy demand for employment land and the retention and renewal of some parts is also an important element to the success of the Upper Lee Valley.

The individual chapters for the growth areas (**Chapters 6, 7, 8**) contain details on the development strategy for each area, the release of Strategic Industrial Locations, ways in which the Lee Valley Regional Park can be opened up and development sites and interventions.

There will also be significant growth in the A10/A1010 Corridor (**Chapter 9**). The Corridor offers infrastructure provision to the existing communities. The key to ensuring the opportunities and regeneration benefits extend to the whole of the Upper Lee Valley will be in connecting the existing A10/A1010 communities to the growth areas, industrial land and Regional Park.

Detail is provided on the opportunity for Tottenham's Places (High Road West, Northumberland Park, Bruce Grove, Seven Sisters and Tottenham Green). All of this will be supported by the development of Tottenham Hotspur's new stadium .

Detail is also provided on Stamford Hill, Stoke Newington, Angel Edmonton and Edmonton Green.

**Chapter 3** considers transport and linking back to Chapter 2, sets out priorities for transport to support growth. In particular, there is a focus on the proposed improvements to the West Anglia Main Line. Initially, enhancements will be made to introduce a 4 trains per hour service between Stratford, Tottenham Hale and Angel Road. This will strengthen the link between the Upper Lee Valley and Stratford, the Lower Lea Valley and Canary Wharf and is a vital catalyst to unlocking development potential at Tottenham and Meridian Water.

It also identifies the potential for Crossrail 2 to run through the Upper Lee Valley. This could transform public transport accessibility and the viable density of development in the corridor.

Urban Design is considered in **Chapter 4**. It identifies ways in which the Lee Valley Regional Park can be opened up based on 63 identified strategic landscape projects. Additionally, guidance is provided on suitable locations for tall buildings, which are generally in the growth areas and parts of the retained Strategic Industrial Locations.

**Chapter 5** highlights the Edmonton Eco Park as an asset and the main site for dealing with waste in the Upper Lee Valley. Waste management operations and associated green industries have the potential to bring a number of economic benefits to the area including direct job creation, associated business operations linked to the re-use of by-products, and potential energy and heat generation. Consideration should be given to extending the Green Enterprise District to the area. It also provides commentary on the proposed Lee Valley Heat Network.

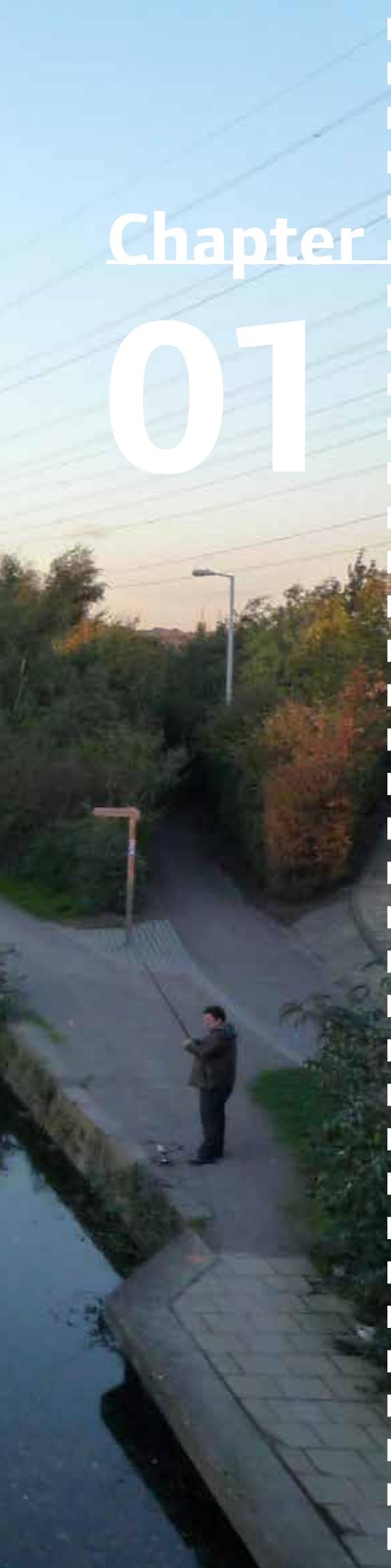
**Chapter 10** looks at infrastructure, implementation and delivery. It sets out possible funding and investment sources as well as delivery mechanisms. It identifies the need for a Development Infrastructure Funding Study.

## 8 Objectives for the Upper Lee Valley

1. Growth at Tottenham Hale, Blackhorse Lane, Meridian Water in Central Leaside and Ponders End.
2. Optimised development and redevelopment opportunities along the A10/A1010 Corridor, in particular the Tottenham High Road Corridor and Northumberland Park.
3. Over 15,000 new jobs by 2031 across a range of industries and a green industrial hub creating greater learning and employment opportunities.
4. Over 20,100 new well designed homes by 2031.
5. Full integration between the existing communities and the new jobs, homes and services provided as part of the new developments.
6. A Lee Valley Heat Network linked to the Edmonton Eco Park.
7. Significant investment and improvements to transport infrastructure, including four trains per hour on the West Anglia Main Line and improvements to help people walk and cycle more easily through the area.
8. A fully accessible network of green and blue spaces which open up the Lee Valley Regional Park. The networks between them will be improved benefitting both people and wildlife.







Chapter

01

# INTRODUCTION

1.1	Upper Lee Valley	2
1.2	Objectives	6
1.3	Strategic policy context	8
1.4	Local policy context	12
1.5	Purpose of the Opportunity Area Planning Framework	16

# 1.1 Upper Lee Valley

The Upper Lee Valley Opportunity Area is one of the largest Opportunity Areas in London covering 3,884 hectares. It extends approximately 14 kilometres from the M25 in the north, to Lea Bridge in the south and is approximately 3.5 kilometres across at its widest point.

The Opportunity Area is shared between the London Boroughs of Enfield, Haringey, Waltham Forest and Hackney. Epping Forest District Council is to the east and Broxbourne Borough Council to the north.

A defining feature of the area is the Lee Valley Regional Park which sits at the heart of the Upper Lee Valley. It is one of the core assets of the area, presenting excellent opportunities for walking and cycling but visual and physical access to the Park and water network is often restricted. This is due to a number of factors including the location of park entrances, the River Lee itself, the reservoirs, railway lines, roads and large industrial areas. It is much more difficult to cross from the east to the west of the Park than to follow the linear path from north to south.

Large amounts of housing (it is home to around a quarter of a million people<sup>1</sup>); and the A10/A1010 Corridor, with its town centre functions; form other key features of the area. There are also other important characteristics including large amounts of industrial land (nearly 400 hectares employing around 70,000 people<sup>2</sup>); retail parks; the Edmonton Eco Park; Tottenham Hotspur’s stadium; and excellent transport connections.

1. Estimated from the 2011 Census

2. Estimated from the 2011 Business Register and Employment Survey ONS

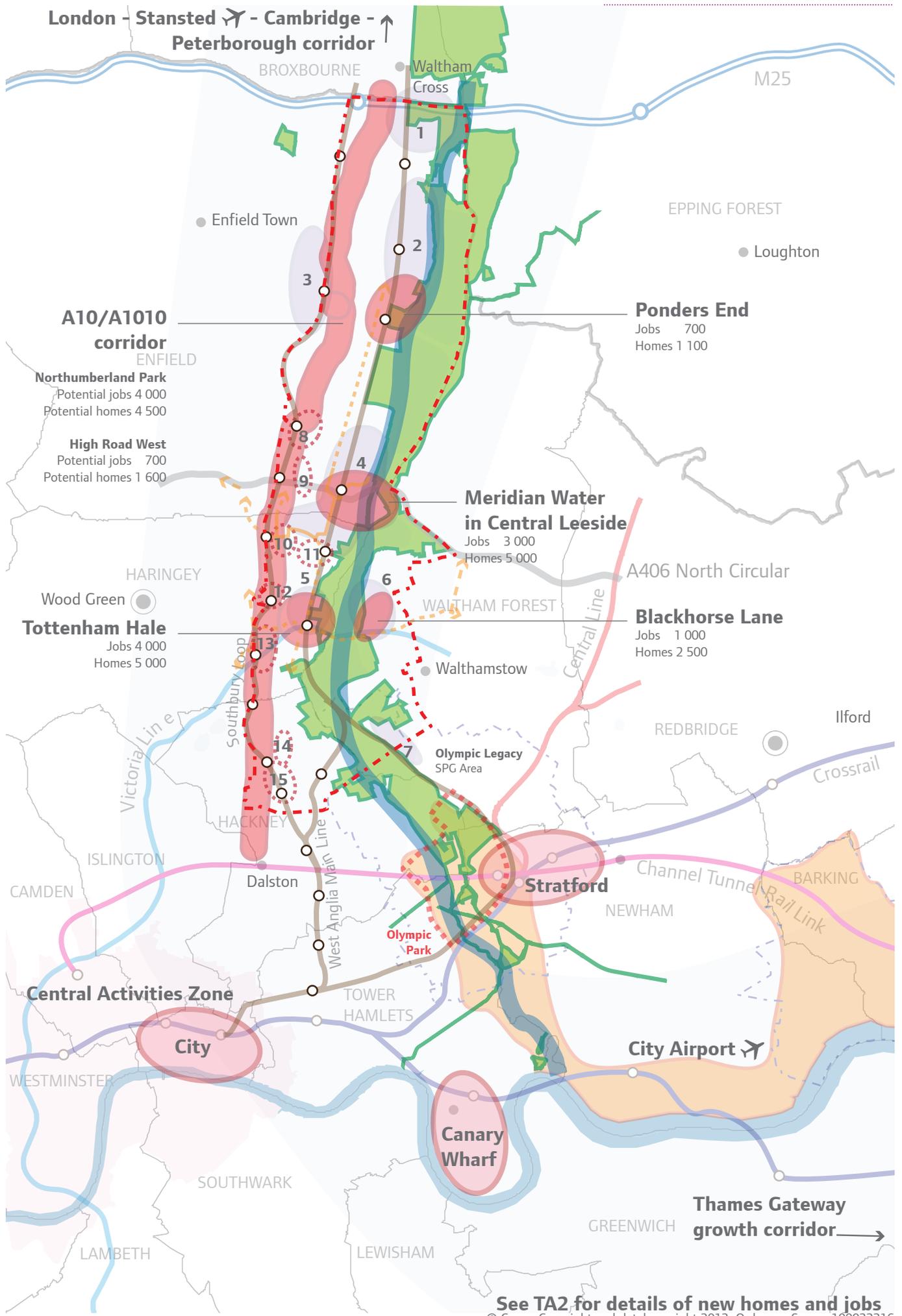
## Strategic Industrial Locations

1. Freezywater and Innova Park
2. Brimsdown
3. Great Cambridge Road
4. Central Leeside
5. Tottenham Hale
6. Blackhorse Lane
7. Lee Bridge Gateway

## A10/A1010 Corridor

8. Edmonton Green
9. Angel Edmonton
10. High Road West and Tottenham Hotspur FC
11. Northumberland Park
12. Bruce Grove
13. Seven Sisters and Tottenham Green
14. Stamford Hill
15. Stoke Newington





See TA2 for details of new homes and jobs  
 © Crown Copyright and database right 2013. Ordnance Survey 100032216

Fig. 1.1 The Upper Lee Valley Opportunity Area Planning Framework context

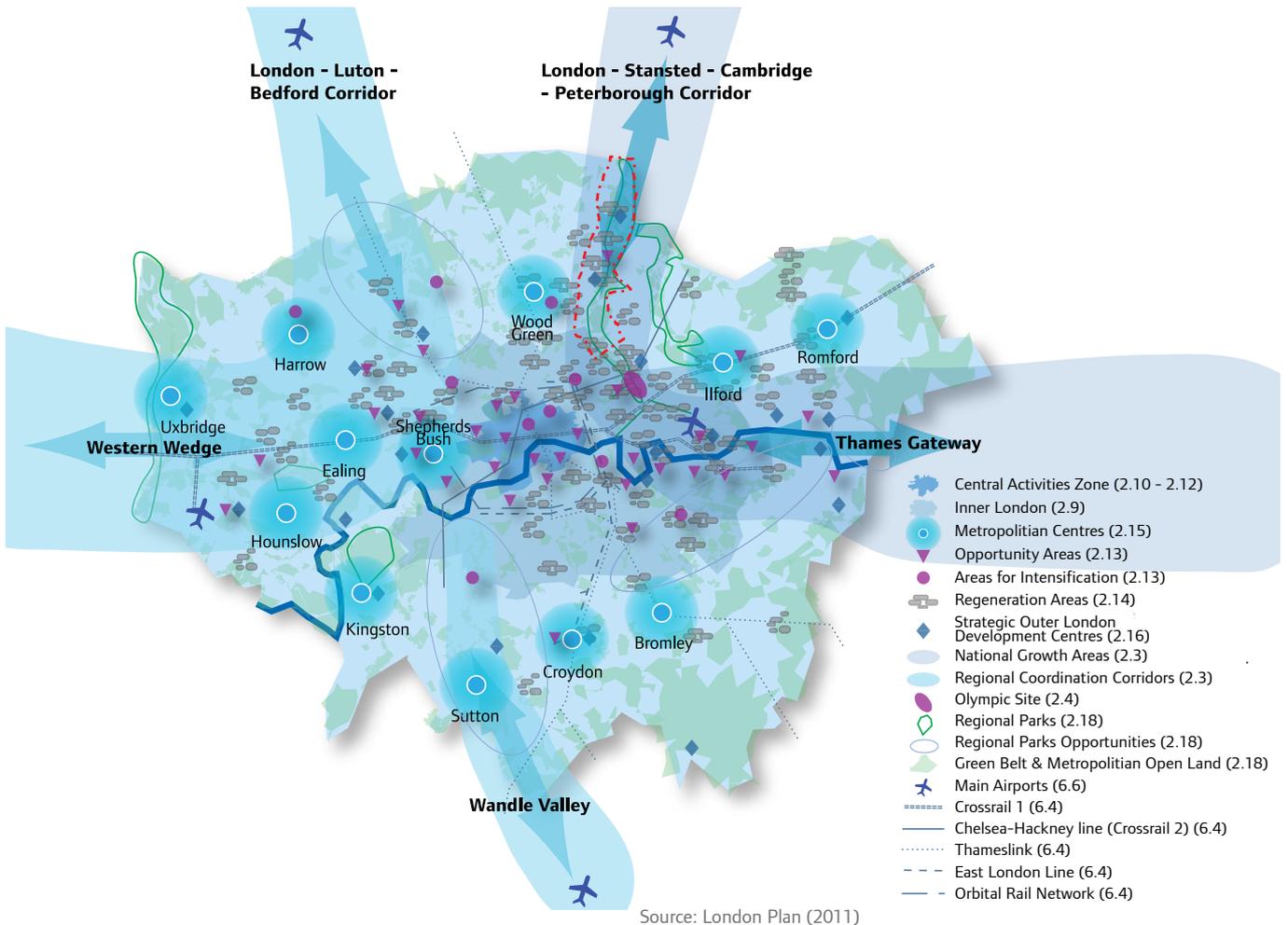
### **Convergence – London’s key strategic challenge**

The communities covered in this Opportunity Area are some of the most deprived in London. It is therefore vital that the regeneration of the growth areas does not result in isolated islands of prosperity, but will raise the social and economic well being of this part of London as a whole.

This principle of convergence is key to the regeneration aims of all Opportunity Area Planning Frameworks being produced for east London.

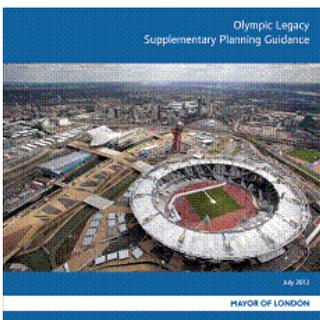
The Upper Lee Valley Opportunity Area together with the Lower Lea Valley and Olympic Park form the London segment of the London-Stansted-Cambridge-Peterborough growth corridor as defined by central Government. The Royal Docks Opportunity Area and London Riverside Opportunity Area form part of the adjoining Thames Gateway corridor to the east (Figs 1.1 and 1.2).

The Upper Lee Valley boroughs and the Greater London Authority have collaborated to produce the Opportunity Area Planning Framework setting out the Mayor’s and the local authorities’ aspirations for the regeneration of the Upper Lee Valley. The Framework provides the strategic direction and objectives for the area with detail for the growth areas and A10/A1010 Corridor provided by the boroughs’ own documents.



Source: London Plan (2011)

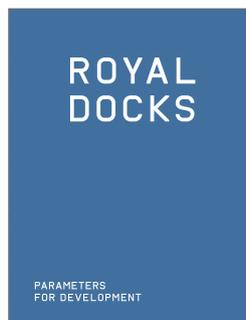
Fig. 1.2 London Plan 2011 key diagram



Olympic Legacy  
SPG 2012



Lower Lea Valley  
OAPF 2007



Royal Docks  
Vision 2011



Draft London Riverside OAPF  
2011

## 1.2 Objectives

The Upper Lee Valley Opportunity Area Planning Framework sets out 8 objectives for the area. The framework is based upon making the most of the Upper Lee Valley's existing assets and using them to facilitate the regeneration of the area.

1. Growth at Tottenham Hale, Blackhorse Lane, Meridian Water in Central Leaside and Ponders End.
2. Optimised development and redevelopment opportunities along the A10/A1010 Corridor, in particular the Tottenham High Road Corridor and Northumberland Park.
3. Over 15,000 new jobs by 2031 across a range of industries and a green industrial hub creating greater learning and employment opportunities.
4. Over 20,100 new well designed homes by 2031.
5. Full integration between the existing communities and the new jobs, homes and services provided as part of the new developments.
6. A Lee Valley Heat Network linked to the Edmonton Eco Park.
7. Significant investment and improvements to transport infrastructure, including four trains per hour on the West Anglia Main Line and improvements to help people walk and cycle more easily through the area.
8. A fully accessible network of green and blue spaces which open up the Lee Valley Regional Park. The networks between them will be improved benefitting both people and wildlife.



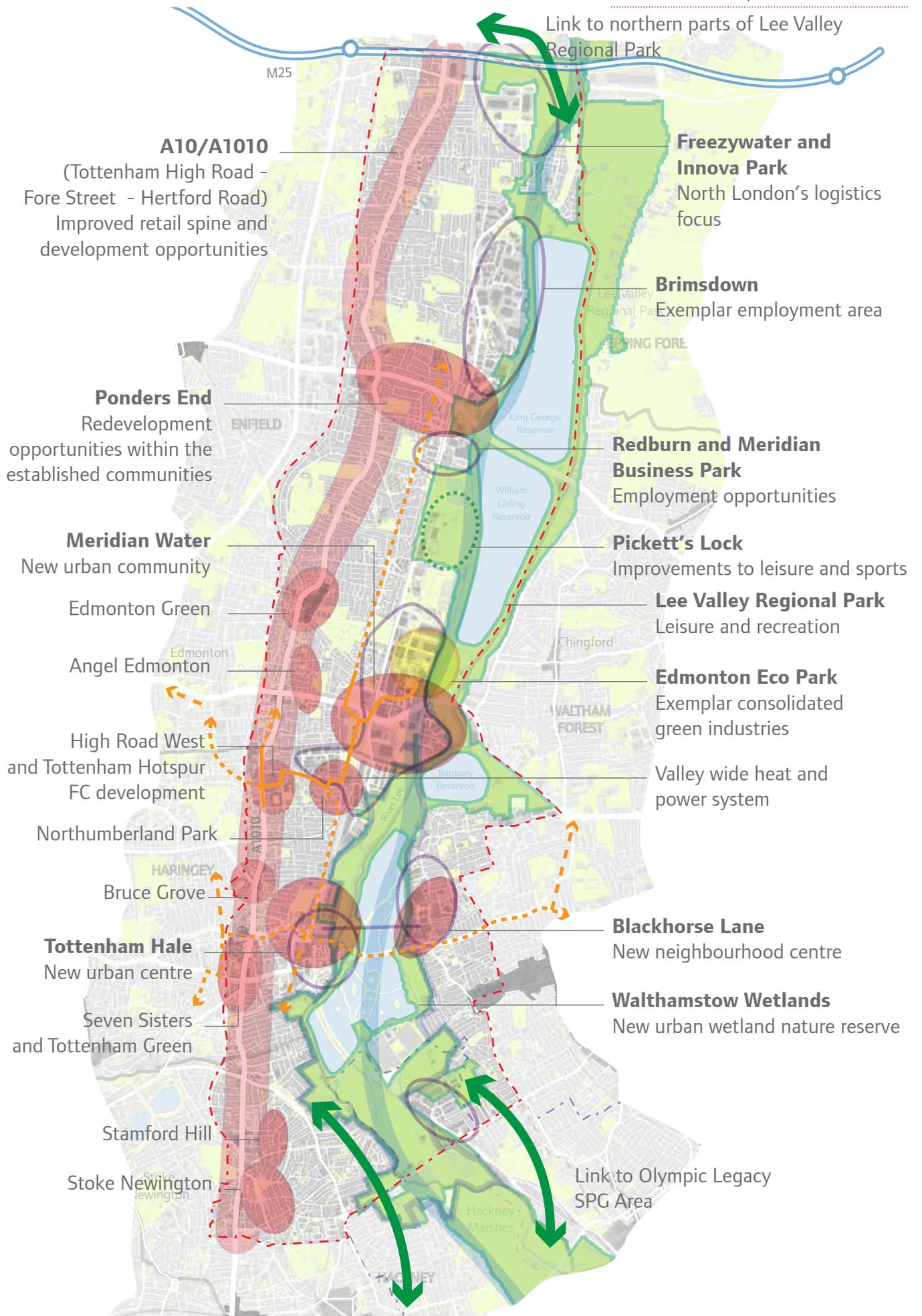


Fig. 1.3 The Upper Lee Valley objectives

## 1.3 Strategic policy context

The London Plan (2011) sets the strategic policy context for the Upper Lee Valley Opportunity Area Planning Framework.

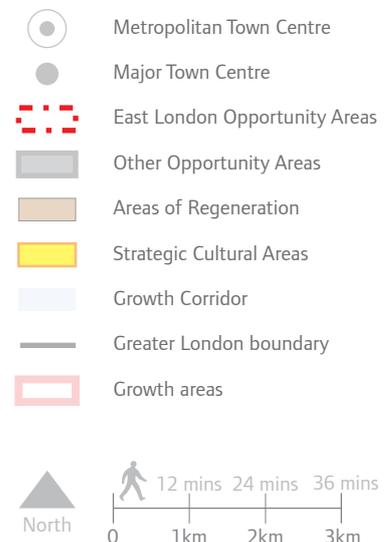
### Opportunity Areas

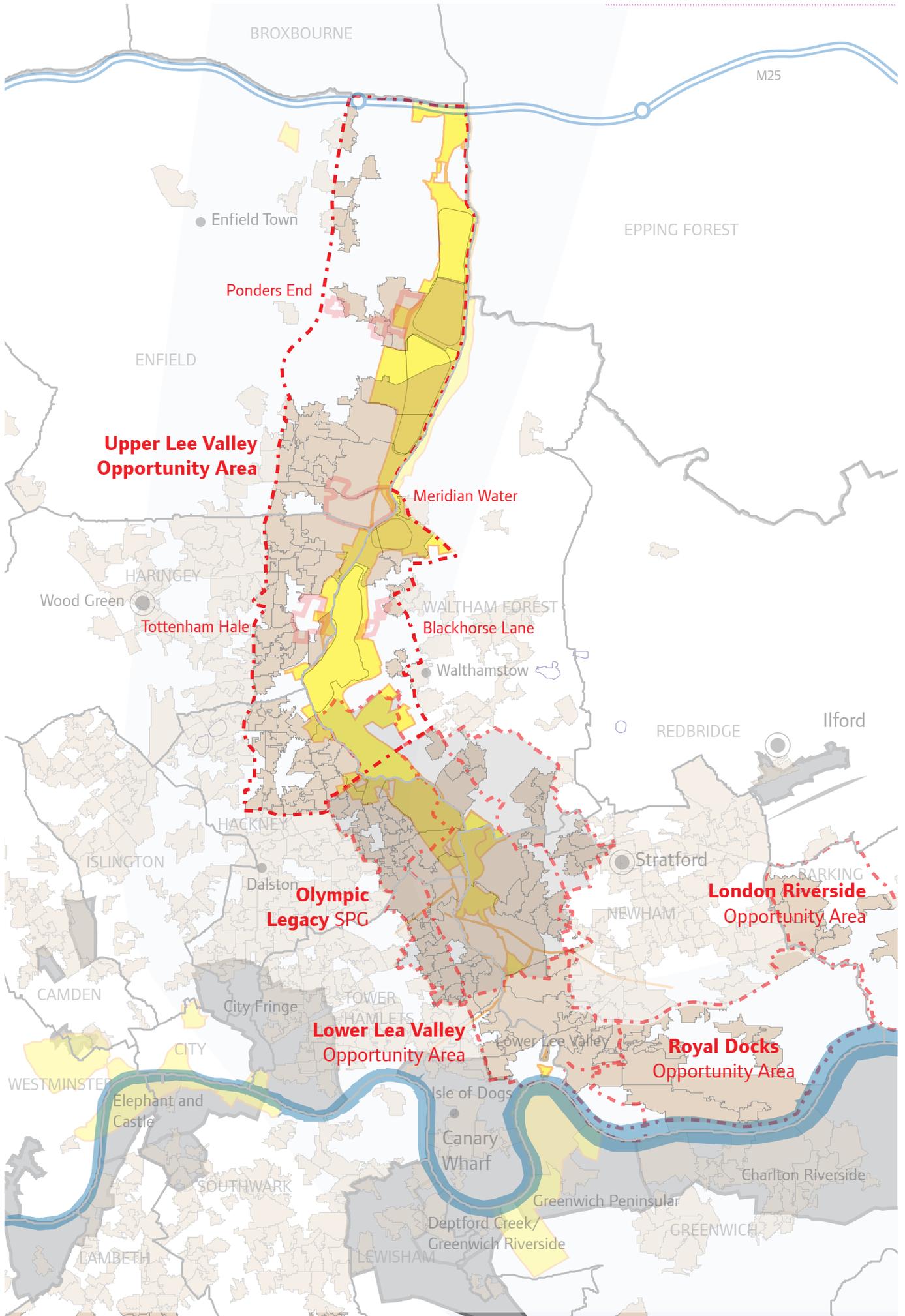
Policy 2.13 of the London Plan encourages strategic partners to work with the Mayor to prepare, and then implement the spatial planning frameworks for the Opportunity Areas set out in the London Plan, or to build on frameworks that have already been developed. Such frameworks should set out a sustainable development programme for each area that in turn should be reflected in Development Plan Documents.

Paragraph 2.62 of the London Plan states that planning frameworks for Opportunity Areas should focus on implementation by identifying both the opportunities and challenges that need resolving such as land use, infrastructure, access, energy requirements, spatial integration, regeneration, investment, land assembly and phasing.

### The London Plan (2011) sets the strategic policy direction for the area:

*“The location, construction and design of the new development and infrastructure should avoid significant and cumulative impacts on European biodiversity sites. The Lee Valley Regional Park Authority and water utilities should collaborate with relevant boroughs relating development to the environmental assets of the Lee Valley Park and planning for long term flood risk management. Opening up reservoirs to the public would enhance connections east to west across the valley and increase use of the regional park and its water spaces. London’s largest waste facility is located at Edmonton Eco Park and this facility has potential to provide heat and power to neighbouring developments. At Tottenham Hale, the local road network requires reorganisation to enable more efficient use of the land. Improvements to capacity of the Underground station, new bus infrastructure and services are needed to deliver higher density, mixed-use development”.*





© Crown Copyright and database right 2013. Ordnance Survey 100032216

Fig. 1.4 East London Opportunity Areas and priority areas

## Areas for Regeneration

Policy 2.14 of the London Plan sets out integrated spatial policies that bring together regeneration, development and transport proposals with improvements in learning and skills, health, safety, access, employment, environment and housing. Areas of regeneration including Tottenham, Tottenham Hale, Central Leaside, Edmonton and Ponders End are defined as being the 20% most deprived of the lower super output areas.

## Strategic Cultural Areas

The Lee Valley Regional Park is identified in the London Plan as a strategic cultural area. Policy 4.5 of the London Plan seeks to promote, enhance and protect the rich heritage and unique offers of these areas.

## The Park Plan 2000 and Park Development Framework

The Lee Valley Regional Park Plan (2000) identified proposals for the management and development of the Park. The Authority adopted its Park Development Framework Thematic Proposals (2011) which are being translated into a series of area based proposals to replace the Park Plan. The Area 2 Proposals for 'The Three Marshes: Walthamstow, Leyton and Hackney' were adopted in October 2011. The Areas 3, 4 and 5 Proposals for "The Waterlands" were adopted in April 2013.

## North London Waste Plan

Seven boroughs are working together to produce the North London Waste Plan as a Waste Development Plan Document, which identifies suitable sites and supporting policies for the future management of all north London's waste to 2027 and beyond. The seven London boroughs are Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest.

Further information is available in Chapter 5.3 Waste.



## 1.4 Local policy context

The Upper Lee Valley Opportunity Area Planning Framework began at the same time as the drafting of the four boroughs' Local Plans. Many of the aspirations of this framework are included in the Local Plans and other relevant non-planning documents as listed below:

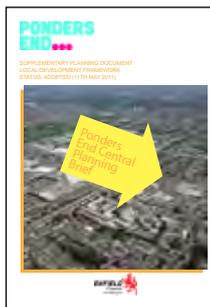
### Haringey

- **Local Plan Strategic Policies**  
Adopted in March 2013
- **Sustainable Design and Construction Supplement Planning Document**  
Adopted in March 2013
- **A Plan for Tottenham** August 2012  
Sets out the ambitions and plans for regeneration, development and growth in Tottenham
- **High Road West** Consultation April 2013
- **Transforming Tottenham Hale Urban Centre Master Plan Supplementary Planning Document** 2006
- **Community Infrastructure Levy**  
Preliminary charging schedule consulted in 2012
- **Development Management Policies**  
Draft policy approach consulted in 2013



## Enfield

- **Core Strategy**  
Adopted in November 2010
- **Development Management Document**  
Consulted in 2012
- **North East Enfield Area Action Plan**  
Initial stages consulted in 2008/9  
Interim Direction document update consulted in 2012
- **Ponders End Central, South Street and Water Front planning briefs**  
Ponders End Central Area Planning Brief adopted in May 2011  
Planning guidance for South Street and Water Front areas are programmed as part of the next stage of preparation for the North East Enfield area action plan
- **Central Leaside Area Action Plan**  
First stage of the Area Action Plan consulted in February 2008.  
Updated Central Leaside Plan consulted in 2012
- **Meridian Water Master Plan**  
Adopted July 2013
- **Edmonton Green Area Action Plan**  
Issues and Options consulted in 2012
- **Edmonton Eco Park Planning Brief Supplementary Planning Document**  
Adopted in May 2013



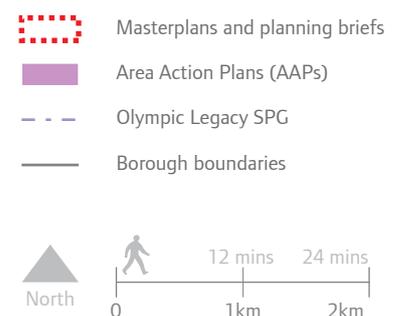
## Waltham Forest

- **Core Strategy**  
Adopted in March 2012
- **Development Management Policies**  
Proposed submission July 2012
- **Blackhorse Lane** Urban Design Framework  
Consulted in August 2011
- **Blackhorse Lane Area Action Plan**  
Submission March 2013
- **Northern Olympic Fringe Area Action Plan**  
Consultation 2011



## Hackney

- **Core Strategy**  
Adopted in November 2010



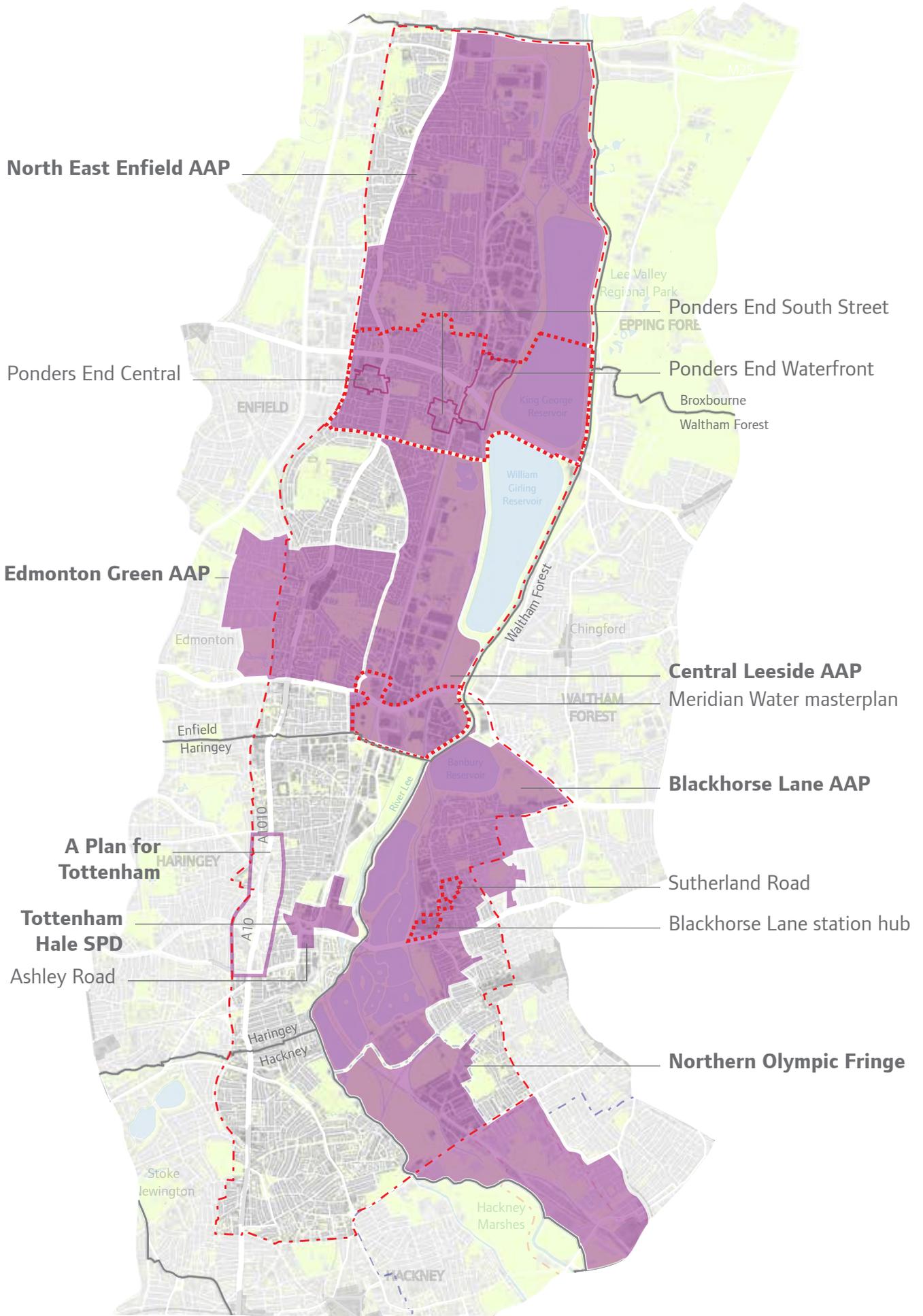


Fig. 1.5 Local policy context

## 1.5 Purpose of the Opportunity Area Planning Framework

The Opportunity Area Planning Framework is Supplementary Planning Guidance to the London Plan. The main purpose of this guidance is to supplement and apply London Plan policy for the Upper Lee Valley Opportunity Area by setting out the Mayoral priorities and long term vision in a single strategic planning document. Specifically this guidance sets out how the Mayor wishes to see the Upper Lee Valley evolve and change over the next 20 years to create a sustainable and successful piece of London, thereby helping to transform living conditions and opportunities across east London as a whole.

An Opportunity Area Planning Framework does not create policy but clarifies it, applying policy to a specific spatial context and identifying contentious issues at an early stage in the planning process. The Framework can then set out how these may be resolved through existing policy or its review. Ultimately it achieves material weight through bringing together a sound evidence base upon which planning decisions are made, and through extensive consultations with key stakeholders, interested parties and the public.

A key benefit of Opportunity Area Planning Frameworks is the opportunity to take a strategic and design-led approach to spatial planning, specifically considering how key development sites fit together within the existing and emerging policy context. The content of an Opportunity Area Planning Framework varies but deals with a common set of principles – essentially the contents list is cut to fit based on the physical make up of the area and the range of development interests likely to come forward. Opportunity Area Planning Frameworks provide a platform for communicating between the strategic and local level, reinforcing common ground and resolving difficulties.

The draft Framework was consulted on between November 2011 and January 2012 during which 21 representations were received to inform the final version.

As set out in the London Plan, planning authorities will be expected to reflect and give maximum planning weight to this document when preparing planning documents, and to refer to and take account of the guidance when considering planning applications.

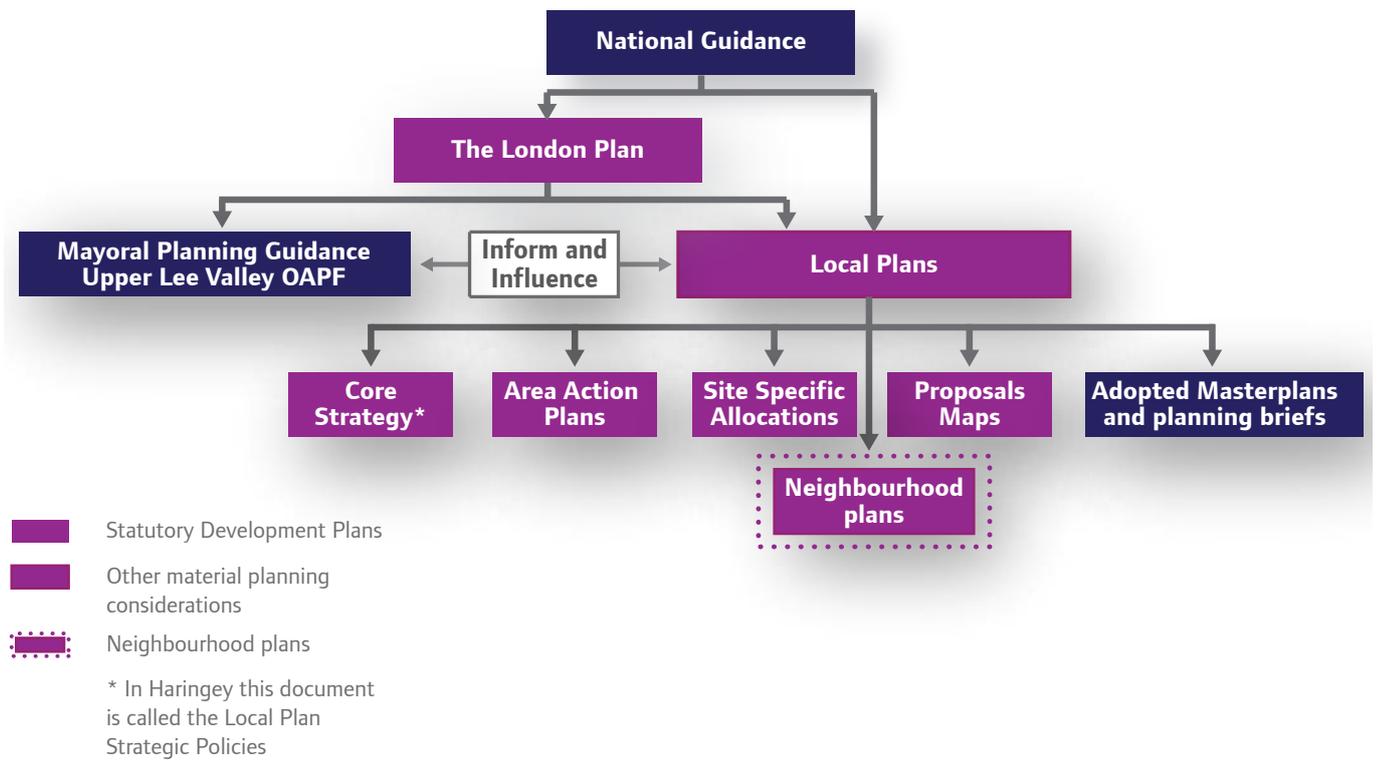


Fig. 1.6 Planning hierarchy



# Chapter

# 02

# LAND USE

2.1	Employment and industry	20
2.2	New housing	28
2.3	Mixed-use	29
2.4	Retail	30

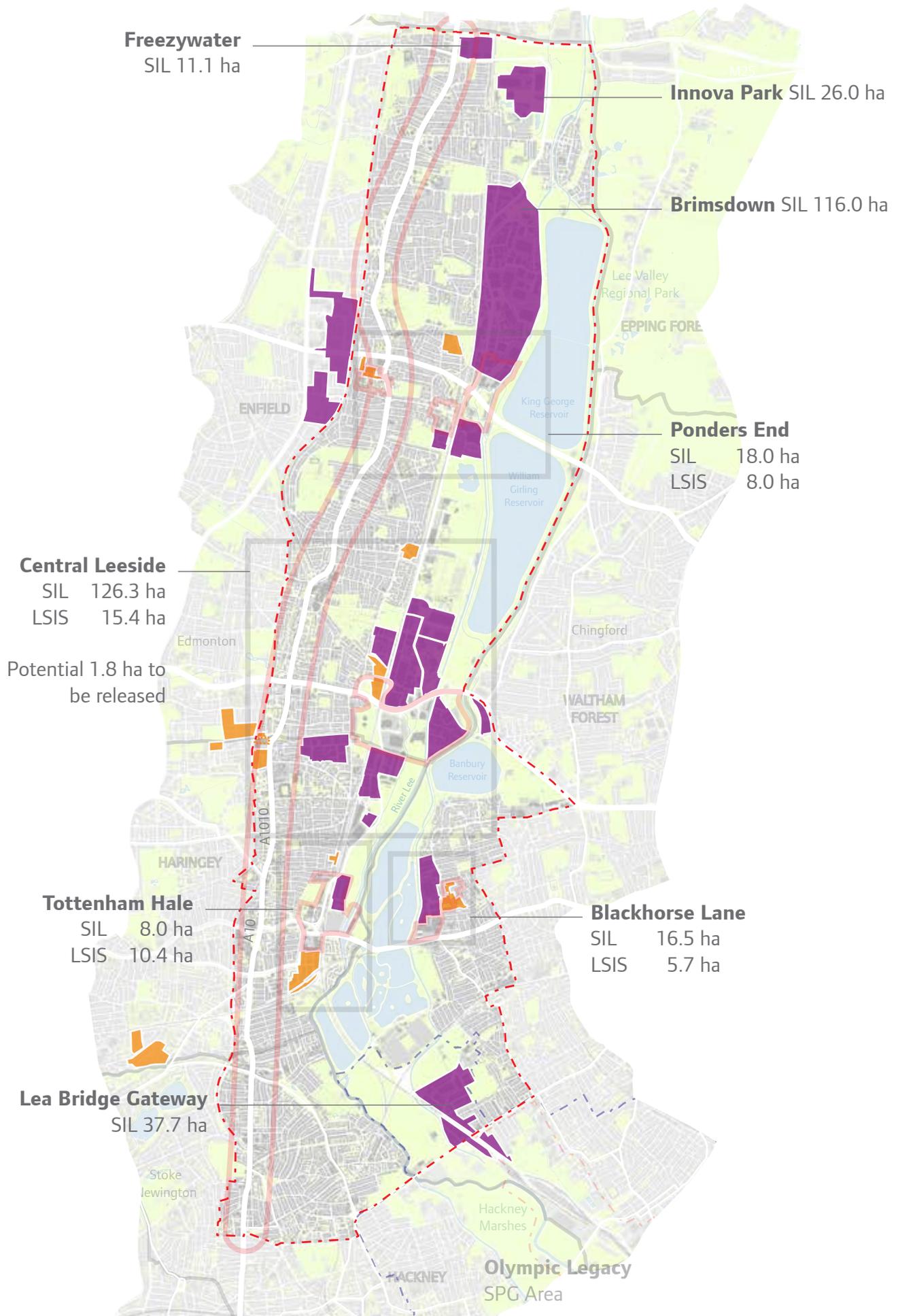
## 2.1 Employment and industry

### Strategic Industrial Locations

The Upper Lee Valley is one of the largest areas of manufacturing and technology-led industry in London. Given its strategic position as a business and employment centre within the London-Stansted-Cambridge-Peterborough growth corridor, the area contains a significant amount of industrial land, much of which is designated as Strategic Industrial Locations (SIL). The Upper Lee Valley also contains a number of Locally Significant Industrial Sites (LSIS). These are industrial sites which are important in providing land for local industrial functions.

The London Plan provides the strategic policy position to protect Strategic Industrial Locations. Policy 2.17 states, *“the Mayor will promote, manage and where necessary protect the Strategic Industrial Locations...as London’s main reservoirs of industrial and related capacity including logistics, waste management, utilities, wholesale markets and some transport functions.”* The release of industrial land should only therefore be considered as part of a strategically co-ordinated process of consolidations.





© Crown Copyright and database right 2013. Ordnance Survey 100032216 and Cities Revealed®

Fig. 2.1 Industrial location designations

## **Redistribution of industrial land**

The Mayor's Land for Industry and Transport Supplementary Planning Guidance (September 2012) commits the Mayor to work with boroughs and other partners to plan, monitor and manage the release of surplus industrial land to contribute to strategic and local planning objectives, especially those to provide more housing, and, in appropriate locations, to provide social infrastructure and to contribute to town centre renewal.

Enfield, Haringey and Waltham Forest Councils have published detailed employment land studies that have informed and fed into their Local Plans. In Enfield, there is a healthy demand for local relatively low cost employment land as well as for larger strategic sites. The latest evidence suggests that whilst some existing buildings are no longer suitable for employment uses, there is no evidence that sites are no longer suitable.

The Greater London Authority, working with the boroughs have assessed the need for employment land release within the Opportunity Area. This work built a clear picture as to where Strategic Industrial land should be released or more intensively/effectively used through a consolidation process.

The opportunity to release industrial land from its protected designation has been made on various considerations including the characteristics of the area, neighbouring uses and the need to create a buffer between the retained heavy industrial uses on the Strategic Industrial Locations and residential uses.

As a result, some of the Strategic Industrial Locations and Locally Significant Sites in the Opportunity Area have been identified for mixed-use intensification given the opportunity of good public transport accessibility or planned improvements to it and the criteria referred to above. These are identified as the growth areas of Tottenham Hale and Blackhorse Lane, Meridian Water in Central Leaside and Ponders End. Changes to these Strategic Industrial Location designations have been brought forward through the individual boroughs' Local Plan processes and are shown in Fig.2.1.

The released land for medium to high density mixed-use developments around the transport hubs/growth areas coupled with the consolidation and renewal of industrial estates, will create vibrant places to live and work all set within the unique landscape of the Lee Valley and its regional park.

## Existing industrial areas

The existing industrial estates in the area have a number of strengths including proximity to the M25 and Stansted Airport. They work well as a centre for the distribution and logistics industries and have potential for further growth.

In accordance with London Plan policy 4.4 which affirms a rigorous approach to industrial land management, the remaining Strategic Industrial Locations will be safeguarded and retained. The introduction of non-industrial uses would compromise the function of strategic industrial land. As such the redevelopment of these industrial locations for non-compliant uses are likely to be resisted by both the Greater London Authority and the boroughs.

However some of the industrial areas would benefit from a higher standard of management and maintenance. Though there are some vacancies, there is no evidence to suggest these sites are no longer suitable for employment use. The retention and renewal of the protected industrial land is therefore an important element to the success of the Upper Lee Valley.

A programme of high quality renewal and modernisation including infrastructure and environmental improvements should be developed and implemented in order to assist retaining anchor firms and attracting new business growth.

Following the redistribution of industrial land, the industrial retention and intensification will provide the potential for the creation of new jobs within the Opportunity Area. The focal Strategic Industrial Locations to be retained are Freezywater, Innova Park, Brimsdown, Redburn Trading Estate, Meridian Business Park, Aztec 406, Edmonton Eco Park, Montagu Industrial Estate (the northern part), Eleys Estate and Harbet Road Industrial Estate.

It is estimated that the growth areas should be able to accommodate 13,700 jobs whilst the opportunity area as a whole should be able to provide 15,000 jobs.

### New industrial growth sectors

The North London Strategic Alliance published the Upper Lee Valley Economic Study in 2008 which identified four sectors of economic growth that should be supported to unlock the potential of the Opportunity Area. These sectors are listed below:

1. Growth centred around a **green and blue strategy** to link the visitor economy to the reinvigoration of the Lee Valley Regional Park offering better sport and recreation facilities, providing opportunities for new development along the waterways and using the improved quality of place to appeal to potential investors.
2. Growth of the **lifestyle economy** has the potential to strengthen the local and London visitor economy, the 2012 Legacy and economic benefits of new mixed-use housing developments.
3. Growth of the **knowledge economy**. Securing higher education/further education investment and interest in the Upper Lee Valley. Clear links between education, training and the economy should be made to attract education related industries to the Opportunity Area.
4. Growth centred around **moving and making**. Continuing to provide a strong logistics, distribution and advanced manufacturing sectors. Supporting existing business to maintain the Upper Lee Valley's strong position in an increasingly competitive market. This includes unlocking new opportunities such as energy generation, green technologies and resource management.

### Opportunity for a Green Enterprise District

The Upper Lee Valley has many of the benefits of a Green Enterprise District. These include well-connected industrial land, existing waste facilities, a history of employment uses, plans for a Lee Valley Heat Network and the Regional Park at its heart.

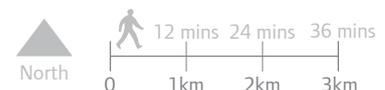
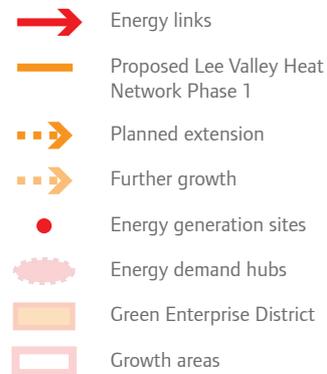
The imperative to address climate change will make green technology and green industry the most significant growth sector for the twenty-first century. Waste management operations and associated green industries have the potential to bring a number of economic benefits to the Upper Lee Valley including direct job creation, associated business operations linked to the re-use of by-products and potential energy and heat generation.

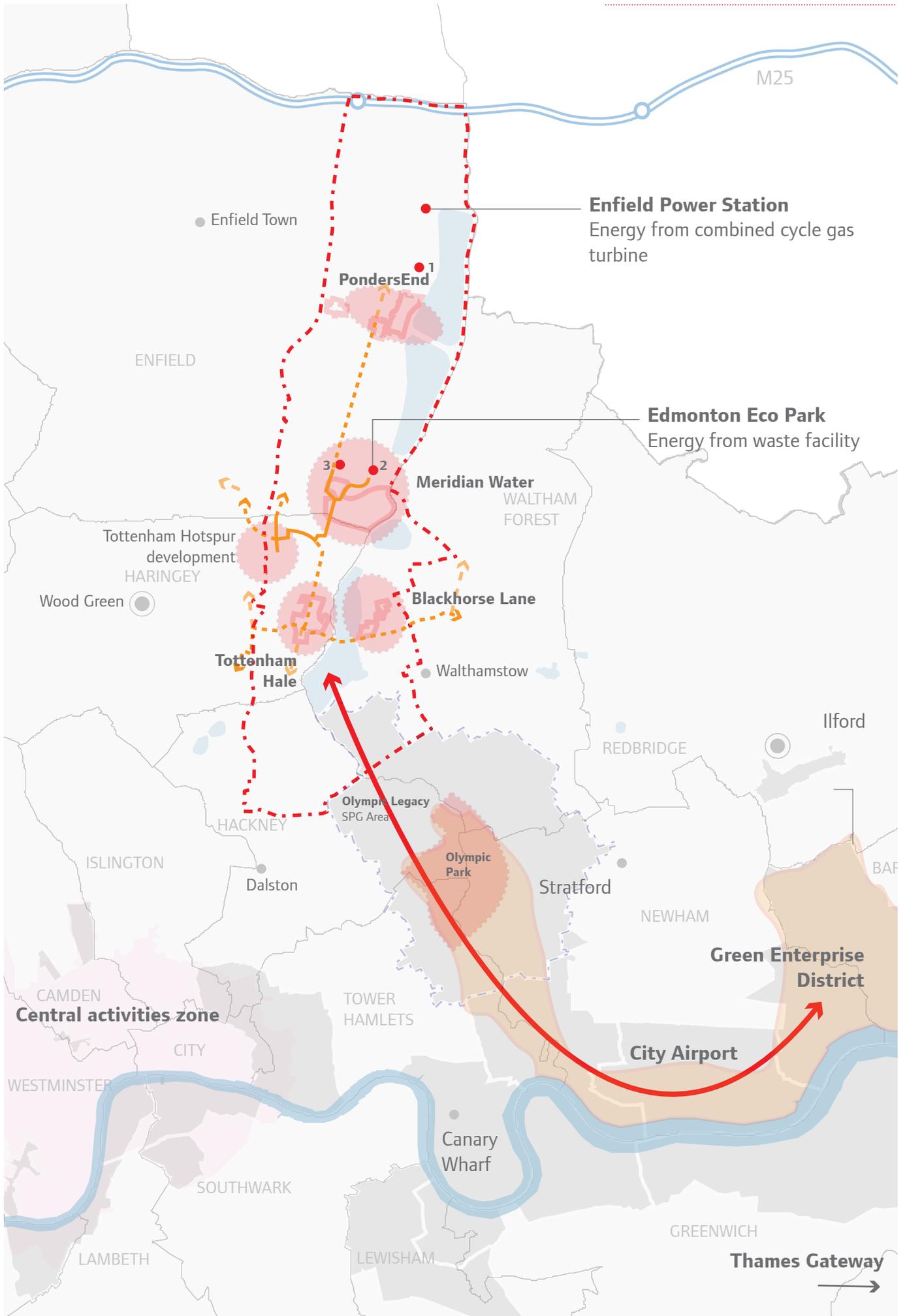
Green industries include businesses engaged in reducing the carbon footprint of households and businesses and the management of waste. A number of businesses in the Upper Lee Valley are engaged in producing energy, managing and processing waste from domestic and commercial sources, installing energy saving features in properties and manufacturing fuel and packaging from recycled materials. The largest include Johnson Matthey, a world leader in catalytic systems and exhaust emission control located in Brimsdown and employing around 260 people. Enfield’s two power stations employ around 200 people and are located in Brimsdown. Metal and Waste Recycling Limited based in the Central Leaside area provide waste management for factories and employs around 300 people.

Therefore, there is significant potential and opportunity to develop green waste technologies in the Upper Lee Valley to complement the Green Enterprise District, which currently stretches from the Thames Gateway through the Lower Lee Valley to the Olympic Park. The Green Enterprise District is already home to the Sustainable Industries Park and the London Thames Gateway heat network. Consideration should be given to extending the Green Enterprise District into the Upper Lee Valley.

### Energy generation sites

1. Johnson Matthey
2. Edmonton Eco Park
3. Kedco Biomass Gassification (planned)





© Crown Copyright and database right 2013. Ordnance Survey 100032216

Fig. 2.2 Opportunity for a Green Enterprise District for the Upper Lee Valley

## 2.2 New housing

The development capacity studies with the associated transport study undertaken by the Greater London Authority and the Councils form the baseline for examining the development potential of the Opportunity Area. This assumes that all development sites coming forward will have adequate transport provision and meet the London Plan requirement for open space provision and contribute to strategic open space provision in the form of enhanced access to the Lee Valley Regional Park and improved east-west connections across the valley. This identifies the potential to accommodate up to 20,100 homes in the Opportunity Area during the plan period.

An integrated and suitable mix of dwelling types, size and tenures are required including homes for single people, families and people with mobility difficulties. The precise proportion of family housing may vary from site to site, determined by criteria such as local character, existing built form, flood risk, proximity to social infrastructure, and to parks and open spaces.

The Canal and River Trust (the former British Waterways) is also keen to increase the number of permanent home moorings on the offside of the Lee Navigation, or in offline mooring basins and docks. Residential moorings can provide an affordable type of housing which helps to create an active waterfront environment.

## 2.3 Mixed-use

Many of the most successful places in London are mixed-use areas, with a range of residential, commercial, retail and other uses.

Given the large area covered by this Framework, there is not a single broad-brush mix of uses that would be appropriate across the area. The sub area sections of this Framework provide more detailed guidance on the characteristics each area should focus on.

In general however, mixed-use should be focussed in town and district centres, in areas with good public transport accessibility or with planned improvements to accessibility, and where building form and scale supports medium to higher density development.

More effective use of land around the out of town retail sheds offers an excellent opportunity to create a new sense of place and contribute to housing and jobs delivery. The conversion and re-use of heritage industrial buildings provides particular opportunities for introducing mixed-use given their flexible floor-plates, robust design, and often high floor to ceiling heights.

Although some Strategic Industrial Locations are being released, new developments coming forward on them should continue to provide some employment floorspace. The GLS site in Tottenham Hale, for instance, contains both high density housing and retail and office uses. New developments could accommodate flexible work space in addition to office space that could help promote employment growth sectors.

## 2.4 Retail

The Upper Lee Valley contains both town centre and out of centre retail areas. The town centres are located along the A10/A1010 spine road serving the local community. The out of centre retail stores, such as the Ikea, Tesco and Ravenside Retail Park in Central Leaside have a wider catchment area due to their proximity to the A406 North Circular. Both sectors are key drivers of the local economy and are major employers for the local community. The success of both retail sectors is therefore crucial to the regeneration of the Upper Lee Valley.

New and existing retail facilities in growth areas have an important role in providing access to the facilities needed by the existing and new population, whilst assisting with place-shaping and providing local employment opportunities. As such, renovating the historic shop fronts on the A10/A1010 Corridor could improve the experience of high street shopping. Tottenham Hale, Seven Sisters and Bruce Grove should focus on their retail and leisure offer to reinforce the High Road as the heart of business and community life – see Chapter 9 for further information. Any increase in retail in the growth areas will need to be subject to retail impact assessments.

Parts of the Opportunity Area have poor access to district and major town centres but good access to out of centre shopping provision mostly in the form of retail parks (Fig. 2.3). These retail parks should be integrated into the new mixed use development with housing provided above the retail elements. This may include some increase in the overall quantum of retail. These reconfigured retail developments would support the creation of new places and communities.

The provision of mixed-use development in the Tottenham Hale and Central Leaside growth areas will provide the opportunity to plan for complementary retail uses to support the viability and vitality of the existing town centres to reshape the retail offer in the area. A new district town centre in Tottenham Hale will be complementary to the mixed use development and the improved transport interchange. Mixed use development at Blackhorse Lane should also secure the provision of a new neighbourhood centre to meet the needs of the local community.

### Out of town retail

1. Southbury Leisure Park
2. Mandeville Retail Park
3. Ravenside Retail Park
4. Glover Drive Retail Park
5. Tottenham Hale Retail Park





Fig. 2.3 Existing town centre and out of town centre retail locations

© Crown Copyright and database right 2013. Ordnance Survey 100032216



# Chapter

# 03

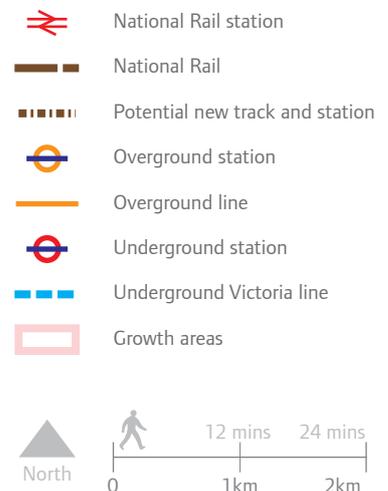
# TRANSPORT

3.1	Introduction	34
3.2	The transport vision and challenge	40
3.3	The committed network	50
3.4	Improving rail connectivity	52
3.5	Roads and surface transport	58
3.6	Priorities for transport to support growth	66

### 3.1 Introduction

Realising the regeneration and growth objectives for the Upper Lee Valley must be founded on a transport network that is truly integrated with land uses, establishes and maintains access to opportunities for all and achieves the highest environmental standards.

The Opportunity Area benefits from some excellent local, regional and national public transport connections. The proximity to Stansted Airport offers fantastic opportunities for improved international connections, and the Opportunity Area’s rail transport infrastructure (Fig. 3.1) has the ability to strengthen links with central London. The parallel West Anglia Main Line (the Main Line) and Southbury Loop rail lines run the length of the Opportunity Area, although some stations currently receive an infrequent service at irregular intervals through the day. At the southern end of the Opportunity Area, the Victoria line provides a fast and frequent route into central London through interchanges with the Main Line at Tottenham Hale and the Southbury Loop at Seven Sisters.





© Crown Copyright and database right 2013. Ordnance Survey 100032216

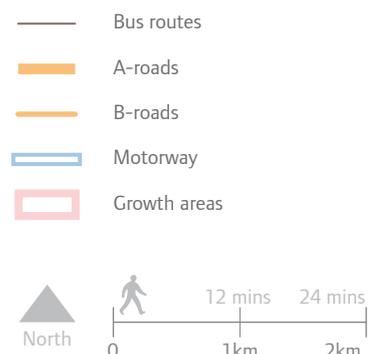
Fig. 3.1 Rail, Underground and Overground networks

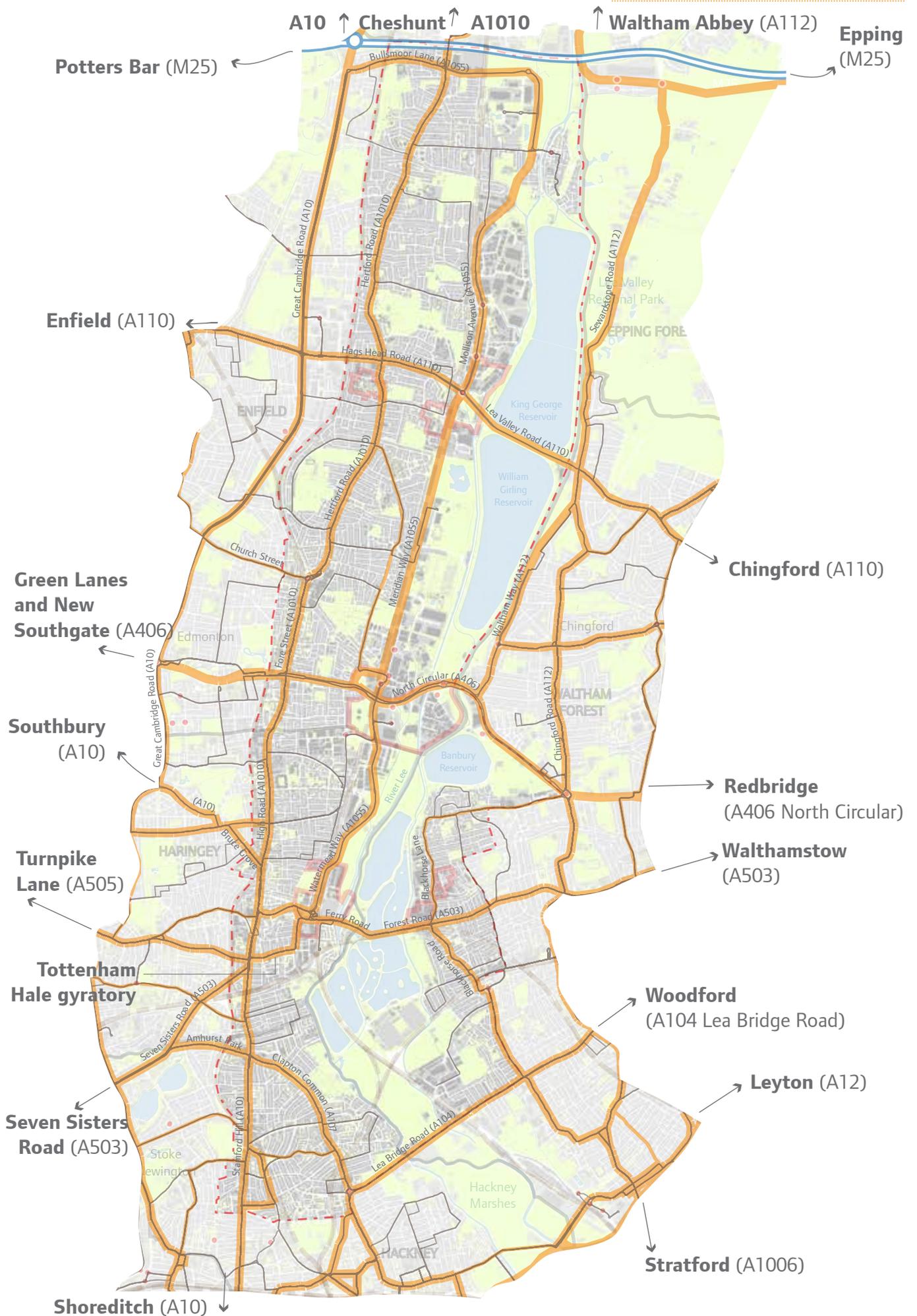
The road network largely centres around three parallel radial road routes (the A10, A1010 and the A1055), which are intersected by two high capacity orbital routes (the M25 and A406 North Circular) and a further important orbital route, the A110 (see Fig. 3.2).

The bus network provides good connections to town centres in the Opportunity Area, especially on the A1010/A10 Corridor. Some areas currently have a low density scale of development resulting in comparatively low levels of bus demand and corresponding lower frequency services.

The Lee Valley Regional Park presents excellent opportunities for recreational walking and cycling. However, the River Lee itself, the existing land use patterns of large amounts of open space and mixed industrial land as well as the reservoirs, can serve to restrict orbital movement in some places, particularly for pedestrians and cyclists.

This chapter sets out the role that transport and movement will play in facilitating sustainable growth in the Upper Lee Valley. After an overview of the strengths and weaknesses of the existing networks, it establishes a strong vision for transport and discusses relevant interventions which could help meet this. It concludes with a list of transport priorities which should assist the plan making process, development decisions and when developing funding strategies.





© Crown Copyright and database right 2013. Ordnance Survey 100032216

Fig. 3.2 Existing road network

## Profile of existing trips

Data from Transport for London's (TfL) London Travel Demand Survey 2008/09 – 2010/11 indicates that around 650,000 trips originate from the Upper Lee Valley on a typical day, approximately 750,000 daily trips are made by residents of the Opportunity Area. The mode share of Upper Lee Valley residents is slightly more inclined towards public transport than the London average. Around half of trips by residents of the Upper Lee Valley take place wholly within the area and around 8% are to/from central London.

The table below demonstrates the challenge that exists to increase public transport and walk/cycle usage amongst those who travel into the Upper Lee Valley from other areas. Improving public transport, walk and cycle links between the Upper Lee Valley and neighbouring areas, as well as within the valley, must therefore be carefully considered in development plans.

	Public transport	Car/ Other Private	Walk/ Cycle
<b>Trips originating from Upper Lee Valley</b>	29%	39%	32%
<b>All trips from residents</b>	33%	36%	32%
<b>London average (2010)</b>	29%	37%	34%

Source: Transport for London

## **Growth**

A growth in population of 24% and in employment of 20% between 2007 and 2031 will generate over a 20% increase in peak period trips to, from and within the valley (Upper Lee Valley Transport Study, November 2012). Adding these trips to the existing transport network, much of which currently operates at or near capacity, would, without network enhancements, lead to increasing road congestion and public transport crowding. This presents the opportunity to make a strong case for transport interventions to boost competitiveness and support sustainable growth.

Whilst the level of development proposed will not be enough to radically alter travel patterns across the entire Opportunity Area, the intensification of development in some locations is expected to lead to an increase in shorter distance trips as the provision of goods and services is intensified within the growth areas. Shorter trip distances, coupled with improved walking and cycling routes, will assist in reducing the need to travel by motorised modes.

Incremental increases in capacity at Stansted Airport, as well as the realising of the economic and development potential of the wider London-Stansted-Cambridge-Peterborough corridor, will continue to play an important role in supporting growth in the Upper Lee Valley.

## **The Strategic Transport Study**

Throughout this chapter, reference is made to the Strategic Transport Study, which was conducted by TfL in order to identify the challenges and potential solutions to improved transport infrastructure in the Upper Lee Valley. The study quantifies the existing and future growth scenarios and assesses the extent to which the transport network can accommodate the growth outlined in this document. In turn, this has allowed for a range of intervention packages to be identified and tested. A summary of the results of the study is presented in TA3 of this document, although significantly greater detail is available in the study itself, which is available from TfL upon request.

## 3.2 The transport vision and challenge

**The vision for transport proposed for the Upper Lee Valley is to:**

### **1. Create a transport network which meets the objectives of the Mayor's Transport Strategy:**

- Supports economic development and population growth by balancing capacity and demand, establishing excellent connectivity and being efficient;
- Enhances the quality of life of its users by fostering a culture of walking and cycling through improved infrastructure, public realm and air quality;
- Improves safety and security of its users delivering better links to public transport nodes;
- Improves transport opportunities of all its users by being accessible and well connected to adapt to the changing population;
- Reduces transport's contribution to climate change by encouraging a modal shift away from the private car and supporting green infrastructure;
- Supports the legacy of the 2012 Olympic and Paralympic Games.

**2. Exploit the Upper Lee Valley's international, regional and local connections, and enhance these further:**

- The Upper Lee Valley should be an integrated part of the broader axis of growth and regeneration, as well as the north London sub-regional transport network;
- Opportunities for improving access and approaches to local train stations and the public transport network should be considered;
- Growth should make the most of the green credentials of the Upper Lee Valley to create attractive walking and cycling connections;
- The strategic role of the existing walking and cycling routes, particularly in the Lee Valley Regional Park, should be recognised.

### Rail networks

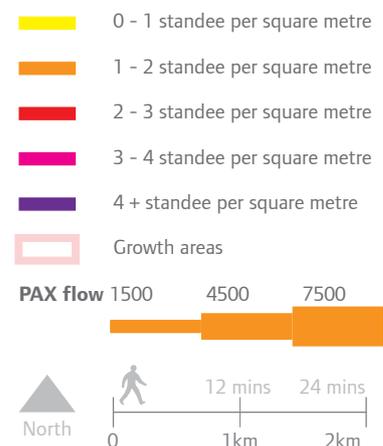
The rail network serving the area is predominately radial, underpinning the Opportunity Area’s strategic position in the growth corridor. The twin-tracked nature of the Main Line constrains the ability to improve the frequency and capacity of stopping services without adversely affecting journey times for the ‘fast’ longer distance services. As a result, many stations which are well placed geographically to serve the Opportunity Area and around Tottenham Hale and Stratford, receive only a low frequency service. The relatively infrequent half-hourly service to Stratford serves to limit rail accessibility, placing further pressure on alternative modes. This is a major constraint on growth (Fig 3.3) and fails to exploit the Valley’s proximity to Stratford economic hub.

### London Underground

The Victoria line provides a high frequency orbital and radial rail service at Seven Sisters, Tottenham Hale and Blackhorse Road, all providing interchange with other rail services. Due to the attractiveness of this service, peak hour demand exceeds capacity on the trains and at Tottenham Hale station, where the existing layout of platform and ticketing facilities are unsuited to accommodate future growth. The crowding on the line is not severe within the Opportunity Area itself but arises south of Finsbury Park. Growth across London will continue to place considerable pressure on the capacity of the Victoria line.

### London Overground

The Gospel Oak – Barking Overground line provides a key orbital service with stations at South Tottenham, Blackhorse Road and Walthamstow Queen’s Road. London Overground has carried out an incremental programme of improvements, including completing the circular route around London in 2012, refurbishing all stations to provide improved passenger facilities, better security, new rolling stock and more frequent services. The electrification of the line was confirmed by central Government in June 2013.





© Crown Copyright and database right 2013. Ordnance Survey 100032216 Source: Transport for London

Fig. 3.3 National Rail crowding and passenger flow AM Peak 2031 (growth without further interventions)

## Roads

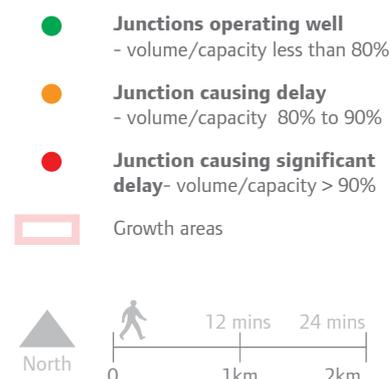
The A10 Great Cambridge Road, A1010 Hertford Road and A1055 Meridian Way play important roles in connecting the communities of the Upper Lee Valley. Strategic roads such as these are subject to a wide range of competing demands, and a high quality road network is essential to supporting walking and cycling, buses and freight transport.

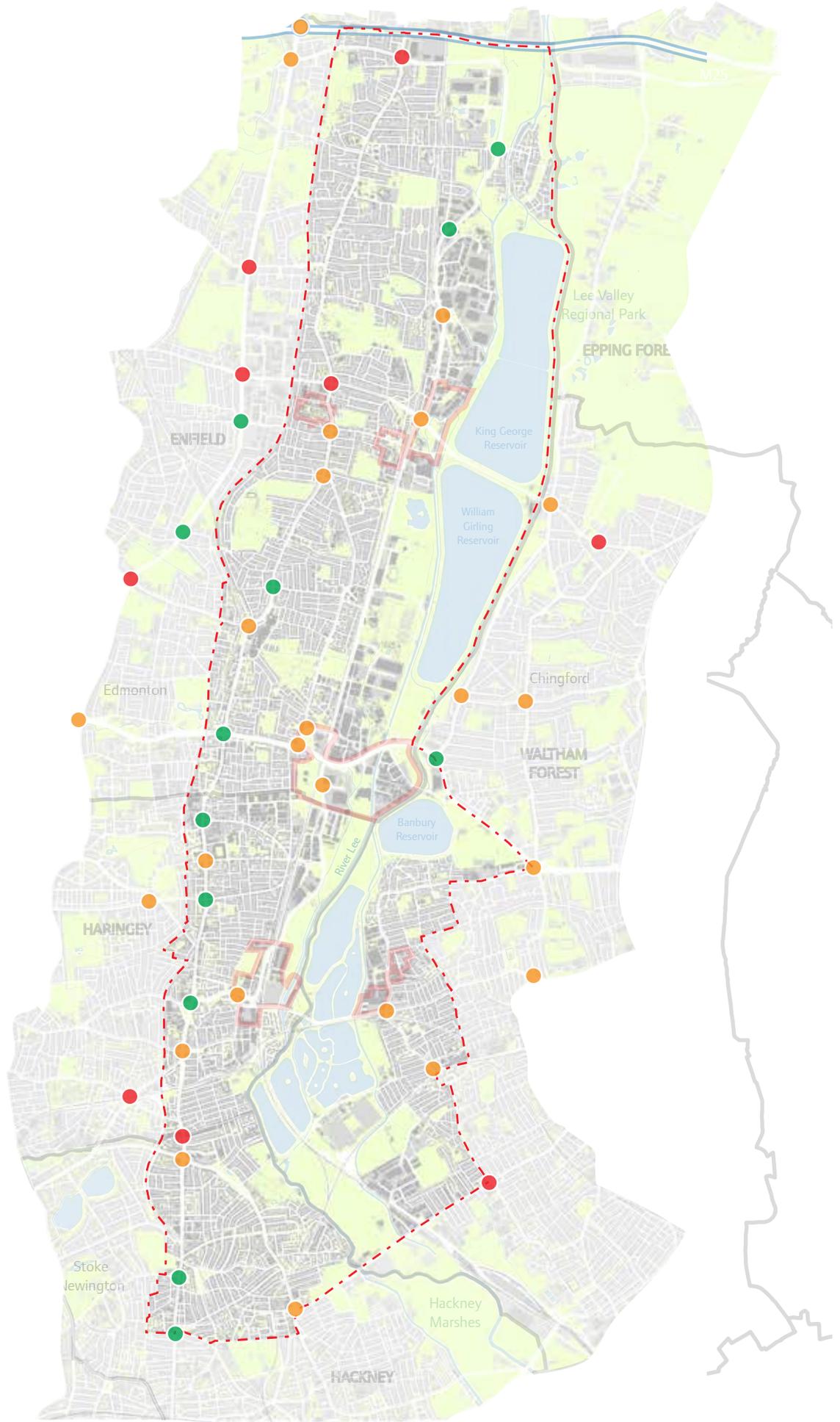
For example, the A1010 sees the 'High Street' functions of town centres such as Edmonton Green, Bruce Grove and Seven Sisters competing with freight movements, buses and other general traffic. Locations where the two principal orbital routes (the M25 to the north and the A406 to the south) meet the primary radial routes act as gateways for freight and traffic into the Upper Lee Valley. The A1055 Meridian Way/Bullsmoor Lane caters for a particularly high number of freight movements.

Fig. 3.4 shows the existing level of congestion experienced at key junctions. Generally, this congestion occurs as a result of limited capacity at junctions and in places, traffic demand exceeds capacity. Maintaining reliability at these locations is important for the area's competitiveness. Given the geographical barriers presented in the Opportunity Area, local east-west movement is constrained to three 'crossings' at A104 Lea Bridge Road, A503 Forest Road/Ferry Lane and A110 Lee Valley Road.

Indirect access to the M25 has an adverse effect on the perceived road accessibility to the Opportunity Area, as well as more specifically congestion, pollution, amenity and safety on A1055 Bullsmore Lane. To the south, the single carriageway, inner-city nature of the A10, A107 and A1006 constrains traffic flow in and out of central London and neighbouring growth areas at Stratford, the Olympic Park and broader Lower Lee Valley.

The study demonstrates that as a result of a 7% overall increase in traffic and a 4% reduction in average speed by 2031, there will be a notable worsening of junction performance, partly as a result of growth. Fig. 3.5 shows the likely future level of congestion at key junctions.





© Crown Copyright and database right 2013. Ordnance Survey 100032216 Source: Transport for London

Fig. 3.4 Congestion at key junctions 2008 weekday AM peak

## Bus network

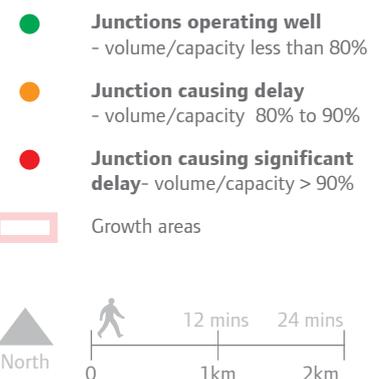
The mode share for buses in north London is the highest of the London sub-regions. The bus network in the Upper Lee Valley is extensive, providing both radial and orbital connections. The A1010 corridor from Tottenham Hale to Edmonton Green and Turkey Street has a particularly high bus usage and this correlates closely with the Opportunity Area's pockets of high population density and relatively low car ownership. Whilst there are some areas that are less well served, these largely consist of low density industrial areas or undeveloped sites where demand is not currently perceived to justify increased service provision.

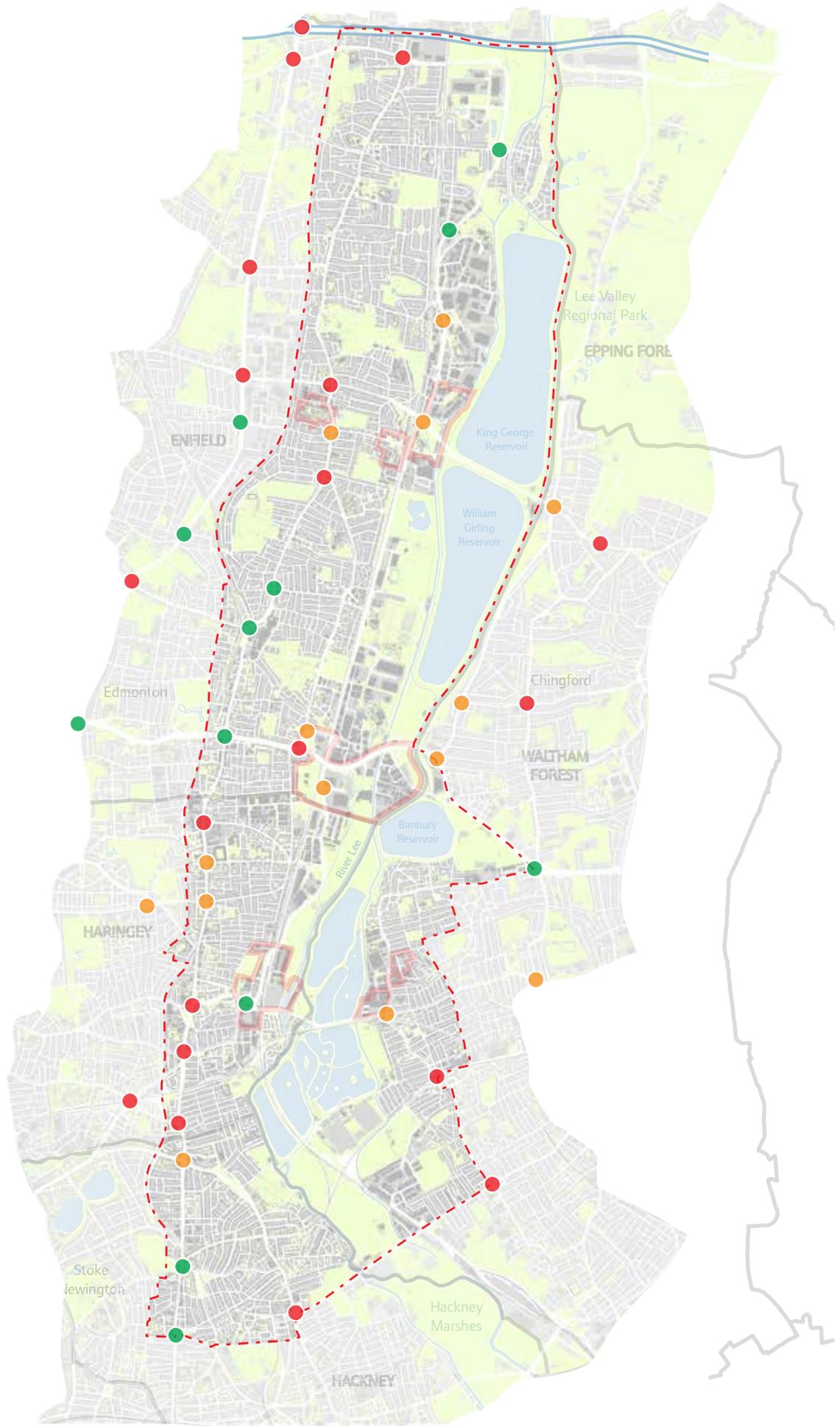
The bus network will come under strain as a result of growth in the Opportunity Area and there will be a need to improve bus services to cater for the extra demand. Increased road congestion has the potential to increase journey times, and the network may need to be re-aligned to support the growth areas. Bus garaging facilities should also be accommodated through growth as appropriate, and the protection of such infrastructure is governed by Mayoral policy and guidance.

## Freight

The Upper Lee Valley comprises one of the largest clusters of industrial estates in London and this is one of the area's major assets. Much activity is anchored to the strategic north-south routes into London from neighbouring counties. Heavy peak hour traffic flows can delay freight movements, as can limited access to/from the M25.

There is a need to ensure that freight journeys are efficient and rationalised to reduce the total number of trips and to avoid peak times on the road network. The new industrial geography envisaged by this planning framework, and the growth of new eco-industries, emphasises the importance of devising alternative methods of consolidating freight and transporting it by means other than on the roads. The River Lee offers the opportunity to exploit water based transport where appropriate, and similarly there may be potential to shift some freight to the railways, albeit capacity for freight service is currently constrained by infrastructure limitations and high passenger service demand.





© Crown Copyright and database right 2013. Ordnance Survey 100032216 Source: Transport for London

Fig. 3.5 Congestion at key junctions 2031 weekday AM peak (growth without further interventions)

## Cycling

The Lee Valley Regional Park connects the growth areas of the Opportunity Area and has potential to act as a catalyst for the continued uptake of both recreational and regular day-to-day cycling. Dedicated cycle paths and greenways are well used, particularly along the river towpaths, and offer an uninterrupted network across the valley (except at Central Leaside). The National Cycle Network Route 1 runs north-south through the valley and connects Tottenham Hale and the Docklands. Despite this, infrastructure and the pattern of industrial land use can make cycling difficult in the Upper Lee Valley. The high traffic volumes on the main carriageways, poor surfacing and lighting around existing routes, and poor air quality can make cycle routes unattractive.

Interventions are needed to overcome these significant barriers and foster a stronger culture of cycling in the Upper Lee Valley to meet and exceed the Mayor’s target for a cycling mode share of 5% by 2026.

## Walking

The extensive pedestrian network is compromised by missing key links and/or a poor environment which serve to isolate key development areas. The major challenge for walking is to improve its attractiveness for shorter trips which can be achieved by improving pedestrian environments, making routes more easily recognisable, and improving safety to centres and transport nodes. The paths along the River Lee and River Lee Navigation offer good walking environments, but these are predominantly for leisure usage. The rivers and reservoirs often act as barriers, particularly where routes are badly lit, or where access points are limited.

Improving conditions for pedestrians often focuses on site-specific issues, so addressing the role of individual development proposals is key to overcoming many barriers to walking. Linking individual developments into the wider walking network is important, making use of an appropriate wayfinding system, such as Legible London. The Mayor is seeking to increase the London-wide walking mode share above its current share of 24%.





© Crown Copyright and database right 2013. Ordnance Survey 100032216 and Sustrans

Fig. 3.6 Existing cycle and walking networks

### 3.3 The committed network

Before defining how the objectives for transport in the Upper Lee Valley might be met, it is first important to consider what has been committed and funded on the existing network. At the time of this document's publication, the following commitments have been made:

- Over 40% capacity increase on the parallel running West Anglia Main Line and Southbury Loop lines committed between 2009 and 2014, largely as a result of train lengthening.
- Enhancements will be made to introduce a 4 trains per hour service on the Main Line between Stratford, Tottenham Hale and Angel Road (the STAR scheme), to be delivered in the period 2014-2019.
- Funding is in place for a new station to be opened at Lea Bridge.
- The electrification of the Gospel Oak to Barking Overground line was confirmed by central Government in June 2013.
- The Victoria line has undergone capacity and journey time improvements that have resulted in a capacity uplift of 21%. Peak time frequency has increased from 27 trains per hour to 33 trains per hour - the upgrade was completed in 2013 with the introduction of a new timetable. A similar capacity uplift on the Piccadilly line is also planned.

- Work has begun on the removal of the gyratory at Tottenham Hale which will improve conditions for pedestrians and cyclists as well as improve access for residents and businesses. This includes the creation of a new public square and bus interchange.
- The Highways Agency has plans to widen sections of the M25 motorway between junctions 23 and 27, immediately to the north of the Opportunity Area.
- The completion of the Tottenham to City Cycle Superhighway 1 in 2015 will improve north-south linkages and provide incentives for people to choose to cycle into and from central London.

With this in mind, this planning framework establishes a transport strategy based on the themes above to help meet the transport vision.

## 3.4 Improving rail connectivity

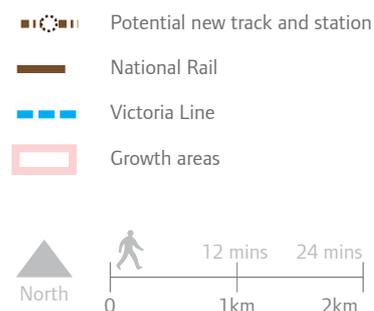
### West Anglia Main Line

The low frequency of local services on the Main Line is a constraint on the Upper Lee Valley potential. Growth should be matched by an increase to the public transport accessibility of development sites brought by the delivery of a regular four trains per hour (4tph) service calling at all stations. This is an agreed goal consistent with the Mayor's vision for London's suburban rail network. This can be achieved through the introduction of additional tracks on land to the east of the existing tracks (3/4 tracking) to allow more frequent local trains to operate independently of the faster services. Any additional infrastructure could largely be accommodated within the existing rail lands.

Given the need for significant investment in track and stations to achieve a regular 4 tph throughout the Main Line, the rail industry is developing a phased programme of enhancements. Initially, enhancements will be made to introduce a 4 tph service between Stratford, Tottenham Hale and Angel Road (the STAR scheme). This will strengthen the link between the Upper Lee Valley and Stratford, the Lower Lee Valley and the Isle of Dogs, and is a vital catalyst to unlocking development potential at Tottenham and Meridian Water. This will also enhance the role of the interchange at Tottenham Hale, improving journey times to the City and the West End.

The funding for the STAR scheme (which is expected to cost in the region of £72m) is being sourced from Network Rail, the Mayor's Growing Places Fund, and TfL (as part of the Tottenham Hale station improvements). The works will be delivered within Network Rail's Control Period 5 (2014–2019). The Government also confirmed in June 2013 that powers over the West Anglia suburban networks would be devolved to the Mayor and TfL by the end of 2015, allowing significant improvements to be made to the quality of these stations and services. The 4tph service between Stratford and Angel Road may be included when the new TfL services start operating.

TfL is also working with Network Rail to consider opportunities for 3/4 tracking further up the Lee Valley, which would continue to unlock opportunities for regeneration in the Opportunity Area. The delivery of the Crossrail 2 'regional' option requires full four-tracking of the line between Coppermill Junction and Broxbourne.





© Crown Copyright and database right 2013. Ordnance Survey 100032216

Fig. 3.7 Improving rail connectivity

## Reopening Lea Bridge station, Hall Farm Curve and other rail improvements

Plans to re-open the station at Lea Bridge at the southern end of the Opportunity Area, allowing a 4tph service to stop on the rail line between Tottenham Hale and Stratford has funding in place and is being progressed. When realised, Lea Bridge station would improve public transport accessibility to a comparatively poorly served area.

Enhanced services between Stratford and the Main Line will assist in improving accessibility for the resident population of the Upper Lee Valley to employment opportunities and services. This could play a vital role in realising the legacy of the Olympic and Paralympic Games, providing excellent links between the Park and the Lee Valley.

Furthermore, reusing the alignment along the Hall Farm Curve for rail services has support from a number of stakeholders, which is one of the changes required to enable a direct link between Chingford and Stratford, calling at all intermediate stations.

There are also aspirations to close the Northumberland Park level crossing. In the peak hours, the length of time that traffic is able to cross the tracks is limited, encouraging car drivers to attempt unsafe crossings as the gates are closing. This will worsen should service frequencies increase on the line. As part of the objective to achieve an increase in local Main Line rail services, an alternative to this crossing will need to be provided.

TfL wishes to see all of the above rail improvements supplemented by more general measures to address timetable shortcomings (resilience/ stopping patterns/improved journey times) and to provide an improved passenger experience.

### **London Underground**

The Victoria line offers excellent connections to central London, although its popularity results in high levels of passenger crowding. Despite the 21% uplift in capacity brought by the upgrades to the line, completed 2013, population growth in the Upper Lee Valley will exacerbate this crowding. Within 10 years the crowding relief achieved through the upgrade will likely have been lost to increased demand. Therefore, a longer term solution to the challenge of crowding on the Victoria line must be sought. This could include improvements to the service provision between Seven Sisters and Walthamstow Central with the aim of delivering the same level of service achieved on the rest of the line and strengthening the role of Tottenham Hale as a gateway to the Upper Lee Valley.

Persistent overcrowding challenges on the Victoria line reinforces the case for an alignment of Crossrail 2 to relieve pressure.

### **London Overground**

In addition to its electrification, which was confirmed by central Government in June 2013, TfL is investigating an extension to the Gospel Oak-Barking line to support housing and regeneration in Barking Riverside.

## Crossrail 2

Crossrail 2 is a proposed new line across London currently being investigated by TfL and Network Rail. The proposed route would run broadly in a south-west to north-east corridor across London, potentially operating along the West Anglia Main Line through the heart of the Upper Lee Valley Opportunity Area. The scheme could help address a range of London-wide transport challenges, including crowding on a number of Underground lines, congestion at National Rail termini and support development in opportunity areas, such as the Upper Lee Valley.

The earliest feasible opening date for Crossrail 2 is around 2029/30 - the end of the time horizon considered by this document. The introduction of a new high frequency all-stations service on the West Anglia Main Line through the Upper Lee Valley (including Northumberland Park, Angel Road and Brimsdown) could transform public transport accessibility and the viable density of development in the corridor. Crossrail 2 could be a catalyst for further intensification of land-use in the Upper Lee Valley, beyond that detailed in this document.

If Crossrail 2 were to serve the West Anglia Main Line it would provide a high frequency, direct service to central London with attractive journey times. Crossrail 2 has the potential to offer a long term solution to crowding on the Victoria line, as well as providing additional transport choices, resilience in times of disruption and faster journey times.

One option being considered resembles a 'metro' style railway, illustratively operating between Wimbledon and Alexandra Palace. This option would not directly serve the Upper Lee Valley area at all.

An alternative scheme would be a broader regional service, linking into the south-west London and north-east London suburban rail networks at either end of a central tunnelled core. Such a scheme could directly serve stations on the West Anglia Main Line, thus creating opportunities to achieve continued longer term growth beyond that detailed in this document. At Tottenham Hale, this option could deliver up to 10 trains per hour, adding at least 50% capacity to the West End compared to Victoria line on its own. A key requirement for developing this option will be the upgrading of the West Anglia Main Line.

At the time of publishing, the preferred alignment for Crossrail 2 is not identified and there is ongoing work by TfL and other stakeholders to appraise the benefits and feasibility of a range of options. Generally, however, the introduction of Crossrail 2 could play a vital in the transformation of the Upper Lee Valley's transport connections, competitiveness and status in London's economy.

### **Accessibility**

Of the approximate 24 stations located in or near the area covered by the Upper Lee Valley Opportunity Area Planning Framework, six currently offer step-free access between street and platform. Works are committed at a further four stations to deliver step-free access by the end of 2014.

Development and growth in the Opportunity Area has an important role in securing and delivering improvements in the accessibility of the transport system, including the continued roll-out of accessible bus stops, enhanced public realm, improved public transport vehicles, as well as step-free access works at stations.

## 3.5 Roads and surface transport

### Improving walking and cycling

The Mayor's Transport Strategy sets out the major change to the walking and cycling infrastructure to achieve a shift away from the private car and make the best use of the road space. This will reduce the number of short car trips and the demand placed on public transport. An increase in the average walk/cycle mode share across the Upper Lee Valley to 38% (an increase of 6%) is a realistic aspiration of this Framework considering the future targets of each boroughs' Local Implementation Plans (Enfield 32%, Haringey 40%, Waltham Forest 42% and Hackney 55%). These targets represent the scale of opportunity and reinforce the need for continued investment in walking and cycling infrastructure.

Development and transport investment in the Upper Lee Valley must put pedestrians and cyclists at the heart of public realm schemes. The Mayor's Transport Strategy reinforces TfL's commitment to invest in proposals which encourage greater cycling and walking. Further to training and education around the health and social benefits of walking and cycling, the provision of infrastructure and improvements to local routes are required to establish a 'web of connections' to make the Upper Lee Valley a much more walk- and cycle-friendly area.

The Lee Valley Walk links the growth areas within the valley on foot and cycle, particularly for leisure trips and recreation. Redefining or providing new links to connect the valley with surrounding growth areas, sites and town centres will boost the attractiveness of walking and cycling, such as the link between Meridian Water with Edmonton Green, introducing a Cycle Superhighway (Tottenham to central London), and the 'Walthamstow Wetlands' regeneration scheme. Fundamental to this will be the provision of secure and accessible cycle parking at new developments, improved safety for pedestrians, better public realm in town centres and around interchanges, and road enhancements offering greater priority to cyclists and pedestrians.

The All London Green Grid SPG (March 2012) sets a vision for green infrastructure across London, setting standards and providing the basis for partnership working to deliver a network of integrated green spaces to improve connections between where people live, public transport nodes and natural resources for leisure and recreation.

### **Better interchange at Tottenham Hale**

Given the convergence of a number of modes at Tottenham Hale offering rail links to Stratford, the City and central London, and bus links throughout the Opportunity Area, the transport interchange will come under increasing pressure in the future.

By 2021, demand in the station exceeds capacity in both the AM and PM peaks, primarily due to the small concourse and pedestrian circulation space, and the proximity of the London Underground gateline, National Rail platforms and station entrance. This will result in a severely congested London Underground ticket hall which will cause difficulty for passenger movement.

Externally, the station forecourt presents a complicated arrangement of bus and vehicular access routes, with bus station and stands located within the immediate forecourt, and further bus stops located in the proximity but outside the station area.

TfL is committed to delivering an improved interchange at Tottenham Hale. The surface interchange scheme will deliver a new, larger bus station including better arrangements for bus stops and stands, and a new public square, complementing the wider public realm improvements brought by the removal of the gyratory. This scheme is a priority for Haringey Council and TfL and an agreed funding package has been secured to deliver this. Within the station itself, TfL has developed options for relieving congestion. Discussions will continue between all stakeholders on how this will be funded and delivered.

## Managing the bus network

The TfL bus network is subject to a continuous review process which examines the route network in an area, involving engagement with stakeholders and the collection and analysis of data on usage trends, loadings and reliability. This enables the pattern of services to respond to changes in population and employment, as well as to changes to the public transport network generally. Supporting infrastructure should be protected and developed further alongside any changes (such as bus garages and standing facilities) in line with the Mayor's Land for Industry and Transport Supplementary Planning Guidance. TfL continues to work collaboratively with the boroughs to ensure that challenges of reliability, connectivity and capacity in the Upper Lee Valley are met.

The study considers a number of interventions on the bus network to understand the impact these might have on congestion and capacity of the wider transport network. This includes the introduction of two new routes (Brimsdown to Tottenham Hale and Tottenham Hale to Walthamstow) and extensions and frequency changes to a number of others. Poor east-west connectivity is a particular issue for the opportunity area, and addressing this should be given particular focus when determining appropriate interventions.

Note: The following bus service changes are indicative of those that could be required to support growth in the Upper Lee Valley. The appropriate package of bus services will be determined on a site by site basis in conjunction with the statutory planning process.

## Package of bus enhancements tested by the Transport Study

### New routes

- **LV1 from Brimsdown to Tottenham Hale**  
Meridian Way/Watermead Way with a frequency of 5 buses per hour
- **LV2 from Tottenham Hale to Walthamstow**  
Via Watermead Way, Angel Road, North Circular, Chingford Road and Hoe Street with a frequency of 5 buses per hour

### Extensions to existing routes

- **476 extension from Northumberland Park to Angel Road**  
Via Willoughby Lane
- **76 extension from Town Hall Approach Road to Blackhorse Road** Via Monument Way and Tottenham Hale
- **377 extension from Southbury to Chingford**  
Along Nag's Head Road, Lea Valley Road and Station Road
- **425 extension from Clapton to Tottenham Hale**  
Via Upper Clapton Road and High Road
- **41 extension from Tottenham Hale to Blackhorse Road**

### Frequency changes to existing routes

- **W3:** 12 to 14 buses per hour
- **34:** 7.5 to 9 buses per hour
- **41:** 12 to 14 buses per hour
- **76:** 8 to 10 buses per hour
- **149:** 12 to 15 buses per hour
- **230:** 5 to 6 buses per hour
- **243:** 11 to 12 buses per hour
- **253:** 12 to 14 buses per hour
- **254:** 12 to 14 buses per hour
- **377:** 2 to 4 buses per hour
- **476:** 7.5 to 9 buses per hour
- **491:** 4 to 5 buses per hour

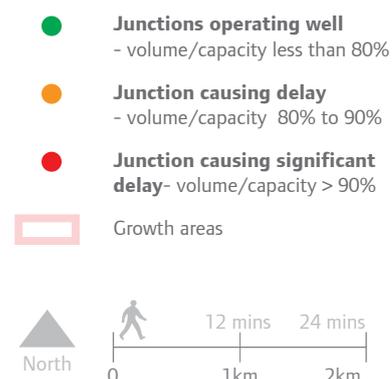
## Managing the road network

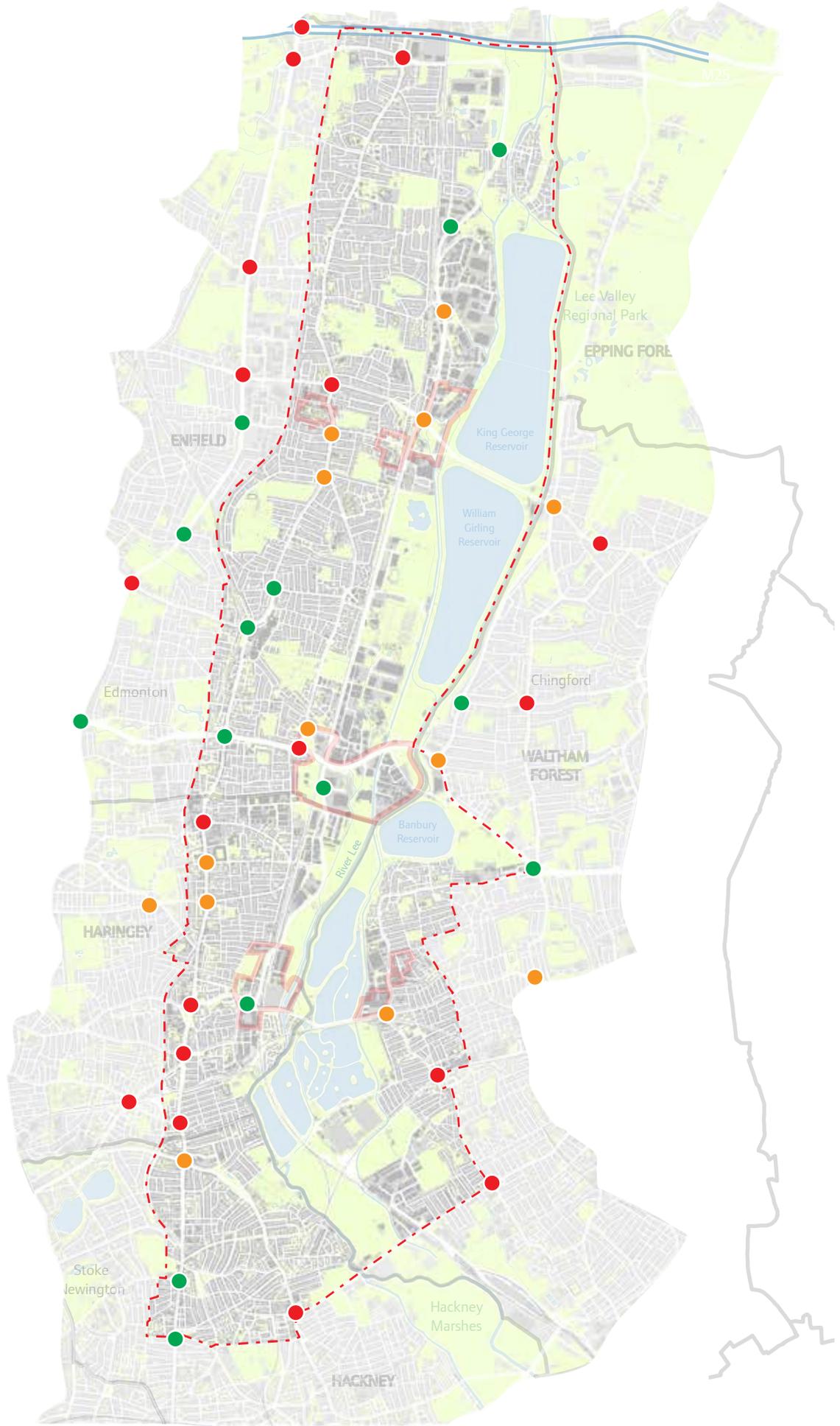
The road network will continue to play an important role in accommodating a variety of modes and providing access to areas of growth. Congestion is anticipated to worsen, however, and will remain a challenge on many of the Upper Lee Valley's roads. Managing congestion needs to be considered against other priorities, including improving road safety, ensuring access to and within key places by different modes, delivering a high quality walking and cycling environment and creating a sense of place. The interaction of these objectives requires careful management.

TfL wishes to see the A10, A1010 and A1055 managed as a single corridor, with an understanding of how these three routes interact with one another. TfL will also continue to work closely with the boroughs to develop long-term improvements to orbital connectivity, and the management of the A406 will be a key focus here. Supporting the transportation of freight will help support growth in the Opportunity Area, and ensuring good quality national and regional links, especially along the A406 and towards the M25, is central to this.

An important aspect of managing the road network is encouraging modal shift, and Fig 3.8 illustrates the 2031 AM peak period road congestion with a possible package of interventions, including a walk/cycle mode share of 36%. Better walking and cycling infrastructure will help deliver this. There are also opportunities to direct freight movements away from the roads and onto rail and water modes, further improving the quality of the environment around strategic highways. Areas where air quality and the physical environment are poor should be identified and improved.

Planning permissions should seek to enforce robust travel planning measures, through residential and workplace travel plans, construction logistics plans and delivery and servicing plans. These will ensure that opportunities are taken through development to reduce the impact future growth will have on road congestion.





© Crown Copyright and database right 2013. Ordnance Survey 100032216 Source: Transport for London

Fig. 3.8 Congestion at key junctions 2031 weekday AM peak (growth with further interventions)

## Connections to the M25

Improvements to rail and other infrastructure will be essential to relieving congestion and improving the environment in the Upper Lee Valley. Issues of connectivity and congestion on the road network will remain, however, as will the local impact of heavy goods vehicles travelling along A1055 Bullsmore Lane and Mollison Avenue, having a negative environmental impact. The opportunity should therefore be taken to consider the benefits of a package of measures which might assist in addressing the issues of poor connectivity.

TfL is working with Enfield Council to undertake technical analysis of the opportunities for improved highway connections between A1055 Mollison Avenue and the M25, the results of which will help determine appropriate next steps.

## Water transport

The use of water courses running through the Upper Lee Valley for the transportation of freight and construction spoil should be maximised, where possible. The River Lee links the growth areas and other development sites with the River Thames and rail infrastructure, and these could be used to greater effect to transfer some, particularly freight, trips from the road to the river. The Canal and River Trust (the former British Waterways), Enfield Council and TfL are currently looking into the feasibility of transferring waste and product from the Edmonton Eco Park and other development proposals along the Lee should investigate innovative ways of facilitating water transport further.

Balancing other constraints and demands (such as leisure) of the river will, however, have to be considered.

### **Improving air quality and reducing carbon dioxide emissions**

Improving air quality is a core objective of the Mayor's Transport Strategy and growth in the Upper Lee Valley should assist in taking this forward. The North London Sub Regional Transport Plan identifies high concentrations of nitrous oxide (NO<sub>2</sub>) at Tottenham High Road, Tottenham Hale, the North Circular and at Bullsmoor Lane. Beyond encouraging a behavioural change as above, development should make provision for the roll out of low or zero emissions vehicles, including the provision of supporting infrastructure and the development of low-emission vehicle fleets by private businesses.

London has a target of reducing ground based transport CO<sub>2</sub> emissions by more than 3 million tons/year by 2025. Development should help meet this target, again through the provision of low-emission infrastructure, but also through the better integration of land-use and transport to reduce the need to travel. Travel planning measures which reduce overall trip length and promote the use of public transport, walking and cycling are central to this.

## 3.6 Priorities for transport to support growth

From the quantitative results of the strategic transport study and a qualitative assessment of how issues of connectivity might affect growth, conclusions can be drawn to develop a preferred package of interventions and the steps necessary to achieve these.

1. A phased project to improve local services (a four trains per hour service) on the West Anglia Main Line is needed to deliver significant benefits – vastly improving both the frequency of service at stations and connections to Stratford and neighbouring growth areas. TfL and the boroughs will continue to work with the Department for Transport and Network Rail to identify opportunities for improving the level of service. Developer and landowner support for this is essential to help meet the cost of the supporting infrastructure.
2. Other improvements to the rail and Underground network are needed to help boost the area's competitiveness, through better connections to London and beyond. The persistent issues of crowding on the Victoria line south of the Upper Lee Valley at times of peak demand are anticipated to remain a long term challenge. Crossrail 2 is a project that, depending on chosen alignment, could offer a solution to the challenge of crowding on the Victoria line beyond 2031.
3. A long-term solution to issues of poor highway connectivity to the M25 should be developed. TfL and Enfield Council are working collaboratively to determine the most appropriate transport solution to this issue.
4. Smoother traffic flows on the road network will improve the quality of life for residents by increasing bus reliability, improving the safety and attractiveness of walking and cycling, and improving air quality. Further detailed modelling should be undertaken as part of the planning process at the key growth areas to determine specific interventions on the bus network.

5. Local connectivity can be enhanced through changes to the bus network. Walking and cycling links to serve growth locations can be improved to connect local centres and to reduce the need for longer distance trips. Barriers to the take up of cycling such as road safety fears and lack of secure cycle parking can be addressed.

On both a site specific and area wide basis, developer contributions could help meet some of the cost of implementing improvements to the transport network, under an appropriate pooling strategy. This should take into account the Mayor's Community Infrastructure Levy, and any other borough-wide levies.

Beyond specific transport interventions outlined above, the most important change to consider is to increase the attractiveness of walking and cycling. To achieve a 38% mode share is not only important to relieve road congestion and public transport crowding, but would also serve to deliver health benefits and reduce emissions of air pollutants and carbon dioxide. This can only be delivered if the existing pedestrian and cycle infrastructure is improved, new developments offer excellent pedestrian and cycling facilities and the existing attractive routes of the Upper Lee Valley are fully integrated into the broader network.

Development must exploit the enormous opportunities that the natural assets of the water ways and the Lee Valley Regional Park offer. These have the potential to be at the core of transforming the way people move around the area by creating a walking and cycling culture. Creating a 'web of connections' could make this area one of the most walk and cycle friendly areas in London. This can be delivered through relatively simple interventions, many of which can come forward on the back of planning proposals.