Chapter 10

INFRASTRUCTURE, IMPLEMENTATION AND DELIVERY

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10.1 Infrastructure, funding and investment sources

In order to achieve co-ordination and delivery of growth in the Upper Lee Valley, the need for considerable investment in infrastructure projects will be required. There are a number of funding streams available to deliver social and physical infrastructure, including:

- **Community Infrastructure Levy (CIL)**

  CIL will become the principal means of funding infrastructure through the development process. CIL can be spent across local authority boundaries suitable for delivering strategic infrastructure.

  CIL allows local authorities in England and Wales to charge a levy on new developments to raise funds to build the infrastructure to support growth. In London, there are two levies - a Mayoral CIL to raise funds for Crossrail and a Local Authority CIL to pay for a wide range of infrastructure including transport, open space, parks, schools, community and health facilities, leisure centres and energy.

  As CIL is simply a standard tariff, it can not be used to provide affordable housing or other site specific mitigation measures. Therefore, Section 106 agreements may still be necessary where applicable. The four boroughs are at different stages in calculating CIL charges for their areas. Up to date information is available on the boroughs’ websites.

  The Mayoral CIL came into force on 1 April 2012 to levy all new developments in London (except development for health and education facilities) to raise £300m towards the delivery of Crossrail. The rates for the boroughs in the Opportunity Area are as follows:

  - **Zone 2 boroughs** (Hackney and Haringey)
    £35 per square metre

  - **Zone 3 boroughs** (Enfield and Waltham Forest)
    £20 per square metre
• **The Greater London Authority family**  
  Funding has been made available from the Mayor’s Outer London Fund, the Growing Places Fund and the Mayor’s Recovery Fund. The GLA will also work with boroughs to bid for growth and innovation funding.

• **Local authorities**  
  Borough investment plans and investment agreements are directly relevant to the planning framework.

• **Planning obligations/ Section 106 agreements**  
  The traditional role of planning obligations to fund infrastructure is changing as a result of the introduction of CIL but in the short term they will continue to have an important role in delivering affordable housing, revenue costs and to address site-specific issues such as access.

• **Planning tariffs**  
  Tariff contributions can be pooled, matched with other funding sources and used to help deliver infrastructure in a timely and efficient way. A tariff for S106 contributions has operated in Blackhorse Lane since 2009.

• **Tax Incremental Financing**  
  Based on future uplifts in business rates, this form of financing could assist the delivery of specific projects. Tax Incremental Financing has not yet been applied in the UK, but its use could be explored.

• **Business Rate Supplement**  
  The introduction of a levy across businesses in the Opportunity Area.

• **Investment from other public bodies** such as the Lee Valley Regional Park Authority, Canal and River Trust (formerly British Waterways), the Environment Agency and Network Rail.

• **Third party charities and other social enterprises.**

• **Private sector firms** such as utilities companies.
10.2 Development Infrastructure Funding Study

The Greater London Authority working with the local authorities will undertake a Development Infrastructure Funding Study for the Upper Lee Valley Opportunity Area. Similar studies have been carried out for other Opportunity Areas including Vauxhall/Nine Elms/Battersea and White City.

The overall objective of the Development Infrastructure Funding Study (DIFS) for the Upper Lee Valley is to:

- Identify the critical enabling infrastructure necessary to deliver the growth;
- Provide an assessment of the capacity of development to fund this infrastructure, and identify funding gaps; and
- Recommend what alternative funding mechanisms might be available to fund the infrastructure.

The infrastructure to be assessed is that deemed to be ‘strategic’ and which has not been considered by the individual authorities’ Community Infrastructure Levy (CIL).

The extent of strategic infrastructure to be considered should be agreed with all parties.
10.3 Delivery mechanisms

A number of different delivery mechanisms exist that could be considered to help bring about the planning and regeneration objectives the Opportunity Area Planning Framework promotes. These include:

- Determining **planning applications** to make sure they comply with all relevant planning policies (local and strategic) and guidance and appropriately contribute to the wider needs of the Opportunity Area Planning Framework area,

- Implementation of **planning permissions**,

- Working proactively with the **private sector and landowners** to encourage investment and long-term involvement,

- Utilising **public sector funding, land and assets** to achieve objectives,

- **Compulsory purchase** to acquire land to deliver comprehensive development and infrastructure. This is particularly useful where sites are difficult to assemble through private negotiations - for example where there are complicated freehold and leasehold interests,

- Coordinating **strategies and investment** decisions by the local authorities and the Greater London Authority working together with boroughs, investors, the North London Strategic Alliance and the Lee Valley Regional Park Authority. Implementation and delivery groups exist for other opportunity areas. A similar model will be investigated for the Upper Lee Valley,

- **Co-ordination** between the Borough Infrastructure Studies, the proposed Development Infrastructure Funding Study, London Plan Infrastructure Plan and London West Anglia Group Infrastructure Planning Work,

- Aligning **statutory and non-statutory planning documents** – such as the London Plan, the Opportunity Area Planning Framework, Masterplans, Area Action Plans, Supplementary Planning Documents, best practice guidance and design briefs.
10.4 Monitoring and review

The Mayor’s vision, objectives and policies set out in this Guidance are based on a number of assumptions drawn from best evidence available when the document was prepared. Whilst this provides a sound basis for the direction and objectives set out in this guidance, it is important to recognise that circumstances can change and it may be necessary to adjust these priorities as the area evolves, needs change and financial circumstances alter.

The annual monitoring reports published by the Mayor and the boroughs will enable the Mayor and partners to identify emerging social, economic and environmental trends and ensure the framework is kept relevant and up to date.
## Appendices

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<th>Page</th>
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A1 Bibliography

Greater London Authority

- The London Plan July 2011
- Mayor’s Land for Industry and Transport Supplementary Planning Guidance September 2012
- Mayor’s Transport Strategy May 2010
- Mayor’s Rail Vision February 2012
- Housing Strategy and Housing SPG November 2012
- London Regional Flood Risk Appraisal October 2009
- All London Green Grid Supplementary Planning Guidance March 2012
- Delivering London’s Energy Future - The Mayor’s climate change mitigation and energy strategy October 2011

London Development Agency

- Upper Lee Valley Energy Report April 2010
- A10/A1010 Corridor – A Corridor of Opportunity in the Upper Lea May 2010

Transport for London

- Upper Lee Valley Transport Study November 2012
- The TfL Business Plan 2011/12 - 2014/15
London Borough of Enfield

- **Core Strategy** Adopted November 2010
- **Development Management Document** Draft 2012
- **Investment and Regeneration in the Lee Valley Corridor** 
  (Oxford Economics) January 2012
- **North East Enfield Area Action Plan** 
  Interim Direction July 2012
- **Ponders End A Framework for Change** 
  Consultation August 2009
- **Ponders End Central, South Street and Water Front planning briefs** 
  Ponders End Central Adopted May 2011
- **Draft Central Leeside Area Action Plan** May 2012
- **Meridian Water Masterplan** July 2013
- **Meridian Water Masterplan, Masterplan options and flood risk modelling report**  
  (Atkins Limited) March 2011
- **Draft Edmonton Green Area Action Plan** April 2012
- **Edmonton Eco Park Planning Brief Supplementary Planning Document** May 2013
London Borough of Hackney

- **Core Strategy** Adopted November 2010

London Borough of Haringey

- **Local Plan Strategic Policies**
  Adopted March 2013

- **Development Management Policies**
  Draft policy approach consulted March - May 2013

- **Sustainable Design and Construction Supplementary Planning Document**
  Adopted March 2013

- **A Plan for Tottenham**
  August 2012

- **High Road West**
  Consultation April 2013

- **Transforming Tottenham Hale Urban Centre Master Plan Supplementary Planning Document**
  2006

London Borough of Waltham Forest

- **Core Strategy**
  Adopted March 2012

- **Development Management Policies**
  Proposed submission July 2012

- **Blackhorse Lane**
  Urban Design Framework
  Consultation August 2011

- **Blackhorse Lane Area Action Plan**
  Submission March 2013

- **Northern Olympic Fringe Area Action Plan**
  Consultation 2011
Other

- **The Department for Communities and Local Government Circular 05/05**
- **Park Development Framework**
  Lee Valley Regional Park Authority, 2011
- **From Edge to Common Ground – Upper Lee Valley Landscape Strategy**
  Witherford Watson Mann Architects and Jonathan Cook
  Landscape Architects, February 2010
- **North London Waste Plan**
  North London Waste Authority,
  Preferred Options November 2009
- **Upper Lee Valley Decentralised Energy Network Feasibility study**
  North London Strategic Alliance,
  August 2012
- **Upper Lee Valley Economic Study**
  North London Strategic Alliance, 2008
- **Upper Lee Valley Investment Framework**
  North London Strategic Alliance, July 2010
### TA1 Industrial uses

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<tr>
<th>Locations</th>
<th>Growth areas</th>
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<tr>
<td>1. Freezywater</td>
<td>Other</td>
<td>11.1 ha</td>
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<td>2. Innova Park</td>
<td>Other</td>
<td>26.0 ha</td>
</tr>
<tr>
<td>3. Brimsdown</td>
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</tr>
<tr>
<td>4. Redburn Trading Estate</td>
<td>Ponders End</td>
<td>4.0 ha</td>
</tr>
<tr>
<td>5. Meridian Business Park</td>
<td>Ponders End</td>
<td>14.0 ha</td>
</tr>
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<td>6. Aztec 406</td>
<td>Central Leeside</td>
<td>18.0 ha</td>
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<tr>
<td>7. Montagu Industrial Area</td>
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<td>8. Edmonton Eco Park</td>
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</tr>
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<td>9. Eley Estate</td>
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<td>26.0 ha</td>
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<td>10. Central Leeside Business Area</td>
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<td>Central Leeside</td>
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</tr>
<tr>
<td>12. Brantwood Road</td>
<td>Central Leeside</td>
<td>17.0 ha</td>
</tr>
<tr>
<td>13. North East Tottenham</td>
<td>Central Leeside</td>
<td>15.5 ha</td>
</tr>
<tr>
<td>14. Marsh Lane</td>
<td>Central Leeside</td>
<td>2.1 ha</td>
</tr>
<tr>
<td>15. Millmead</td>
<td>Tottenham Hale</td>
<td>8.0 ha</td>
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<tr>
<td>16. Blackhorse Lane</td>
<td>Blackhorse Lane</td>
<td>16.5 ha</td>
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<td>17. Lee Bridge Gateway</td>
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#### Table TA1.1 Strategic Industrial Locations in the Opportunity Area

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<tr>
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<td>Central Leeside</td>
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<td>Ponders End</td>
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<td>Other</td>
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Total SIL in the Opportunity Area: 359.6 ha
Fig. TA1.1 Strategic Industrial Locations

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Sources: Enfield, Haringey and Waltham Forest Councils
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<tr>
<th>Locations</th>
<th>Growth areas</th>
<th>LSIS</th>
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<td>1. Alma Industrial Estate</td>
<td>Ponders End</td>
<td>4.5 ha</td>
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<tr>
<td>2. Queensway</td>
<td>Ponders End</td>
<td>3.5 ha</td>
</tr>
<tr>
<td>3. Claverings Industrial Estate</td>
<td>Central Leeside</td>
<td>2.5 ha</td>
</tr>
<tr>
<td>4. Montagu Industrial Area</td>
<td>Central Leeside</td>
<td>6.0 ha</td>
</tr>
<tr>
<td>5. Lanhedge Lane Industrial Estate</td>
<td>Central Leeside</td>
<td>0.7 ha</td>
</tr>
<tr>
<td>6. High Road West</td>
<td>Central Leeside</td>
<td>6.2 ha</td>
</tr>
<tr>
<td>(Brook House potential 1.8 ha to be released)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Lindens/Roseberry Works</td>
<td>Tottenham Hale</td>
<td>1.3 ha</td>
</tr>
<tr>
<td>8. South Tottenham</td>
<td>Tottenham Hale</td>
<td>9.1 ha</td>
</tr>
<tr>
<td>9. Sutherland Road</td>
<td>Blackhorse Lane</td>
<td>5.7 ha</td>
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Table TA1.2 Locally Significant Industrial Sites

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<td>Ponders End</td>
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<td>Other</td>
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<tr>
<td><strong>Total LSIS in the Opportunity Area</strong></td>
<td><strong>39.5 ha</strong></td>
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Table TA1.3 Total industrial land in the Opportunity Area

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<td>Total SIL in OA</td>
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<tr>
<td>Total LSIS in OA</td>
<td>39.5 ha</td>
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<tr>
<td><strong>Total industrial land in OA</strong></td>
<td><strong>399.1 ha</strong></td>
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Fig. TA1.2 Locally Significant Industrial Sites
TA2 New jobs and homes

The growth figures outlined in this Framework have been determined using the London Plan and the boroughs’ Local Plans.

The original estimates for the Opportunity Area in the London Plan were derived from information available at the time. Since then, work carried out in the production of this Framework and by other consultants has shown that the homes capacity of the area (20,100) exceeds original estimates (9,000).

A breakdown of the new homes and jobs figures is shown in the tables below.

<table>
<thead>
<tr>
<th>Location</th>
<th>Area</th>
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<tr>
<td>Tottenham Hale</td>
<td>39 ha</td>
<td>GIS calculation</td>
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<td>Blackhorse Lane</td>
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<tr>
<td>Central Leeside</td>
<td>48 ha</td>
<td>GIS calculation</td>
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<tr>
<td>Ponders End</td>
<td>46 ha</td>
<td>GIS calculation</td>
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<td>A1010 Corridor</td>
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<tr>
<td><strong>Total growth areas</strong></td>
<td><strong>172 ha</strong></td>
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<tr>
<td><strong>Opportunity area</strong></td>
<td><strong>3884 ha</strong></td>
<td><strong>London Plan (July 2011)</strong></td>
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Table TA2.1 Size of growth areas and Opportunity Area
### Table TA2.2 New jobs in growth areas and Opportunity Area

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<tr>
<th>Location</th>
<th>New jobs</th>
<th>Year</th>
<th>Reference</th>
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<tr>
<td>Tottenham Hale</td>
<td>4 000</td>
<td>2031</td>
<td>Assessments carried out by ARUP identified in Tottenham Physical Framework</td>
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<tr>
<td>Blackhorse Lane</td>
<td>1 000</td>
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<td>Assessments carried out by ARUP identified in Tottenham Physical Framework</td>
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<tr>
<td><strong>Total growth areas</strong></td>
<td></td>
<td></td>
<td>13 700</td>
</tr>
<tr>
<td><strong>Opportunity area</strong></td>
<td><strong>15 000</strong></td>
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<td>London Plan (July 2011)</td>
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### Table TA2.3 New homes in growth areas and Opportunity Area

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<th>Location</th>
<th>New homes</th>
<th>Year</th>
<th>Reference</th>
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<td>Tottenham Hale</td>
<td>5 000</td>
<td>2031</td>
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<td>Blackhorse Lane</td>
<td>2 500</td>
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<td>Meridian Water</td>
<td>5 000</td>
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<td>Ponders End</td>
<td>1 100</td>
<td>2026</td>
<td>Enfield Core Strategy</td>
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<td>A1010 Corridor</td>
<td>6 500</td>
<td>2031</td>
<td>A10/A1010 Corridor Study (2010)</td>
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<td></td>
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<td></td>
<td>Assessments carried out by ARUP identified in Tottenham Physical Framework</td>
</tr>
<tr>
<td><strong>Total growth areas</strong></td>
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<td></td>
<td>20 100</td>
</tr>
<tr>
<td><strong>Opportunity area</strong></td>
<td><strong>9 000</strong></td>
<td></td>
<td>London Plan (July 2011)</td>
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* Minimum target for housing
TA3 Summary of the Transport Study results

Considering the need for changes to the transport network to stimulate and accommodate growth in the Opportunity Area, the Transport Study tested a series of possible interventions over and above those already committed. These were compared to 2021 and 2031 scenarios with the committed transport network to present an indication of the implications of future growth on the transport system and refine priorities.

Each of the interventions has been assessed against the Mayor’s Transport Strategy objectives and those expressed by the boroughs. The priority interventions identified are:

• 4 trains per hour service on the West Anglia Main Line at regular time intervals calling at all stations between Brimsdown and Stratford,

• A package of bus interventions, including a combination of frequency enhancements or extensions to existing routes, and/or new services; further frequency increases by 2031,

• Further schemes to tackle peak time crowding on the Victoria line, such as further frequency improvements (e.g. towards 36 trains per hour, compared to the 33 trains per hour achieved through the recent upgrade) or a new line such as Crossrail 2,

• Measures to achieve a mode share for walking/cycling of at least 33% by 2021 and 36% by 2031.
Fig. TA3.1 Percentage change in total trips (highway and public transport) 2007-2031 AM Peak
Growth up to 2021 with a package of interventions

Transport outcomes with the identified package of interventions in place are improved in comparison with the ‘do-nothing’ scenario, reflected especially in increased patronage on local stopping services on the West Anglia Main Line. The outcome, however, is primarily improved connectivity to Stratford and the Isle of Dogs rather than reduced crowding on the busiest parts of the network, e.g. Victoria line. There is limited change to road congestion as a result of these interventions, with primarily local impacts in and around development sites.

Overall, the Study demonstrates that interventions delivered up to 2021 including the existing commitments on the rail, Underground and road networks will deliver improvements, meaning that growth can be delivered without worsening the existing transport situation.

Growth up to 2031 with a package of interventions

By 2031, improved services on the Main Line will have tackled crowding issues that would otherwise have arisen, in addition to improving connections to Stratford, the Isle of Dogs and surrounding growth areas.

On the road network the picture is more varied. Whilst there will be a slight reduction in traffic and an increase in average speed, congestion remains at a number of junctions and further work will be required to identify ways to reduce this (Fig.3.8). The Victoria line towards the West End is severely overcrowded, an issue that could be tackled over the longer term through a new rail line, such as Crossrail 2.

The Study demonstrates that improved local services on the West Anglia Main Line will deliver substantial benefits to crowding and connectivity on the National Rail network. The more persistent issues of road congestion and Victoria line crowding are unlikely to be resolved through the identified priority interventions.

Figures TA3.1 and TA3.2 show the forecast scale of change in trips across the Upper Lee Valley (origin and destination). This does not account for the targeted increase in walking and cycling trips.
Fig. TA3.2 Absolute change in total trips (highway and public transport) 2007-2031 AM Peak
Public Transport Accessibility Levels – mapping potential benefits

Public Transport Accessibility Level (PTAL) is measured on a 9 point scale (0, 1a, 1b, 2, 3, 4, 5, 6a and 6b) where 0 is poor and 6b is excellent.

PTAL analysis shows that the southern portion of the study area, where population density is generally greater, benefits from a higher PTAL because of the Underground service and higher density of bus services.

Considering the possible package of interventions, Figure TA3.3 shows how PTAL might improve, particularly around the four growth areas.
Fig. TA3.3 Areas with change in public transport accessibility levels
Fig. TA3.4 Public transport accessibility levels 2012
The strategic landscape projects identified by Witherford Watson Mann Architects in “From Edge to Common Ground - Upper Lee Valley Landscape Strategy are summarised below.

1. **Lammas Land to Back Water**
   Improve existing paths across Marsh Lane playing fields, railway and across golf course. New direct path from golf course to Back River.

2. **Hackney Marshes**
   New path across Hackney Marshes from Olympic Park to entrance of Middlesex filter beds. River edge to be naturalised along Back River with drainage cuts and river tree planting.

3. **Aqueduct path - Hackney Marshes**
   New bridge across Back River with direct connection to Hackney Marshes. Additional entrance to Waterworks Centre, clear entrance to Middlesex Filter Beds and reconfigure pathways to Hackney Marshes. New public open space.

4. **Thames Water site**
   Improve sight lines from Lea Valley Road to Back River with wide landscape strip, new foot and cycle path. Create view corridor through south-east section of site to the marshes with public open space.

5. **Lea Bridge Road**
   Foot and cycle paths to be set away from road, with improved connections to Sandy Lane and the Paddocks. New secondary bridges across River Lea, Aqueduct path and flood relief channel.

6. **Black path**
   Improve legibility of path through landscape and public realm design, signage, ramps, bridge and viewpoint on existing railway bridge.
7. **Aqueduct path**
   Improve existing path including new path surface and clearing shrubbery at entrance. New path section from railway intersection to Coppermill.

8. **Leyton Marsh**
   Scraping made ground, raised level to form swales/habitats.

9. **Dagenham Brook**
   New path along brook between Lea Bridge Road and Dunedin Road. Opportunity to create wetland on playing field edge.

10. **Clapton Towpath**
    Repave path with clay pavers/granite setts.

11. **Walthamstow Marshes**
    Extend, link and intensify habitats. See Walthamstow Marshes management plan.

12. **Flood relief channel path - southern section**
    New paths to surrounding areas with white poplars along paths.

13. **Low Hall playing fields**
    Plant white poplars and willow hedgerow. Intensify naturalisation of playing field edge. New and improved paths to South Access Road.

14. **Clapton Common**
    Improve visibility of Spring Hill entrance, clear back shrubs and possible public use of disused Victorian public toilets.

15. **Thames Water Coppermill works**
    Planting willow trees to perimeter of operational site.

16. **Spring Hill - Coppermill Lane**
    New ramps on Spring Bridge, clear shrubs along paths to marina, re-profile edge of Coppermill Meadows. Relocate Thames Water car park.
17. West Warwick Reservoir
   New path along bank of reservoir and a viewing platform on southern bund towards City and Canary Wharf. Extend water edge and habitat with floating reedbeds. New boardwalk and planted pontoons leading to gated footbridge onto Markfield Recreation Ground.

18. Alternative N1 foot and cycle path
   New cycle path with bridge between reservoir bank and railway line.

19. Coppermill entrance to reservoirs
   New visitor entrance via two footbridges and a new path to East Warwick Reservoir. Possible access to Coppermill Tower for views over reservoirs.

20. Markfield Recreation Ground
   De-culvert and naturalise Stonebridge Brook. Possible public access to West Warwick Reservoir with new bridges and frontage onto River Lea.

21. Douglas Eyre Playing Fields
   In addition to Project 12, open additional access from Hawarden Road to connect onto flood relief channel path.

22. Ferry Lane - Forest Road
   New foot and cycle path with bridges over waterbodies. Enhance entrance to park with generous landscaped space. Possible location for water bus stop and viewing terrace off Ferry Lane to islands.

23. The Paddock
   River edge naturalisation and create areas of wet woodland. New enclosure to Victoria line ventilation tower with external stairs and viewing platforms to overlook the Paddock and the reservoirs.

24. Walthamstow Reservoirs
   Increase public access in existing path network, including new entrance off Ferry Lane and visitor centre possibly in existing Pump House.
25. **Backriver path**  
New path along river channel and new bridge. Boardwalk through new wetland in the Paddock (project 23) to water edge and platforms.

26. **Chesnut Road to the Paddock**  
Green east-west link from Tottenham High Road through Hale Village, including bridges across waterspaces to Paddock and Back River path.

27. **Blackhorse Lane Waterfront Park**  
Waterfront park beside Dagenham Brook/flood relief channel with open space connection to Blackhorse Lane.

28. **Moselle Brook to Clendish Marsh**  
De-culvert Moselle Brook between back of houses and plant trees to naturalise banks. Create wetland/river edge area at edge of Scotland Green. New bridge over railway and Meridian Way with viewing platforms over the marshes. Increase height of existing underpass by excavating further 0.5m.

29. **Marsh Lane to Stonebridge Lock**  
New bridge at Stonebridge Lock and create public open space with seatings, new lido, new paddling pool and playground.

30. **Park Lane - Marigold Road to Wild Marsh East**  
Full restoration of western bank of Lee Navigation between Stonebridge Lock and Chalk Bridge. New small public areas, small scale community gardens and greenhouses (with possible waste heating) in existing open spaces surrounding housing estates.

31. **Flood relief channel path 2**  
Open existing paths to public towards Lea Valley Road. New path along flood relief channel to Central Leeside, from playing fields onto existing path from Eatons Mead.

32. **Banbury Reservoir**  
Review access, parking, possible use of former pumping station. Landscape enhancements.
33. **Folly Lane**  
Reinforce with tree planting and widen path. Possible BMX/scrambler track on playing fields. Reactivate neighbouring playing fields.

34. **River Ching walk**  
Naturalise river bank and create clear link along river with tree planting and daylighting. New footpath through greyhound stadium, and edge of sport centre to connect to Wickham Road.

35. **Central Leeside open space**  
Possible new open space on confluence of Salmons and Pymmes Brook.

36. **Central Leeside waterspace**  
Possible canal basin/marina and quayside landscape to the Lee Navigation. New path from Chalk Bridge to Lee Parkway.

37. **Kimberley Road to River Ching**  
Potential new open space and pathways through former gasworks site. New paths to Angel Road, rivers and playing fields with bridges over rivers, roads and railway.

38. **Central Leeside flood relief channel**  
Tree planting on river edge landscape area and open footpath.

39. **North Circular landscape enhancements**  
Roadside white poplars planting and ambient lighting to viaduct undercroft. Traffic island as possible location for public art to mark crossing of the valley for North Circular users.

40. **Old railway line to Chingford Mill**  
Extend old railway line path with potential open space adjacent. Straightening of Lee Valley Parkway cycle path and replace shrubs with white poplars. New foot and cycle bridges across railway, Meridian Way to Nobel Road, and over Pymmes Brook towards Lee Parkway cycle path.

41. **Salmons Brook**  
Planting willows to existing 10m wide strip on east side of brook through industrial estate.
42. Infrastructure site Central Leeside
   New open space along Salmons Brook for flood storage and wetland habitat, and productive landscape/orchard besides existing path. Landscape link to Lee Park Way and possible location for community glasshouse. New bridge to William Girling Reservoir and remove palisade fencing along path.

43. Salmons Brook path
   New community gardens on Montague Recreation Ground with new east-west path and new ramped bridge across railway/A1055. New paths along golf course and brook. Enhance connection to surrounding areas, including signalled surfaces over roads.

44. Picketts Lock
   Enhance leisure cluster with new facilities and better synergies between uses with improved links to Ponders End and Columbia Wharf.

45. Boundary ditch - Picketts Lock
   Public realm improvements to increase visibility and ease of access. Close secondary road in front of local centre to increase pedestrian space and street furniture. New bridge over railway.

46. Lea Valley Road
   Create threshold to Lea Valley Road by planting trees on Meridian Way roundabout and on southern side of road. Relocate Thames Water perimeter fence to create combined foot and cycle path between trees. New foot and cycle bridge over flood relief channel.

47. Ponders End and Wharf Road
   Upgrade existing foot and cycle path, approach to South Street station and new ramped bridge over station. Additional links, landscape works and facilities on Ponders End Recreation Ground.

48. South Marsh
   New marina and building to service existing moorings. Intensify usage of open space with community allotment gardens and other uses. View point at cafe near King George V sailing club. New access road from Lea Valley Road, new paths and bridges to connect to new amenities.
49. **Columbia Wharf**
   New/improve existing foot and cycle paths and bridges, including planting trees and new boardwalks. Possible creation of wetland on water meadow with bird hides and habitat intensification.

50. **Yardley Hill and Pole Hill**
   Improve and clarify access to reservoir, Yardley Hill with clearly visible panel marker to interpret great views to the city. Clarify pathway hierarchy to and through forest.

51. **Flood relief channel path 3**
   New path from Eaton’s Mead leading to new signalled crossing at Lea Valley Road. New path along flood relief channel, with new public open space at Sewardstone Paddock with children’s activity and wildlife area. New path to Gunpowder Park and resurface Mill Lane dirt track for pedestrians and cyclists.

52. **King George V Reservoir**
   Improve access to reservoir and flood relief channel with ramps, new footpaths and bridges. Create habitats for birds and fish with floating reedbeds on sides of path.

53. **Durants Park - Lee Navigation**
   East-west connection at Durants Park with new and opening existing paths to and through allotment gardens. New pedestrian crossing over Mollison Avenue, and negotiate access to Lea Navigation.

54. **Mossops Creek**
   Planting along Stockingwater Lane towards Brimsdown station.

55. **Swan and pike pool - Enfield Lock**

56. **Swan and pike productive cluster**
   A number of community gardens, allotments, glasshouses, and beekeeping with timber rafts to carry beehives. Also includes small clubhouse and weekend produce market.
57. Turkey Brook - Sewardstone
Naturalise riverbanks in Albany Park with possibility of extensive wetlands. Reinforce visibility and improve channel habitat. New path north of Turkey Brook, new bridges at Albany Park and railway. Widen and resurface footpath along Turkey Street to incorporate Turkeybrook. Soft landscaping at Turkey station.

58. Island Village
Small scale allotment and community herb gardens on raised beds.

59. Gunpowder Park
Open access road for public. Reinforce tree planting on higher ground.

60. Rammey Lock
Enhance habitat to create public wetland and existing cruising club as canoe hire and café. Additional moorings and possibility of a boardwalk. New paths and bridges to connect to Gunpowder Park and nearby rivers.

61. Rammey Marsh
Turn former landfill into productive landscapes with glasshouses. Small Lea habitat improvement. New entrance and path to Innova Park.

62. Small Lea footpath
Improve existing path between Long Croft Drive and New Ford Road for pedestrians. New paths to Turkey Brook, Mollison Avenue and Innova Park. New signalled crossings at Ordnance Road and Station Road.

63. Links to north
Open path along Horsemill to public. New gateway and crossing to Lee River Country Park, new paths along Cornmill Stream and Town Mead.
**TA5 Flood risk management**

**Tottenham Hale and Blackhorse Lane**

The Tottenham Hale growth area is adjacent to the River Lee and its flood channels and the Walthamstow Wetlands. The topography of the area is low lying and relatively flat. The Moselle Brook joins the Pymmes Brook, which in turn flows into the River Lee Navigation immediately south of Ferry Lane. Tottenham Hale is predominantly within Flood Zone 2 with smaller areas within Flood Zone 3a and 3b where the River Lee and the River Lee flood relief channel run. Only a very small part of the growth area to the west is within Flood Zone 1.

Further information on flooding can be found in the joint Strategic Flood Risk Assessment carried out for the North London Waste Plan (www.nlwp.net) and the Haringey Core Strategy Sequential Test 2011: Haringey Core Strategy Sequential Testing - Core Strategy Identified Areas of Development (2011).

The Blackhorse Lane growth area is adjacent to the River Lee flood relief channel and the Dagenham Brook channel which run adjacent to one another. The functional floodplain (1 in 20 year) extent is mainly constrained to the river channel areas, and some southern parts of the area (in the vicinity of Wickford Way) are located within the 1 in 100 year extent.

The northern part of the area, broadly from Hooker’s Road to Uplands Business Park lies within the 1 in 1000 year flood extent with some parts shown to be within the 1 in 100 year with climate change outline. The ground levels rise towards the east of the area, with Blackhorse Lane itself lying out of the 1 in 1000 year floodplain; i.e. within Flood Zone 1.

Further information on flooding can be found in Waltham Forest Council’s Level 2 Strategic Flood Risk Assessment.
Fig. TA5.1 Flood risk: Tottenham Hale and Blackhorse Lane
Central Leeside

The Meridian Water site is crossed by several significant watercourses including the Lee Navigation and the River Lee flood relief channel, Pymmes Brook and Salmons Brook. All the rainfall runoff generated in Enfield drains through this site. It is a relatively flat site varying in height from eight metres above sea level to 12 metres at the highest. Significant alterations were made twenty years ago to the highway and drainage infrastructure as part of upgrade works to the North Circular. The entire Meridian Water site is located with Flood Risk Zones 2 and 3 and five sites have been identified as at risk of flooding.

The draft findings of the detailed flood risk assessment of the masterplan area outline the flood mitigation measures required to enable development of Meridian Water and recommends actions that move the areas of flood risk and create alternative floodable areas to enable land currently at risk of flooding to be developed on. Lower Hall Lane and Tottenham Marshes are considered suitable candidates for flood compensation storage. The initial findings conclude that the best case scenario would be to use the entire Lower Hall Lane for flood storage. However, if this were not possible, the fall back option would be to use part of the Lower Hall Lane site and with the shortfall absorbed by the Tottenham Marshes and other sites to come available during the lifespan of the proposal. The provision of additional flood capacity upstream of the growth areas identified in this document would also help mitigate the impact of developing in these areas.

Thames Water retains significant landholdings within the Central Leeside area including the Lower Hall Lane site. The potential for some of this land to provide additional flood mitigation measures and a unique biodiversity habitat should be explored. Given the aspirations for Thames Water to develop the existing Deephams Sewage Treatment Works (Fig. 5.2) there is an opportunity to provide a joined up approach to water management within the growth area. This will resolve issues around flooding and sewage treatment and aid the Lee Valley Regional Park with proposals to open up new areas of the park to the public.

Further information on flooding can be found in Enfield Council’s Level 2 Strategic Flood Risk Assessment.
Fig. TA5.2 Flood risk and potential compensation areas: Central Leeside
**Ponders End**

Three main rivers cross the Ponders End growth area; the River Lee, the Lee Navigation and Brimsdown Ditch. The growth area is located on the west bank of the Lee Navigation at one of only two locations in London where an original loop of the River Lee still exists. The loop serves as a bypass to the nearby canal lock and also feeds a mill chase.

Brimsdown Ditch crosses the site at its north-west corner. Though now mostly culverted, historical maps show this was once an open watercourse. The area is fairly flat rising from 13 metres above sea level at its lowest point to just 15 or so at the highest end.

Ponders End Waterfront falls within Flood Zones 2 and 3. However, Ponders End South Street and Ponders End Central are not identified as areas at risk of flooding.

Further information on flooding can be found in Enfield Council’s Level 2 Strategic Flood Risk Assessment.