

Report

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Report for – London Borough of Barnet
Local Implementation Plan
Strategic Environmental Assessment – Environmental Report

Draft



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Report for: London Borough of Barnet

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1.0 Non-Technical Summary

1.1 Introduction

This report sets out the outcomes of the Strategic Environmental Assessment (SEA) of the proposals in the London Borough of Barnet's third Local Implementation Plan (LIP). The LIP is a statutory document, prepared under Section 145 of the Greater London Authority Act 1999. The LIP guides transport priorities and projects and details a three-year programme of investment (2019/20 to 2021/22) to implement the Mayor of London's Transport Strategy (MTS).

To deliver the Mayor's vision – *"to create a future London that is not only home to more people but is a better place for all those people to live in"* - the overarching aim of the MTS is for 80% of all trips in London to be made on foot, by cycle or using public transport by 2041. The Mayor is seeking to achieve his vision by achieving the following three MTS outcomes:

- Healthy Streets and healthy people, including traffic reduction strategies:
- A good public transport experience: and
- New homes and jobs.

This LIP will replace the council's second LIP (2011). The third round of LIPs will become effective from April 2019.

1.2 Summary of the LIP

Barnet's LIP sets out the LB Barnet's proposals for implementing the Mayor's Transport Strategy including a timescale for implementing the proposals. It includes Barnet's transport objectives and identifies key local issues, challenges and opportunities to achieving the overarching mode share aim and the Mayor's Transport strategy nine outcomes. The LIP has eight transport objectives set out below and the SEA focuses on assessing each of these and their associated measures.

- A. To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities;
- B. To applying 'Healthy Streets' principles to deliver a range of improvements;
- C. To seek to achieve the Visions Zero ambition of zero 'Killed or Seriously Injured' Road Traffic Casualties by 2041;
- D. To promote, enable and support more sustainable travel to school, workplaces and other destinations;
- E. To improve air quality in Barnet and protect residents and visitors, especially children from exposure to pollution;
- F. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough; and
- G. Facilitate the introduction of step-free facilities at stations and accessible bus stops to help make public transport accessible for all passengers, directly or through support of TfL and

National Rail proposals and development opportunities Introduce step-free facilities at stations and accessible bus stops.

- H. To secure significant regeneration and growth across the borough's opportunity areas based upon sustainable development principles with the majority of trips carried out via public transport on foot and by cycle with a reduced reliance on the private car.

In developing and preparing the programme of works for the LIP, Barnet Council will consider the major projects in TfL's Business Plan and the milestones associated with these projects. In Barnet, these include the three groups of interventions or projects: long-term, short term and those in 2019/20.

1.3 Approach to the SEA

The SEA has been undertaken using the TfL/GLA framework that was developed to satisfy SEA requirements for plans and strategies produced by the Mayor of London as the basis for the current assessment, augmented by issues highlighted in the SEA Scoping Report and consulted on with the statutory environmental bodies. The assessment of effects has been based on the professional judgements of our SEA team, evidenced by information from the LIP3 MTS Outcomes Borough datapack that was provided to the London Boroughs by TfL.

The environmental baseline information collated for the SEA, together with the outcomes of the Integrated Impact Assessment undertaken for MTS3 and other information on the specific proposals likely to come forward through the LIP were used to identify the existing relevant sustainability issues.

To meet the requirements of the SEA Regulations, it has been assumed that the only real reasonable alternative to the LIP proposals is the "do-nothing" scenario.

There are two European designated sites within 10km of Barnet which fall under the Habitat Regulations. This assessment has concluded that there would be no significant environmental effects arising from the implementation of the LIP on these designated areas that would affect the conservation objectives of those sites. On this basis no further assessment work has been undertaken.

1.4 Outcomes of the SEA

The SEA concludes that no significant adverse environmental effects will result from the implementation of the LIP in Barnet. As such, no specific recommendations for the mitigation of effects are required. All the effects identified are either considered to have no impact or will be positive. In some cases, the LIP may have positive or negative effects but the level of information available at a time of assessment does not allow a clear judgement to be made.

The main effects of the seven objectives of the LIP, together with the actions and outcomes associated with them, are listed below.

- **Objectives A-C: Encouraging healthier lifestyles, applying healthy streets principles and achieving zero killed or seriously injured.** These objectives and their associated measures will support healthier, safer travel in Barnet. Healthy streets will support increased use of the public realm directly enhancing quality of life. The increase in active travel and use of public transport will support emissions reduction and increased energy efficiency.

- **Objective D: support more sustainable travel.** This objective and associated measures will directly support emissions reduction and improvements in air quality. They will also directly support improvements to streetscapes and townscapes and increased use of urban public realm. The proposed measures will also directly support mental and physical health and wellbeing of those travelling in Barnet including vulnerable groups particularly given the focus on schools.
- **Objective E: improve air quality.** This objective and associated measures will provide substantial support for improvements in air quality. An increase in EV charge points, the ULEZ extension, car free days together with greening and tree planting will all support air quality improvement in the borough. Technological changes to achieve this will be directly supported by the borough, (rather than developed directly) with the borough also pressing for a sub-regional ULEZ extension.
- **Objectives F and G: new and revised public transport routes, step-free facilities at stations.** These objectives and associated measures will provide significant public transport improvements and in particular, improve access for vulnerable groups and addressing health inequalities. The measures also assist in improving the liveability of streetscapes and townscapes; supporting energy efficiency and improving mental and physical wellbeing.
- **Objective H: secure significant regeneration and growth in Barnet's opportunity areas.** This objective and associated measures will support the liveability of key streetscapes and townscapes, improve the urban realm, support sustainable construction including climate change adaptation and resilience and support improved mental and physical wellbeing.

In many cases, the way in which these objectives and measures are implemented provides opportunities to enhance their effects, and this has been indicated where appropriate.

The implementation of the short-term actions set out in the LIP would not have any significant environmental benefits, although this is typically because the three-year time horizon of the short-term programme does not provide enough time for significant effects to be delivered. However, the programme will help in terms of air quality, the attractiveness of neighbourhoods, inclusivity, mental and physical wellbeing, mobility and regeneration.

The longer-term actions set out in the LIP, if funded and delivered, would significantly improve the attractiveness of neighbourhoods and mobility. They will also help in terms of climate change mitigation, energy efficiency, inclusivity, mental and physical wellbeing and regeneration.

1.5 Monitoring

The draft Strategy and LIP do not currently include specific proposals for environmental monitoring. However, it is recommended that key indicators from the set compiled by the London Sustainable Development Commission (LSDC) on Quality of Life issues be used by Barnet Council to monitor the environmental effects of the final Strategy and LIP.

1.6 Next Steps

The LIP was submitted to Transport for London in November 2018 for comment. Barnet Council is also presently conducting a public consultation exercise on the LIP proposals. Taking account of the comments received from TfL and the outcomes of the consultation, together with the analysis

presented in this Environmental Report, Barnet Council will then make any revisions to the LIP and LTS that may be necessary, and **a final version of the LIP will be approved in January 2019.**

Following this, Barnet Council will publish a Post-Adoption Statement to summarise the way that consultation has influenced the assessment process, demonstrating how feedback has been considered, identifying changes that have been made and the reasons for choosing the preferred policies and options.

In line with the requirements of the SEA Regulations, the Borough Council will monitor the effects of the LIP. This will feed into any future LIP progress reporting.

2.0 Introduction

2.1 About the Environmental Report

This report sets out the outcomes of the Strategic Environmental Assessment (SEA) of the proposals in the London Borough of Barnet's third Local Implementation Plan (LIP).

To meet the requirements of the Environmental Assessment of Plans and Programmes Regulations 2004, Local authorities are required to carry out Strategic Environmental Assessment (SEA) for policies, plans and programmes across various areas, including transport¹. Government guidance on transport plans stresses the importance of the SEA being an integral part of developing and delivering a transport strategy. The statutory environmental agencies (i.e. the Environment Agency, Natural England and Historic England) must be involved throughout the development and monitoring of a plan.

A Scoping Report for the SEA² was forwarded to the consultation bodies by the London Borough of Barnet earlier this year. This report takes account of the comments received from these bodies on the Scoping Report and updates and extends the baseline environmental information on which the SEA is based.

2.2 Overview of the Local Implementation Plan (LIP)

The LIP is a statutory document, prepared under Section 145 of the Greater London Authority Act 1999. This Act requires each of London's 33 local authorities to prepare a LIP containing proposals for the implementation of the Mayor's Transport Strategy³ in their area.

The LIP guides transport priorities and projects and details a three-year programme of investment (2019/20 to 2021/22).

The central aim of the MTS – the Mayor's vision – is to create a future London that is not only home to more people, but is a better place for all those people to live in. The overarching aim of the Strategy is for 80% of all trips in London to be made on foot, by cycle or using public transport by 2041, compared to 63% today. The Mayor is seeking to achieve his vision by focusing the policies and proposals in his transport strategy on the achievement of the following three overarching MTS outcomes:

- **Healthy Streets and healthy people, including traffic reduction strategies:**
 - Active: London's streets will be healthy, and more Londoners will travel actively.
 - Safe: London's streets will be safe & secure.
 - Efficient: London's streets will be used more efficiently & have less traffic on them.

¹ The Environmental Assessment of Plans and Programmes Regulations 2004 (Statutory Instrument 2004/1633).

² Temple and Steer (2108) - **Local Implementation Plan: Strategic Environmental Assessment Scoping Report** – London Borough of Barnet, September 2018.

³ Mayor of London (2018) – **Mayor's Transport Strategy** - Greater London Authority, March 2018

- Green: London's streets will be clean and green.
- **A good public transport experience:**
 - Connected: The public transport network will meet the needs of a growing London.
 - Accessible: Public transport will be safe, affordable and accessible to all.
 - Quality: Journeys by public transport will be pleasant, fast and reliable.
- **New homes and jobs:**
 - Good Growth: Active, efficient and sustainable travel will be the best option in new developments.
 - Unlocking: Transport investment will unlock the delivery of new homes and jobs.

The rationale and detail of each of these outcomes is set out in the third MTS. The LIP responds to the third MTS, the Sub Regional Transport Plan (north) and other relevant policies. This LIP will replace the council's second LIP (2011). The third round of LIPs will become effective from April 2019.

The Transport Plan does not set out binding policies, rather it pulls together key objectives, policies, themes and priorities from other documents and looks at what can be achieved in the next five years given the availability of resources. It also acts as bridge between existing planning documents and any proposed changes to the Local Development Framework, which will set out strategic policies and priorities in relation to transport.

A summary of the key proposals of the LIP are provided in **Section 3.3**.

2.3 Compliance with the SEA Regulations

Table 2.1 below sets out the requirements of the SEA Regulations and where this information can be found in this report.

Table 2.1: SEA Requirements⁴ and where covered in the Environmental Report

Requirement	Where found
Outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes.	Sections 3.2 and 3.3
The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.	Section 4.0
The environmental characteristics of areas likely to be significantly affected.	Section 4.0
Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated under Directive 79/409/EEC and the Habitats Directive.	Sections 4.0 and 5.3

⁴ Based on SEA Regulations 2004 No. 1633, Schedule 2.

Requirement	Where found
The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.	Section 3.7
The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues such as biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage (including architectural and archaeological heritage); landscape; and the inter-relationship between these.	Section 5.4
The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	Section 5.4
An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	Section 5.2
A description of the measures envisaged concerning monitoring.	Section 5.5
A non-technical summary	Section 1.0

2.4 Report Structure

Following this introductory section, the structure of this report is as follows:

- The context of the LIP and its likely scope, including identification of other policies, plans, programmes and sustainability objectives (**Section 3**);
- Baseline environmental conditions, and how these might change in the absence of the LIP; (**Section 4**);
- The SEA objectives and framework providing the assessment the environmental effects of the LIP and alternatives, together with an overview of the proposed approach to undertaking the assessment. This section also identifies any measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the LIP (**Section 5**); and
- The next steps in the SEA process (**Section 6**).

3.0 Context and Scope of the LIP

3.1 Introduction

In this section, the context and scope of the emerging LIP for the London Borough of Barnet is described based on work completed by the Council to date. This sets out:

- The background policies that will shape the proposals to be set out in the LIP, and other associated documents.
- The area to be covered by the LIP and therefore forming the assessment area for the SEA.
- The timescales of the LIP and the SEA.

3.2 Policy Context

3.2.1 The Mayor's Transport Strategy

The Mayor's Transport Strategy (MTS) is described in outline in **Section 2.2** above. As noted, the central aim of the MTS for London not only to be home to more people, but better place for all Londoners. This requires 80% of all trips in London to be made on foot, by cycle or using public transport by 2041, compared with 63% today. The specific Barnet target is 72%

3.2.2 The Sub Regional Transport Plan (North)

This Plan⁵ is part of an ongoing programme, enabling Transport for London (TfL) to work closely with the London Boroughs in North London to address strategic issues, progress medium-longer term priorities and respond to changing circumstances. The Plan translates the MTS goals, challenges and outcomes at a sub-regional level. While these needed to be considered across London, and addressed locally through LIPs, there are some matters which benefit from having a concerted effort at a sub-regional level. Challenges such as improving air quality, reducing CO₂ emissions and achieving targets for increased cycling and walking are better dealt with at sub-regional level across London.

Sub-regional challenges specifically identified for the north sub-region in London were to:

- Facilitate and respond to growth, especially in Brent Cross/Cricklewood and the Upper Lee Valley.
- Enhance connectivity and the attractiveness of orbital public transport.
- Relieve crowding on the public transport network.
- Improve access to key locations and jobs and services.
- Manage highway congestion and make more efficient use of the road network.

⁵ Mayor of London (2016) – **North London: Sub-regional Transport Plan** – 2016 update, Transport for London.

Between 2010 and 2018, the North sub-region in London has experienced faster population growth than expected, placing greater demands on transport. The rate of housing delivery needs to increase to cope with this growing population, and effective transport links are critical to this. The ways that people travel also has changed. There is a growing demand for rail services and cycling in particular.

With the election of the current Mayor, a revised MTS was prepared and adopted in 2018 as noted above. The 2016 update of the Sub-regional Plan recognised the new funding settlement for TfL from the Government, as well as the Mayor's revised priorities about how to allocate this. As not all transport schemes previously considered fitted with the new Mayor's priorities, no map or list of specific projects or proposal was included.

3.3 Long-Term Transport Strategy for Barnet

A Long-Term Transport Strategy for Barnet is being developed to articulate the Council's vision and outline the Council's commitment to improving transport options for all its residents. This strategy will consist of several individual strategies relating to specific transport modes, developed via a coordinated approach. This is particularly expected to explore new approaches and innovative solutions to the transport challenges facing Barnet. Some of these projects are identified in the current LIP and are considered in the SEA as appropriate. Other projects that will be included in the Long-Term Transport Strategy that are not yet identified clearly cannot be considered here.

3.4 Summary of the LIP

Barnet's transport objectives are being developed in the LIP to help achieve the overarching mode share target for Barnet and for London, as well as delivering against the various mayoral outcomes identified in the MTS. The focus of the LIP will be in accordance with the following seven objectives:

- **Encouraging healthier lifestyles:** Promoting physical activity, active travel and public transport. Through this, the strategic network will better overcome barriers to walking and cycling. This will include providing high quality cycle routes suitable for cyclists of all abilities, improved public transport connections to leisure facilities.
- **Applying 'Healthy Streets'⁶ principles to deliver a range of improvements:** Delivering new liveable neighbourhoods in Colindale and Brent Cross, in Town Centres including town centre Transport Hubs, and in development areas in line with Town Centre Strategies and Development Frameworks. Other improvements will include proposals for main road corridors and major junctions, together with non-town centre transport hubs and stations.
- **Achieve zero 'Killed or Seriously Injured' Road Traffic Casualties by 2041:** Promoting safer behaviours and reduce road danger through education, training and publicity, programmes, road safety schemes at accident 'hot-spots, 20mph areas around schools and other areas where pedestrian activity is high.

⁶ Mayor of London (2017) - **Healthy Streets for London: Prioritising walking, cycling and public transport to create a healthy city** - Transport for London, February 2017.

- **Support more sustainable travel to school, workplaces and other destinations:** Increasing the proportion of schools developing travel plans and achieving STARS accreditation⁷, especially at higher levels, delivering educational programmes and engineering schemes to support school travel plans including, piloting school street proposals. Barnet Council will also require travel plans for new developments and work with other organisations to ensure these are robust. The relocation of Barnet Council to new offices also will provide an opportunity to reduce car-based travel and pilot new approaches as an exemplar scheme. The Council will also continually review parking provision on-street and in borough-controlled car parks, and introduce, extend and review of CPZs, review town centre demand and parking provision, issue permits based on emissions levels, make provision for car clubs and electric vehicle charging and apply parking controls around car-free and car-lite development.
- **Improve air quality in Barnet and reduce exposure to pollution, especially for children:** Carry out air quality audits on remaining schools in areas of poor air quality and implement measures identified. The Council will also work with adjacent boroughs to press for and develop proposals for extension and tightening of the Ultra-Low Emission Zone (ULEZ)⁸. Open access electric vehicle charge points (e.g. in streetlamp columns) will be provided and the Council will work with town teams and other community groups to organise car-free days and events.
- **New and revised public transport routes:** These will support the growth of the borough, particularly to improve orbital travel and travel to neighbouring areas. Schemes will include a new Brent Cross West Station, the West London Orbital Line from Brent Cross and Crossrail 2 to New Southgate. The Council will work with TfL on new bus routes to serve new development and less accessible locations, including orbital express bus and demand responsive services. Bus Priority improvements will focus on development areas, orbital movement and generating higher passenger numbers. The Council also will explore potential for coach facilities in conjunction with the proposals at Brent Cross West/Brent Cross south.
- **Introduce step-free facilities at stations and accessible bus stops:** To make public transport more accessible for all passengers, both directly and in partnership with TfL, National Rail and private developers. Proposals will include Mill Hill East, Burnt Oak, Colindale and Brent Cross northern line stations, the new Brent Cross West station and Mill Hill Broadway station. The Council also will increase the percentage of accessible bus stops in Barnet.
- **Secure significant regeneration and growth in Barnet's opportunity areas:** Sustainable development principles will ensure majority of new trips are by public transport, on foot and by cycle, and reliance on the private car will be reduced. The Council will support the Brent Cross Rail Freight Facility and a construction consolidation centre for the Brent Cross development. Borough-wide requirements and best practice for new development, in particular in the Green Infrastructure SPD and Sustainable Design and Construction SPD will incorporate guidance on climate change resilience and adaptation, green transport and access, air quality, noise and sustainable urban drainage.

⁷ STARS (Sustainable Travel: Active, Responsible, Safe) is TfL's accreditation scheme for London schools and nurseries. It inspires young Londoners to travel to school sustainably, actively, responsibly and safely by championing walking, scooting and cycling.

⁸ This will be introduced in central London in April 2019, and is planned to be extended into the southern part of London Borough of Barnet, south of the A406 (North Circular Road) in October 2021.

In developing and preparing the programme of works for the LIP, Barnet Council will consider the major projects in TfL's Business Plan and the milestones associated with these projects. In Barnet, these include the three groups of interventions or projects listed below: long-term, short term and 2019/20.

Long-Term interventions (i.e. to 2041), several significant, but currently unfunded, investments will be required to ensure the economic and social vitality of Barnet. These are:

- North Finchley Town Centre remodelling;
- Finchley Central improvements;
- Edgware town centre development;
- New Southgate Liveable Neighbourhood;
- A5 corridor improvements;
- Low emission fleet pilots and improvements;
- West London Orbital (Dudding Hill) Line;
- Feasibility of introducing Sustainable Urban Drainage Schemes (SUDS) through transport schemes; and
- Other future projects and programmes developed from the Long-Term Transport Strategy

In the **shorter term**, the LIP will include the three-year indicative programme of investment to be funded by TfL, which includes:

- Local transport initiatives;
- Healthier lifestyle initiatives;
- Town centre and other Healthy Streets proposals;
- Towards Vision Zero (accident reduction) measures;
- Supporting Sustainable Transport Choice;
- Measures to improve air quality (including funding from the Mayor's Air Quality Fund and Low Emissions Neighbourhoods schemes);
- Accessible transport improvements;
- Liveable Neighbourhoods schemes;
- Principal road renewals;
- Bridge strengthening;
- Bus priority measures; and

- Borough cycling programme.

Specifically, the following proposals are expected to be delivered or part delivered **during 2019/20**:

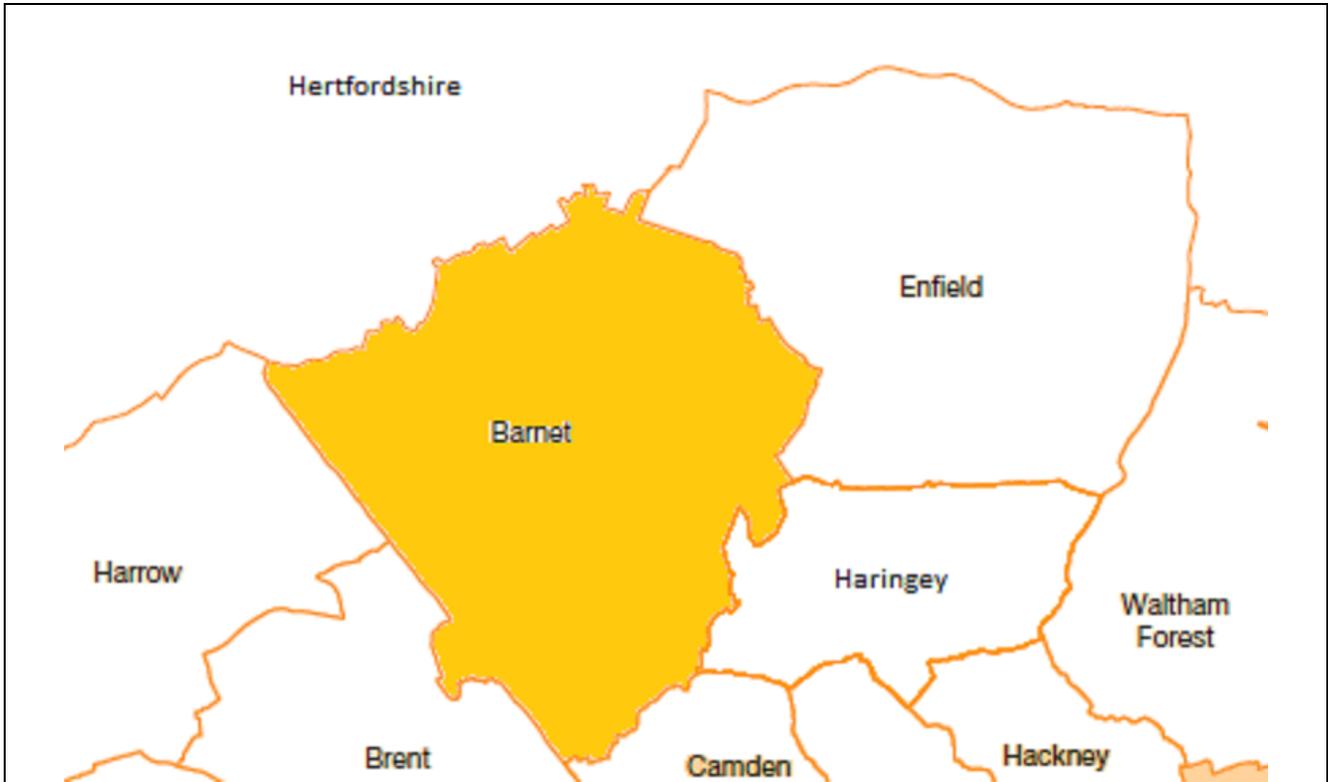
- Definition of borough-wide strategic walking & cycling network and improvements needed;
- Dollis Valley cycle route bridge widening (x2);
- Colindale Parks cycle routes including Montrose Avenue crossing;
- Cycle/pedestrian route lighting improvements at Pursley Road-Copthall and Sunny Hill Park;
- Digital Behaviour Change Intervention;
- Completion of Chipping Barnet High Street pavement widening scheme;
- A5/Watling Avenue junction improvement scheme and healthy streets improvements (say 500 overall);
- Finchley Central public realm and healthy streets improvements complementing the Station development and Town Centre Strategy;
- West Hendon public realm works in advance of and complementing major development changes;
- Minor traffic management schemes prioritised using healthy streets indicators;
- Colney Hatch Lane pedestrian crossing facility/traffic calming;
- Oakleigh Road South pedestrian crossing facility/improvements;
- Church Hill Road/Cedar Avenue pedestrian crossing facility/improvements;
- Alexandra Grove pedestrian crossing facility/improvement;
- Road Safety Education, Training and Publicity;
- Cycle Training – deliver cycle training to approx. 5,000 people p.a. (children & adults);
- Pedestrian facilities at traffic signals: A5/Station Road junction, Edgware;
- Pedestrian facilities at traffic signals: Brent Street / Church Road / Parson Street;
- Pedestrian facilities at traffic signals: A5/Kingsbury Road junction;
- Great North Road/The Bishops Avenue Accident Reduction scheme (implementation);
- Chesterfield Road traffic calming scheme;
- High Road/Totteridge Lane junction (minor changes);
- Junction Improvement scheme A5 junction with Spur Road;

- School Travel Plan support (staff and resources to support schools developing School Travel Plans and obtaining STARS accreditation);
- School Travel Plan (?) engineering schemes at Danegrove Primary, Grasvenor Avenue Infants, St Theresa's Catholic School, Wessex Gardens Primary and Frith Manor School.
- “Bike It” and Cycle Officer funding;
- Support for cycling – resources to promote cycling;
- Introduction of / review of Controlled Parking Zones;
- Car club provision;
- Air quality audits on remaining schools in high pollution areas and delivery of Air Quality audit improvements;
- Delivery of electric vehicle charging points;
- Support for car-free days and events;
- Tree planting to address air quality and urban heat islands;
- Sustainable business grants programme which would include an engagement officer to liaise with and approach businesses along the A1000 corridor and give their business an energy and sustainability appraisal;
- Delivery of Brent Cross West Station;
- Bus Priority improvements;
- A programme of improvements to facilitate travel by disabled people, including delivery of any further bus stop accessibility improvements, local accessibility improvements (e.g. dropped kerbs, tactile paving, removal of steps, provision of handrail etc) and disabled parking bays;
- Delivery of Brent Cross Rail Freight Facility and delivery of a construction consolidation centre for the Brent Cross development.

3.5 Defining the assessment area

The spatial scope for the SEA is the London Borough of Barnet area. The SEA also takes account of potential impacts on adjoining boroughs and districts as appropriate. **Figure 3.1** following shows a map of the London Borough of Barnet area.

Figure 3.1: London Borough of Barnet area and adjoining boroughs



3.6 Timeframe for the Plan

The LIP includes policies and proposals that cover the period up to 2041. The LIP is expected to identify aspirational objectives and potential (more major) schemes to 2041 as well as shorter term objectives and a programme of investment for the first three years. This is therefore also the timeframe for the SEA.

3.7 Other policies, Plans, Programmes and Sustainability Objectives

3.7.1 National and Regional Policies

The most relevant plans and programmes at a national and regional (i.e. London-wide) level used as the basis to inform the objectives included in the appraisal framework for the SEA (See **Section 5.0** following) are set out in **Table 2.1** following:

Table 2.1: Relevant National and Regional Policies Reflected in the SEA Objectives

Topic	Policy Document
All Topics	Upper Lee Valley: Opportunity Area Planning Framework (2013)
	A Green Future: Our 25 Year Plan to Improve the Environment (2018)
	The London Plan: The Spatial Development Strategy for London (2016)
	The New London Plan: Draft for Public Consultation (2017)
	Mayor of London's Environment Strategy (2017)
	National Planning Policy Framework (2018)

Topic	Policy Document
Air Quality	Air Quality Standards Regulations 2010
	Defra's Air Quality Plan (2016)
	Environment Act 1995
	EU Ambient Air Quality Directive (2008/50/EC)
	The Greater London Authority Act 1999
Climate Change Adaptation	Climate Change Risk Assessment (CCRA)
	EC White Paper: Adapting to Climate Change
	National Adaptation Programme (NAP)
	UK Low Carbon Transition Plan (2009)
Climate Change Mitigation	Climate Change Act 2008
	Promotion of the Use of Energy from Renewable Sources Directive (2009/28/EC)
	United Nations Framework on Climate Change COP21 (2015) – Paris Agreement-
Fairness and inclusivity	Equality Act (2010)
Flood Risk	UK Water Strategy (2008)
Geology and Soils	England Soil Strategy, Safeguarding our Soils (2009)
	EU Environmental Liability Directive (99/31/EC)
Historic Environment	Ancient Monuments and Archaeological Areas Act 1979
	Planning (Listed Buildings and Conservation Areas) Act 1990
Materials and Waste	EU Waste Framework Directive (2008/98/EC)
	National Planning Policy for Waste (2014)
	Waste (England and Wales) (Amendment) Regulations 2014
Natural Environment and Natural Capital	Conservation of Habitats and Species Regulations 2010
	Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC
	Directive on the Conservation of Wild Birds 09/147/EC
	Natural Environment and Rural Communities Act 2006
	The Natural Choice – securing the value of nature (2011)
	Wildlife and Countryside Act 1981
Noise and Vibration	Environmental Noise (England) Regulations 2006
	EU Noise Directive (2000/14/EC)
Water Resources and Quality	Final Water Resources Management Plan 14 (WRMP14), 2015-2040 (Thames Water, July 2014) and Annual review June 2016; Affinity Water 2014 Water Resources Management Plan
	Thames River Basin District River Basin Management Plan (Environment Agency, December 2015)

3.7.2 London Borough of Barnet Policies

The following policy documents published by the London Borough of Barnet have also been used to inform the SEA objectives:

- Barnet Local Plan: Core Strategy.
- Barnet Local Plan: Development Management Policies.

- Barnet Local Plan: Core Strategy Sustainability Appraisal Final Report.
- Barnet Local Plan: Core Strategy Equalities Impact Assessment.
- Barnet Local Plan: Core Strategy and Development Management Policies Consultation Statement.
- London Borough of Barnet Air Quality Action Plan 2017-2022.
- London Borough of Barnet Waste Prevention Strategy 2005-2020.
- Barnet Carbon Emissions Action Plan, 2009
- Barnet's Environmental Policy – A Greener City-Suburb, 2008/09 – 2011/12
- Barnet Waste Prevention Strategy 2005 – 2020, 2005

4.0 Baseline Environmental Conditions

4.1 Air Quality

In common with other local authorities, air quality in Barnet is monitored at several specific locations and this information is also used to model the quality of air across the borough. The Council's latest air quality Annual Status Report indicates the whole of the borough of Barnet was designated an Air Quality Management Area (AQMA) for the nitrogen dioxide (NO₂) annual mean objective and PM₁₀ particulate daily mean objective since 2001. In 2010 this was extended to include the one-hour mean for NO₂ due to elevated concentrations at Golders Green Bus Station and at High Street locations across the borough.

Air quality monitoring indicates a steady and consistent reduction in NO₂ concentrations which will be further aided by LIP implementation. Large areas of the borough away from major roads enjoy air which is below the NO₂ annual mean objective. Measured concentrations of PM₁₀ do not exceed national air quality objectives. However, some are locations, including the major junctions in the borough, have been predicted to exceed the objectives due to high traffic flows, especially during peak times and at junctions where there are many stationary vehicles.

The dominant source of NO₂ and PM₁₀ emissions in Barnet is road transport with a variety of other sources contributing emissions. According to the latest London Atmospheric Emissions Inventory (LAEI) 2013, compiled by the GLA, 64% of oxides of nitrogen (NO_x) emissions in Barnet come from road transport and 19% from domestic or commercial gas use. For PM₁₀ emissions, 52% come from road transport.

The TfL MTS3 LIP Outcomes Borough Datapack indicates that in combination, changes in the vehicle fleet (e.g. more electric vehicles and the phasing out of diesel engines) and the policies of the MTS should result in significant reductions in air pollutant emissions from transport, as indicated in **Table 4.1** following

Table 4.1: Air pollutant emissions from road transport in Barnet (tonnes) by year

Pollutant	2013	2021	2041
Oxides of Nitrogen (NO _x)	1,300	560	80
Particulates (PM ₁₀)	127	109	83
Particulates (PM _{2.5})	73	53	40

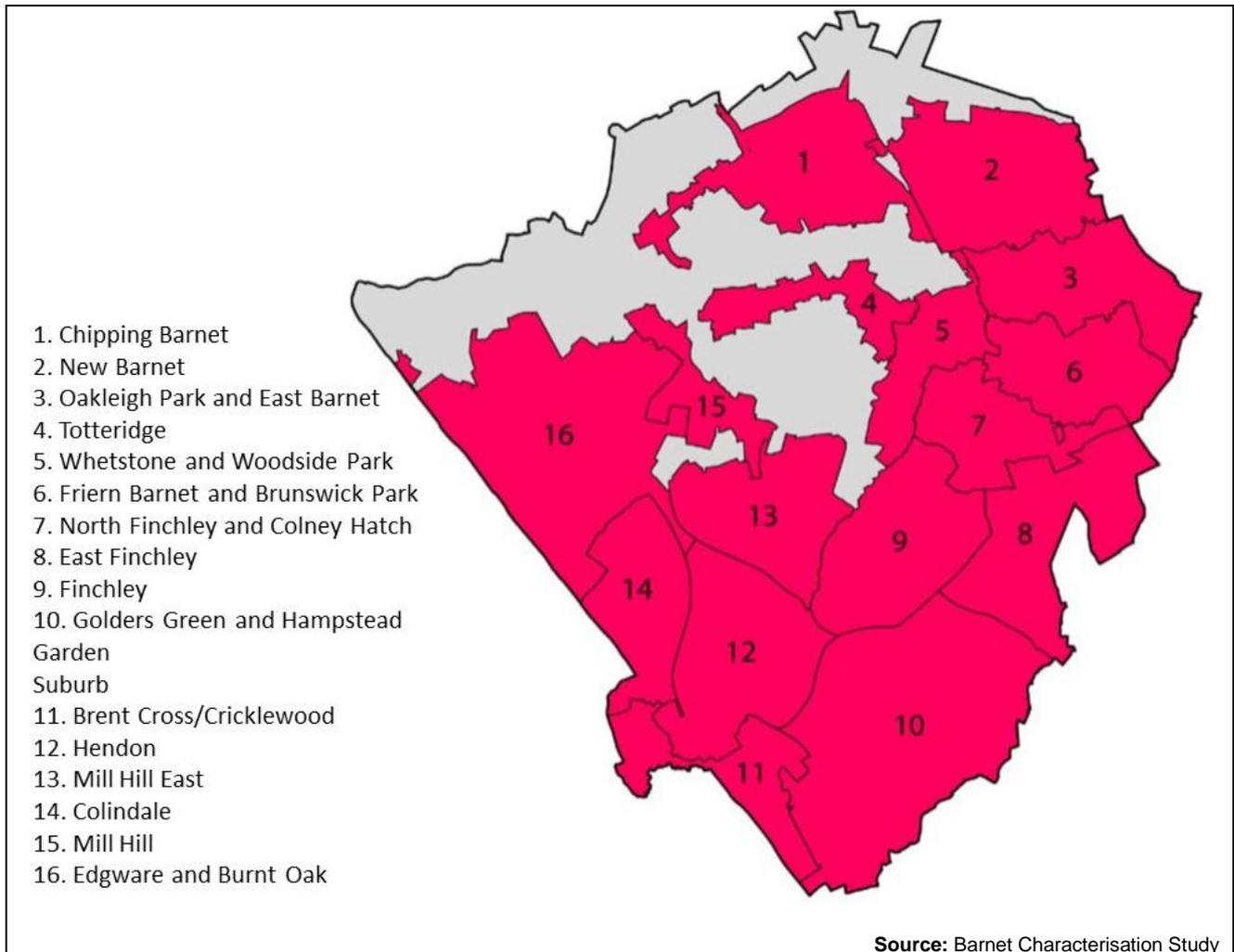
Although detailed modelling would be required to confirm this, it is likely that these reductions would allow the UK air quality objectives to be met across the borough. Also, without this modelling, it is not possible to disaggregate how much of these reductions are attributable to technological changes, and which due to MTS policies.

4.2 Attractive neighbourhoods

16 Character Areas have been identified in Barnet⁹, as illustrated in **Figure 4.1** on the following page and can be characterised as follows:

⁹ London Borough of Barnet (2010) - **Barnet Characterisation Study** - Final Report, May 2010.

Figure 4.1: Character Areas in London Borough of Barnet



- **Chipping Barnet:** The street layout generally is linear well-connected streets off Wood Street (A411), the main route through the area. In the southwest of the area, streets are more meandering with several culs-de-sac. Barnet High Street comprises Victorian terraces and a modern shopping centre. Residential development is interspersed with large green and open spaces, with golf courses to the north and King George's Field, Monken Hadley Common to the east, and Whiting's Hill open space and fields in the west. In the south are health and education uses at Barnet Hospital and Barnet College. Elsewhere, many streets are quite wide, and housing in High Barnet is mainly either detached or Victorian terraces. There are also some inter-war semi-detached houses in the rural fringes. Closer to the town centre the density increases, with large Edwardian houses on The Avenue and Ravenscroft Park. There is an overall consistency of building heights with little over three storeys. In the south of the area houses are predominantly inter war detached and semi-detached housing in a suburban setting with more recent housing located in the west. The topography of this part of the area provides views of the surrounding countryside.
- **New Barnet:** Street layouts are generally linear with a well-connected street pattern. Housing types are relatively consistent and relate to topography, which provides views of

the wider surroundings. Much of the housing is inter-war semi-detached, with pockets of earlier Victorian development especially in the north, and some areas of more recent development. Most residential units are two or three storeys at most. There are areas of greater density along streets like Station Road, Lyonsdown Road and Somerset Road, where buildings are more than five storeys in places. There is limited provision of green and open spaces in this area, although there are large areas of open space lie to the north, southwest and southeast.

- **Oakleigh Park and East Barnet:** This area comprises detached and semi-detached houses on regular streets, mostly built between the wars. The area includes a large green space at Oak Hill Park in the northeast and is adjacent to Brunswick Park in the southwest.
- **Totteridge:** Residential building plot sizes and street form in this area vary considerably. Large detached housing types in a rural village setting predominate, typically of two to four storeys with large front and rear gardens. Although very green, there are few public open spaces in the area except for Totteridge Park and the recreational grounds of South Herts Golf Course, as open space is mostly private, with large fields and farmland to the west. The area is comprised entirely of residential streets.
- **Whetstone and Woodside Park:** Most of this area has a rectilinear form of well-connected streets. Housing is predominantly semi-detached, inter-war suburban style, mainly two storeys and conventional front and rear gardens. The area also includes a small tract of industrial “sheds” in the north of the area.
- **Friern Barnet and Brunswick Park:** This area generally has a rectilinear form with interconnected streets, although some terminate in culs-de-sac. The street pattern is broken up by large areas of open space, and smaller areas of industrial and residential estates.
- **North Finchley and Colney Hatch:** This area is largely residential, with a network of regular streets largely of Victorian and Edwardian terraces off the A1000 High Road. At the western end of the area flats are mixed with houses, with limited visual coherence. Colney Hatch is predominantly residential, again with predominantly Victorian and Edwardian terraces.
- **East Finchley:** This area is quite disparate. It includes large areas of open space (including cemeteries, nature reserves and recreational open space) surrounded by areas of housing. In the northeast are extensive housing estates on the site of the former asylum, with irregular arrangements of culs-de-sac and former hospital buildings now converted to housing.
- **Finchley:** This is a cohesive and coherent area of residential streets off Ballards Lane / Regents Park Road. The street layout is predominantly a linear form of connected streets, becoming a more meandering in Church End. Houses are predominantly detached and semi-detached in a suburban setting, mostly two or three storeys. Ballards Lane and Regents Park Road are more densely developed with three to four storeys buildings and some rising to 8 storeys. There are other pockets of higher density buildings, ranging from four to six storeys, throughout the area. There are some local parks and green spaces, mostly adjacent to schools and educational use.
- **Golders Green and Hampstead Garden Suburb:** This character comprises a rectilinear residential street pattern of well-connected streets. Adjacent to the West Heath, streets begin to meander to reflect the topography yet remain well-connected and houses tend to

be larger. The character of the area is generally suburban although there are a variety of housing types. The southern part of the area largely comprises two to three storey semi-detached Victorian houses with terraces in areas to the west of Finchley Road. East of Finchley Road in areas adjacent to the West Heath, there is more detached housing on large plots, becoming semirural in character. Further north, in Golders Green and Hampstead Garden Suburb houses are predominantly semi-detached and detached. Green spaces are concentrated in the east of the area, in the Garden Suburb, with smaller spaces to the west. The area also is adjacent to large green and open spaces such as Hampstead Heath.

- **Brent Cross/Cricklewood:** This area largely comprises industrial and commercial uses, the Brent Cross Shopping Centre, and open space. There are some smaller areas of semi-detached or terraced houses, laid out on regular streets and set back behind front gardens, many given over to parking.
- **Hendon:** The street layout across this area is a rectilinear grid, although some streets terminate in culs-de-sac, especially to the west of Edgware Road. While the residential streets are typically terraced, there are a few high-rise residential blocks. There also are larger buildings for education and commerce in the central part of the area, a large area of open space at Sunnyhill Park in the northwest, and Hendon Park in the south. The character area includes three retail high streets at Brent Street / Church Road, Watford Way / Vivian Avenue, and West Hendon Broadway. The area also includes several residential estates. Buildings generally two storeys, and some taller buildings up to five storeys at the centre of the area.
- **Mill Hill East:** This area includes large areas of open space, including the cemetery and golf course, the former barracks site south of Mill Hill East station, schools and a small area of residential estates. Most of the built-up area is residential streets, and semi-detached in a suburban setting, two to three storeys with front and rear gardens. The street pattern comprises linear well-connected streets, although some streets at the western end of the area are culs-de-sac.
- **Colindale:** There is a distinct difference in character between the north and south of this area. Mixed uses (retail, industrial, hospital, training college etc.) cut across the residential areas. Areas to the south are largely residential streets of a coherent character, while areas to the north largely residential estates. Building heights are consequently inconsistent through the area, and the central and northern parts do not have any coherent character. Houses in the south of the area typically are two storey and semi-detached, built between the wars. In the north, the dwellings were mostly built in the mid to late twentieth century and include a mix of types arranged on culs-de-sac. Current plans for regeneration in Colindale will see an additional 10,000 homes provided, and a consequent increased density of development.
- **Mill Hill:** This area is largely semi-rural in character, and mostly residential.
- **Edgware and Burnt Oak:** This area is overwhelmingly residential in character, mostly comprising inter war development of semi-detached housing on linear residential streets. The area includes two linear shopping streets at Station Road (Edgware) and Mill Hill Broadway, as well as small pockets of residential estates, and commercial “sheds”.

4.3 Climate change mitigation and adaptation

The most recent figures available, for 2016¹⁰, indicate that after reaching a peak of 1773.7 kilotonnes per annum (kpa) in 2006, the level of carbon dioxide (CO₂) emissions in Barnet had fallen back to 1,252 kpa in 2016. The 2016 figure comprised 48% from dwellings, 21% from non-domestic buildings and 31% from transport.

The TfL LIP3 MTS Borough Datapack indicates that as a result of a combination of changes to the vehicle fleet and MTS policies, CO₂ emissions from road transport in Barnet will reduce from 387.6 kta in 2013 to 357.7 kta in 2021 and to 117.3 kta in 2041. However, detailed modelling would be required to determine what proportion of this reduction is due to technology and what to the MTS policies.

4.4 Energy use and supply

In 2015 (the latest figures available), Government statistics¹¹ indicated that 466 tonnes of oil equivalent (ktoe) energy was consumed in the London Borough of Barnet. This is lower than the average for boroughs across Inner London. Of this, gas consumption accounted for just under 50%, while 22% was electricity consumption and just over 27% was of petroleum products. Over 21% of energy consumed was by industry, and nearly 52% was consumed in people's homes. Over 27% of energy used was for transport.

4.5 Fairness and inclusivity

The population of London Borough of Barnet was just over 357,650 at the 2011 Census, the largest of any London borough. This is estimated to have risen to just under 397,050 by mid-2018, an increase of just over 11%. The breakdown of Barnet's population by ethnicity is indicated in **Table 4.2** following:

Table 4.2: Ethnic makeup of London Borough of Barnet 2018

Ethnicity	Number	%
White - British	158,875	40
White - Irish	8,913	2.2
Other White	72,247	18.2
White and Black Caribbean	3,533	0.9
White and Black African	3,875	1
White and Asian	7,129	1.8
Other Mixed	6,682	1.7
Indian	30,234	7.6
Pakistani	6,384	1.6
Bangladeshi	2,510	0.6
Chinese	10,522	2.7

¹⁰ Department of Energy and Climate Change (2018) - **2005 to 2016 UK local and regional CO₂ emissions: Statistical Release.**

¹¹ Department for Business, Energy and Industrial Strategy (2017) - **Sub-national total final energy consumption in the United Kingdom (2005 - 2015)** – 28th September 2017.

Ethnicity	Number	%
Other Asian	30,451	7.7
Black African	23,227	5.8
Black Caribbean	4,937	1.2
Other Black	4,491	1.1
Arab	6,955	1.8
Other ethnic groups	16,084	4.1
<i>Total</i>	<i>397,049</i>	<i>100</i>

Source: London Datastore

The proportions of the White British and BAME populations in Barnet are similar to those for London as a whole. However, it should also be noted that Barnet has by far the largest Jewish population of any London borough, with 17.5% of the population reported as Jewish in the 2016, compared with 1.7% for London as a whole¹².

In terms of disability, approximately 14% of Barnet's population is disabled, which is about average for London¹³. Just over 4% of Barnet's population receive Employment Support Allowance or Incapacity Benefits. This is slightly below the London average and below the average for Britain as a whole. Less than 1% of the population claim Disability Benefit, which is similar the regional and national average¹⁴.

The London Borough of Barnet ranked 156 out of 326 local authorities in England in the Index of Multiple Deprivation, and 25 out of the 33 London Borough¹⁵.

The fastest growing population locally is typically among working age people aged between 30 and 50. The number of people aged 65 and over has typically been declining. Population growth locally seems mostly due to an increase in birth rates locally and net gain from international migration, principally from EU states in Eastern and Southern Europe.

There are marginally more women and girls than men and boys living in the borough, but no significant differences from the proportions at London and national levels.

4.6 Flood risk

Flood zones for planning purposes are defined by the Environment Agency, based on the likelihood of an area flooding. The three zones are:

- **Flood Zone 1** has less than 0.1% chance of flooding in any year (or 1:1000-year chance). There are very few restrictions on development these areas, exception where proposed development over 1ha in size, or is in a Critical Drainage Areas (i.e. deemed to be at high risk of flooding from rainfall).

¹² Office of National Census (2017) – **Annual Population Survey**.

¹³ Transport for London (2015) – **Travel in London; Understanding Our Diverse Communities** – September 2015.

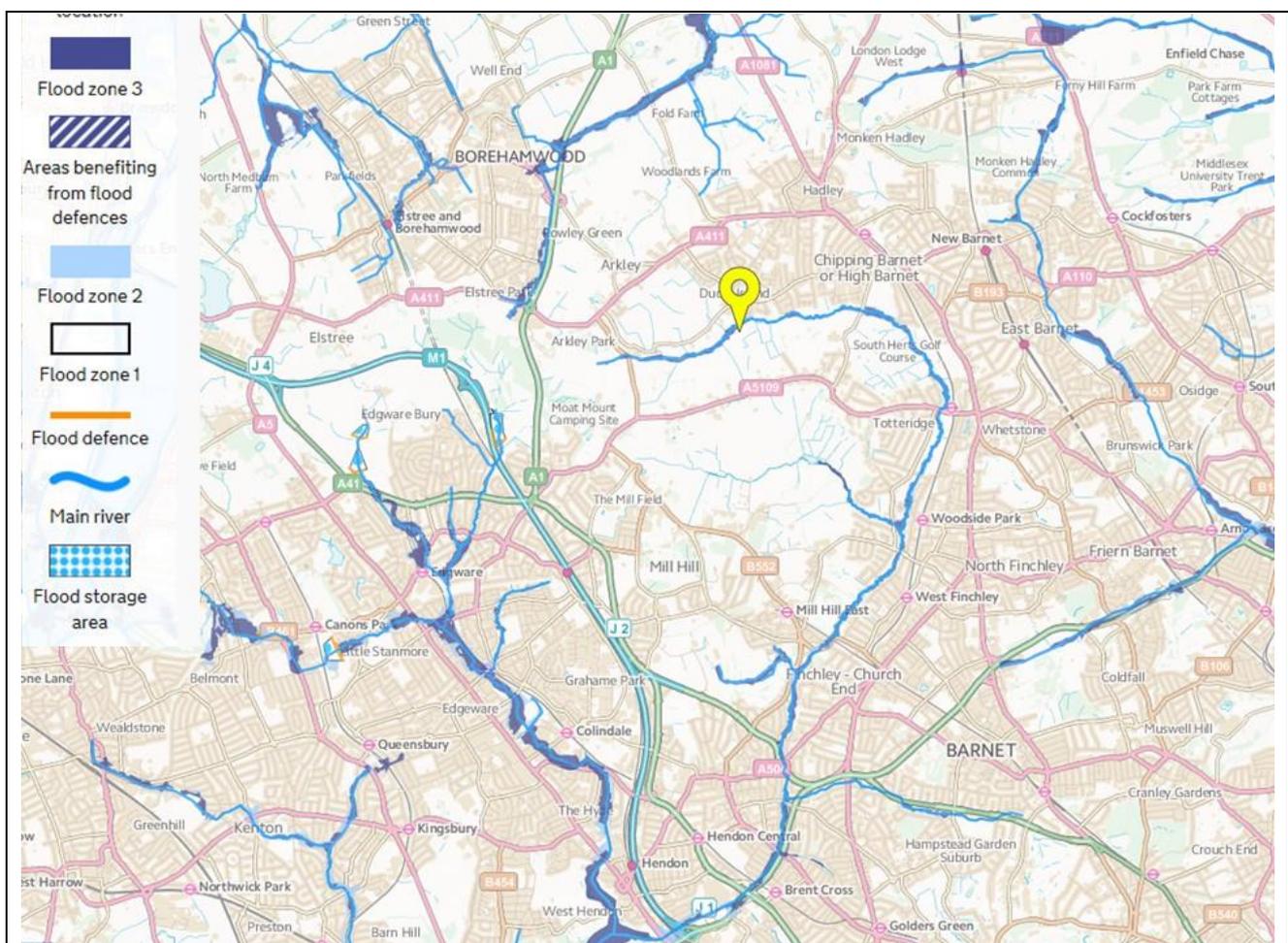
¹⁴ Office for National Statistics (2016 – **NOMIS**.

¹⁵ Department for Communities and Local Government (2015) - **English Indices of Deprivation 2015** - File 10 Local Authority District Summaries.

- **Flood Zone 2** has between 0.1% – 1% chance of flooding from rivers in any year (between 1:1000 and 1:100 chance).
- **Flood zone 3** has 1% or greater probability of flooding from rivers.

The flood risk zones in the London Borough of Barnet are illustrated in **Figure 4.2** following and principally related to the Pymmes Brook through New Southgate and East Barnet, the River Brent/Dollis Brook and Folly Brook through Hendon, Mill Hill East and Totteridge, and the Silk Stream and Burnt Oak Brook through Hendon, Colindale and Edgware. More information on water resources in the borough is provided in **Section 4.14** below.

Figure 4.2: Flood Risk Areas in the London Borough of Barnet



Source: The Environment Agency

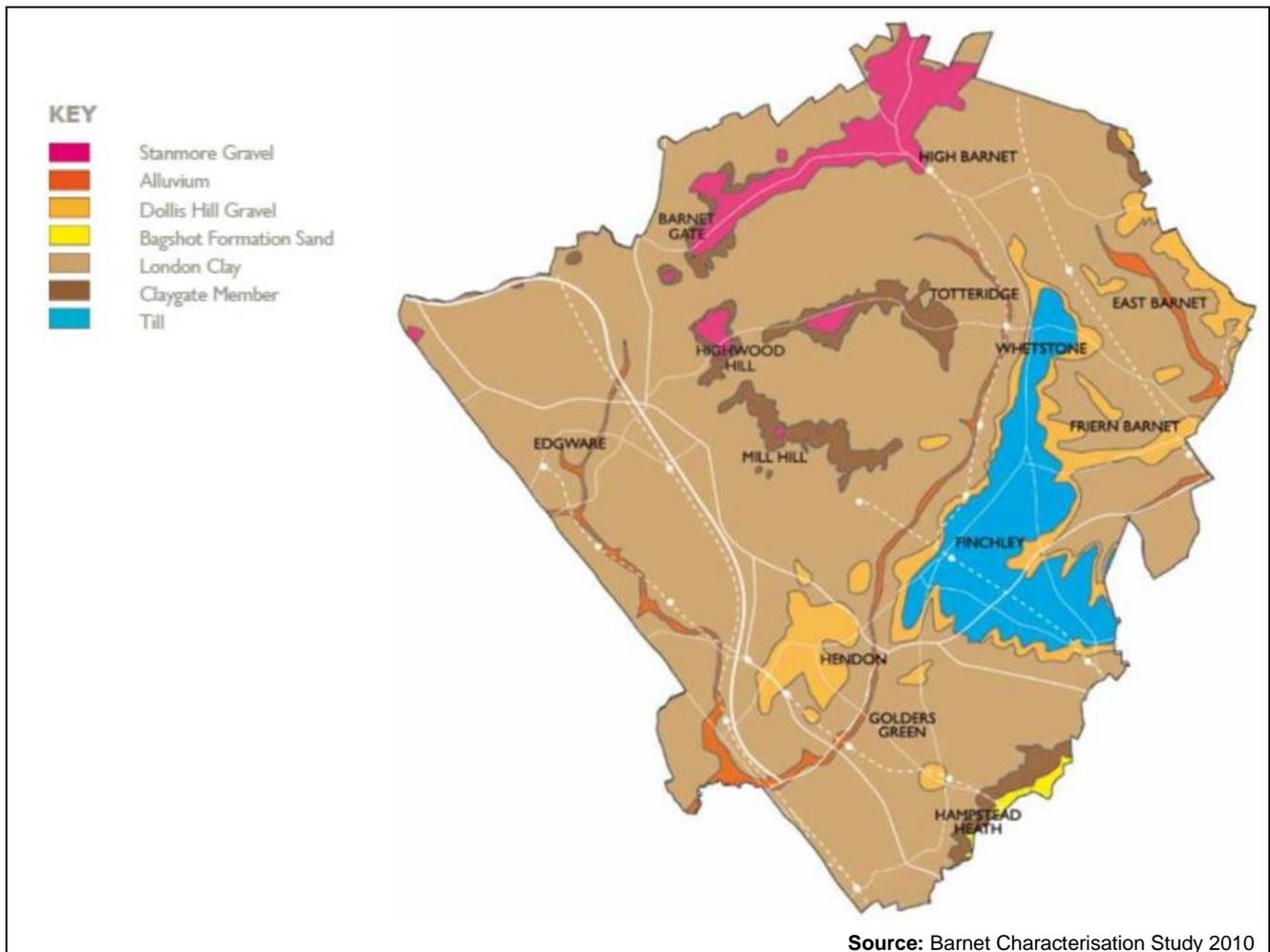
4.7 Geology and soils

The Borough is within the London Basin, bounded by chalk uplands: to the south by the North Downs and to the north by the Chiltern Hills. Barnet has a high preponderance of clay soils. On higher ground in the borough, other strata are exposed, including patches of Stanmore gravel on the northern highest points around Highwood Hill and leading up to Chipping Barnet, and Claygate Member around Totteridge and Mill Hill which has a sandy/silty character.

Finchley sits on a large exposed area of Till, which although clay, has a lighter chalky/sandy character. The margins of this area expose a lower stratum of Dollis Hill Gravel which also appears on the surface around Hendon.

The geology and soils of the Borough are illustrated in **Figure 4.3** following.

Figure 4.3: Geology and Soils in the London Borough of Barnet



4.8 Historic Environment

Barnet has a broad range of heritage assets including Conservation Areas, Listed Buildings, Registered Historic Parks and Gardens, Locally Listed Buildings, Scheduled Ancient Monuments, a Historic Battlefield site and Local Areas of Archaeological Significance. Heritage assets are recognised in the Local Development Framework to ensure continued sustainability of an area and promote a sense of place.

Conservation Areas in Barnet vary from the large garden suburb estates at Hampstead Garden Suburb to historic settlements at Monken Hadley, Mill Hill and Totteridge, a small 19th Century model farm (College Farm, Finchley) and workers cottages at the Railway Terraces in Cricklewood. The Borough's rich archaeological and architectural heritage which includes the only Historic Battlefield (Battle of Barnet – 1471) in London and nearly forty sites of archaeological

importance. There are over 2,200 Listed Buildings and a further 1,600 buildings on the Local List. There are two Scheduled Ancient Monuments at Brockley Hill in Edgware and Manor House in Finchley, three registered Historic Parks and Gardens at St Marylebone Cemetery, Avenue House Garden and Golders Green Crematorium.

4.9 Materials and waste

As one of the largest boroughs in London, Barnet produces the second largest amount of waste in north London. In 2005, each resident of Barnet produced around 477 kg of waste every year (about seven times their body weight in rubbish). The total amount of waste produced in Barnet was 153,000 tonnes a year in 2005. Trends indicate that the amount of waste Barnet produces will increase to approximately 228,000 tonnes per year by 2020 in line with a predicted national increase and in part due to a predicted increase in households in the borough, as well as an ongoing increase in the amount that existing households are throwing away.

4.10 Mental and physical wellbeing

People living in Barnet live about two years longer than the national averages, although life expectancy is 6.3 years lower for men and 5.0 years lower for women in the most deprived areas of Barnet. Just over half of adults (aged 18+) have excess weight. The percentage of physically active adults (aged 19+) is just under 60%, which is lower than regional and national levels.¹⁶

Physical activity among people living in Barnet is significantly worse than the average for London and England, and this trend is worsening with 28.6% of Barnet adults in 2016/17 being physically inactive. There also is a large variation in physical activity levels within Barnet. The highest recorded prevalence found in the west of the borough in Burnt Oak and Edgware, and in the east of the borough in Woodhouse, Brunswick Park and East Barnet. Similarly, there is variation in overweight and obesity levels among children in Barnet.

4.11 Natural Capital and Natural Environment

There are two European Sites within a 10 km radius of Barnet:

- **Epping Forest Special Area of Conservation:** Epping Forest was designated as a SAC in 2005. It comprises a large ancient wood-pasture with habitats of high nature conservation value including ancient semi-natural woodland, old grassland plains, wet and dry heathland and scattered wetland. The forest is primarily beech on acid soils, which are important for a rare mosses, fungi, invertebrates and insects (including stag beetles) associated with decaying timber.
- **Lee Valley Special Protection Area and Ramsar Site:** Lee Valley comprises nearly 450 ha. of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that display a range of man-made and semi-natural wetland and valley bottom habitats. The area comprises the Sites of Special Scientific Interest (SSSIs) at Amwell Quarry, Rye Meads, Turnford and Cheshunt Pits, and Walthamstow Reservoirs. SPA status was granted in 2000 because of the site's European ornithological interest. It is used regularly by rare species such

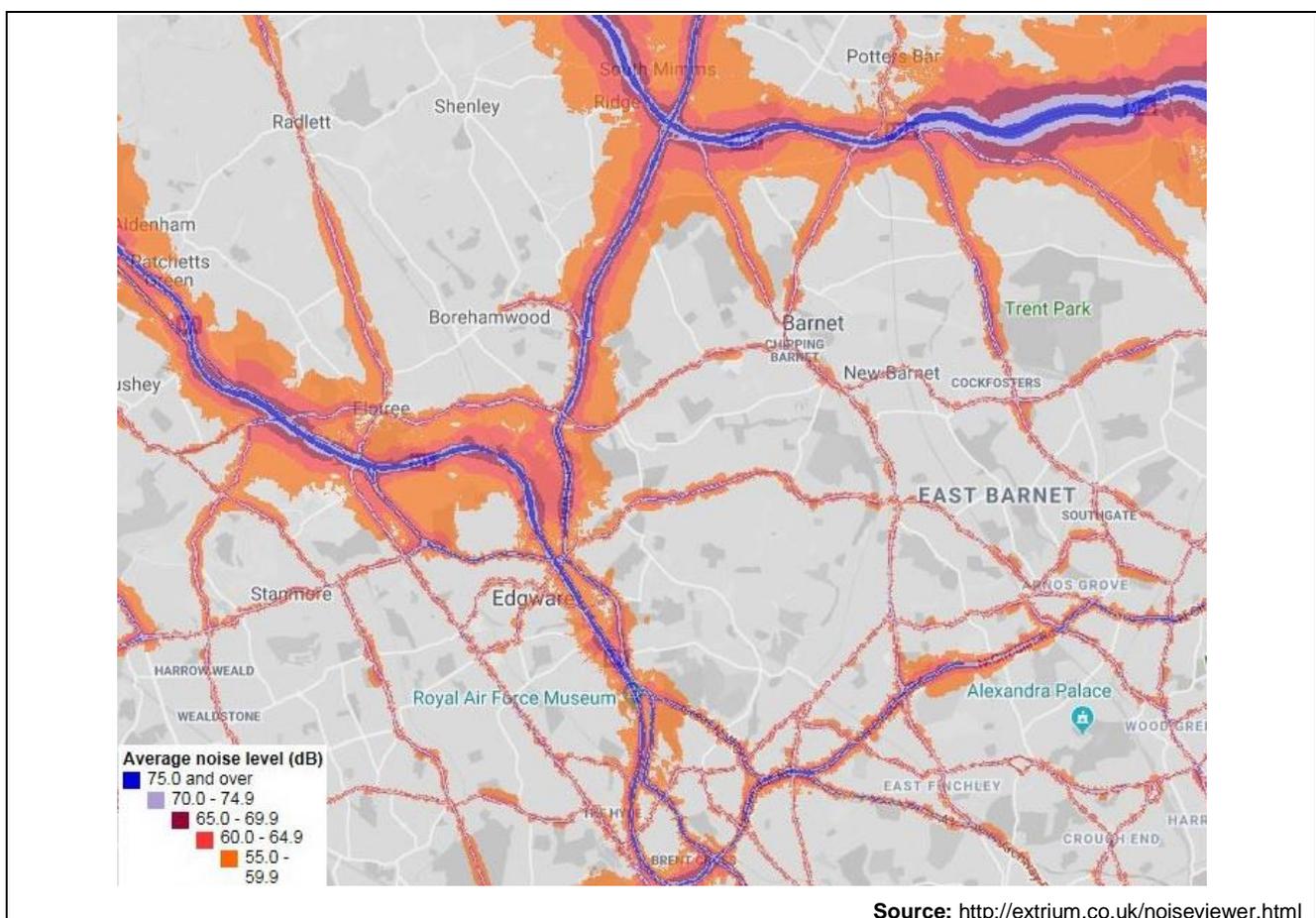
¹⁶ Public Health England (2018) – **Local Authority Health Profiles: Profiles for London.**

as Bittern and migratory birds like shoveler and gadwall. Other species of interest are cormorant, great crested grebe, tufted duck, pochard and grey heron.

4.12 Noise and vibration

Little information is available on noise and vibration generally across the Borough. **Figure 4.4.** following shows estimated levels of road traffic noise, which is the primary noise source in most parts of the Borough. This is based on the strategic noise mapping exercise undertaken by the Government in 2012, and shows results are shown for LAeq,16h, which is the annual average noise level (in dB) for the 16-hour period between 0700-2300.

Figure 4.4: LAeq 16-hour road traffic noise levels in London Borough of Barnet 2012



The actual level of noise may have increased due to increases in traffic since 2012, but this is unlikely to be to a significant extent. The pattern and distribution of noise levels is likely to be relatively unchanged over this time. From **Figure 4.4** it may be seen that the main areas affected by traffic noise in Barnet unsurprisingly are along the main traffic routes through the Borough. In particular, areas close to the M1 and A1, A406 North Circular Road, A1081 St. Albans Road, A1000 Barnet Road/High Street/Barnet Hill Prickler's Hill, and Totteridge Lane/Totteridge Common/Oakleigh Road North.

The TfL MTS LIP3 Borough Datapack indicates that the amount of traffic on roads in Barnet may reduce by up to 10% by 2041, due to the MTS policies. However, this reduction would not be sufficient to lead to a significant decrease in noise from road traffic.

4.13 Safety and security

26,227 crimes were reported in the London Borough of Barnet in the year up to March 2018, with a total crime rate of 67.9 per 1,000 population. This was the seventh lowest in London, and also below the national average for England. The level of crimes has remained constant in the area over time. Crime rates are highest in the wards in the extreme west and east of the Borough (i.e. Edgware, West Hendon, Childs Hill and Coppetts Wards). The lowest rates are in the central areas of the Borough (i.e. Totteridge, Oakleigh, Finchley Church End and East Finchley Wards).

4.14 Water resources and quality

Barnet has 14kms of streams and brooks. As noted in **Section 4.6** above, potential flooding from Dollis Brook, Silk Stream, Pymmes Brook and their associated tributaries as the primary source of risk in the borough. Barnet's main water courses typically are of fair to poor chemical quality according to the Environment Agency.

Dollis Brook rises at Moat Mount Open Space in Mill Hill and flows eastwards through Totteridge Fields and other open spaces to King George V Playing Fields. From here it flows south passing near Totteridge and Whetstone tube station through Woodside Park, merging with Folly Brook and passing under the Northern Line, Dollis Road and through Windsor Open Space to the A1 to Bridge Lane in Hendon where it merges with Mutton Brook to form the River Brent.

Silk Stream begins in Burnt Oak at the confluence of the Edgware Brook and Deans Brook. It flows for approximately 2 miles through Colindale and West Hendon to enter the Brent Reservoir (Welsh Harp).

Pymmes Brook rises in Hadley Wood, and flows generally south-east through East Barnet, where it merges with the Shire Bourne, and continues through New Southgate, Arnos Grove and on into Palmers Green in Enfield.

5.0 SEA Objectives and Framework

5.1 Objectives

Temple and Steer have confirmed with Barnet Council that it is happy to use the TfL/GLA framework that was developed to satisfy SEA requirements for plans and strategies produced by the Mayor of London as the basis for the current assessment.

The SEA topics indicated as in scope in **Section** Error! Reference source not found. above and the objectives against which the proposals set out in the LIP will be evaluated are set out in **Table 5.1** below.

Table 5.1: TfL/GLA environmental objectives for SEA

Environmental topic	Objective
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and distinctiveness, reducing the need to travel by motorised transport.
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population; and
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings.
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure
Safety and security	To contribute to safety and security and generate the perceptions of safety;

We have reviewed the baseline information collated, together with the outcomes of the IIA undertaken for MTS3 and other information on the specific proposals likely to come forward through each LIP to identify the existing sustainability issues that are relevant.

5.2 Alternatives

To meet the requirements of the SEA Regulations, it is also necessary to identify reasonable alternatives to the proposals presented in the LIP, and meaningful comparisons made of the environmental implications of each. Experience tells us that, in the context of LIPs delivering the policies and proposals already identified in the MTS, it can be assumed that the only real reasonable alternative to the LIP proposals is the “do-nothing” scenario. On this basis, we do not propose to manufacture other alternatives simply for comparison in the SEA.

The proposals set out in the LIP have been identified through a structured appraisal and evaluation of candidate projects. Project ideas were generated through discussion with internal stakeholders, considering the council’s Borough Plan objectives and other related priorities. In parallel, the Council reviewed the transport evidence base identify key issues to be addressed and trends such as clusters of accidents or locations where high traffic speeds were consistently recorded. The public and key stakeholders were also consulted on these matters.

Barnet Council then combined the evidence base and stakeholder feedback to identify correlations. This generated a ‘long list’ of projects for further evaluation using multicriteria analysis, scoring each against a range of local and Mayoral priorities as well as deliverability, value for money, and synergies with existing programmes. The resulting prioritised list of schemes is the basis of the 3-year programme set out in the LIP.

5.3 Habitats Regulations Assessment

As well as SEA, the LIP may also require a Habitats Regulations Assessment (HRA), as set out in the Conservation of Habitats and Species Regulations 2010 (as amended) if it is likely to have significant effects on European habitats or species.

Taking note of the reasons for designation of the sites described in **Section 4.11** above, the proximity of these areas in relation to the proposals set out in the LIP, and the characteristics of the proposals, it is concluded that no significant environmental effects on the protected areas that may affect their conservation objectives^{17,18} will be likely to arise from implementation of the LIP. On this basis, no further assessment has been undertaken.

5.4 SEA Framework Matrices

5.4.1 Approach

To evaluate the effects of the LIP, Temple and Steer have used the adapted GLA SEA framework matrix in this section. The eight Borough Transport Objectives of the LIP, together with the long-term and short-term programmes of proposals identified are assessed in turn in the matrix tables in

¹⁷ Natural England (2014) - **European Site Conservation Objectives for Epping Forest Special Area of Conservation** - Site Code: UK0012720.

¹⁸ Natural England (2014) - **European Site Conservation Objectives for Lee Valley Special Protection Area** - Site Code: UK9012111.

this section. For simplicity some of the LIP objectives have been grouped together. Table 5.2 provides a list of the seven matrices.

Table 5.2 Summary of SEA Matrices and Barnet LIP objectives

SEA Matrix	Objectives/proposals
1	A. Encouraging healthier lifestyles B. Applying 'Healthy Streets' principles to deliver a range of improvements C. Achieve zero 'Killed or Seriously Injured' Road Traffic Casualties by 2041
2	D. Support more sustainable travel to school, workplaces and other destinations:
3	E. Improve air quality in Barnet and reduce exposure to pollution, especially for children:
4	F. New and revised public transport routes: G. Introduce step-free facilities at stations and accessible bus stops:
5	H. Secure significant regeneration and growth in Barnet's opportunity areas:
6	Long-term proposals
7	Short-term proposals

The likely effects of implementing the LIP has been based on the professional judgements of our SEA team, evidenced by information from the LIP3 MTS Outcomes Borough data pack that was provided to the London Boroughs by TfL. This data pack was based on transport modelling that was completed by TfL to inform the third MTS. The results of this modelling are useful in informing the assessment, given that purpose of the LIP is to implement the MTS is a borough. It should be noted that the results of the modelling cannot be used directly, as it was only conducted at a strategic level, with the purpose of obtaining London-wide results. As such, borough-specific outputs are not available. Furthermore, this modelling takes into account the entire MTS, only some of which may be reflected in the LIP.

Notwithstanding the above, the results of the MTS modelling provide an indication of the likely direction and scale of change expected as a result of the MTS policies. As such, by considering what proportion of the scenario modelled for the MTS is directly related to LIP policies, we gain insights into their potential effects.

This is made easier as various packages were modelled for the MTS, as described in **Table 5.** below. Package A is the reference case, largely reflecting business as usual. Various packages were then modelled on top of this, with each subsequent package being cumulative (so for example, Package C includes the measures in Packages A and B plus some additional measures).

Table 5.3: Description of packages modelled for the MTS

Package	Description
Package A: Core reference case	<p>The core reference case includes funded public transport and highway schemes and likely changes in London's land use and economy. It assumes the latest available projections of population and employment from the GLA as well as Government assumptions on changes in the wider economy, and current funded schemes. A scheme list is provided in Appendix 1 and a summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Current view of funded National Rail2 schemes, HLOS programme, Thameslink programme, HS2, West Anglia and Great Western improvements. • The opening of the Elizabeth Line in 2019, the Northern Line Extension and Tube upgrades to the Victoria, Jubilee, Northern and Sub Surface Lines. • DLR, Trams, London Overground and bus service improvements. • TfL's Road Modernisation Plan, cycling infrastructure schemes and the introduction by 2020 of the Central London Ultra Low Emission Zone (ULEZ). <p>Wider assumptions have been made about policies relating to aspects such as fares, fuel costs and car parking.</p>
Package B: Optimising the network	<p>One of the main challenges identified in the core reference case is continued traffic dominance with highway congestion affecting bus speeds. Package B aims to enhance the existing network through bus priority schemes the reallocation of road space in areas of high place value identified by the Street Types for London. It also includes frequency improvements to some rail services. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Bus priority schemes, enabling faster journey times in Central London; low emission bus zones; and high frequency links; • 30 trains per hour on the Elizabeth Line; • Some selected National Rail and London Overground improvements; • Tram frequency uplifts; and • 10 to 30 per cent reduction in highway capacity on the highway links with the highest value ('place') as identified in Street Types for London.
Package C: Incremental expansion	<p>Crowding on the Tube, Elizabeth Line, DLR, London Overground, Trams and National Rail is a key challenge in the core reference case because funded improvements do not go beyond the mid-2020s and demand for travel will increase. Building upon the improvement schemes included in package B, package C aims to reduce crowding, encourage further mode shift from the car and increase public transport demand. London can also maximise the benefits of National Rail in south London by creating a London Suburban Metro. These schemes represent improvements that require line or track upgrades and new rolling stock but not new rail lines. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Deep Tube upgrade & World Class Capacity programmes including upgrades to the Bakerloo, Central, Waterloo & City, Piccadilly, Jubilee and Northern Lines; • Creating a London Suburban Metro; • Further National Rail investment including upgrades to West Anglia mainline, Brighton mainline, Chiltern Line and new stations; • 30 trains per hour on the DLR; • London Overground frequency increases; and • Construction of the Silvertown Tunnel and associated bus improvements.

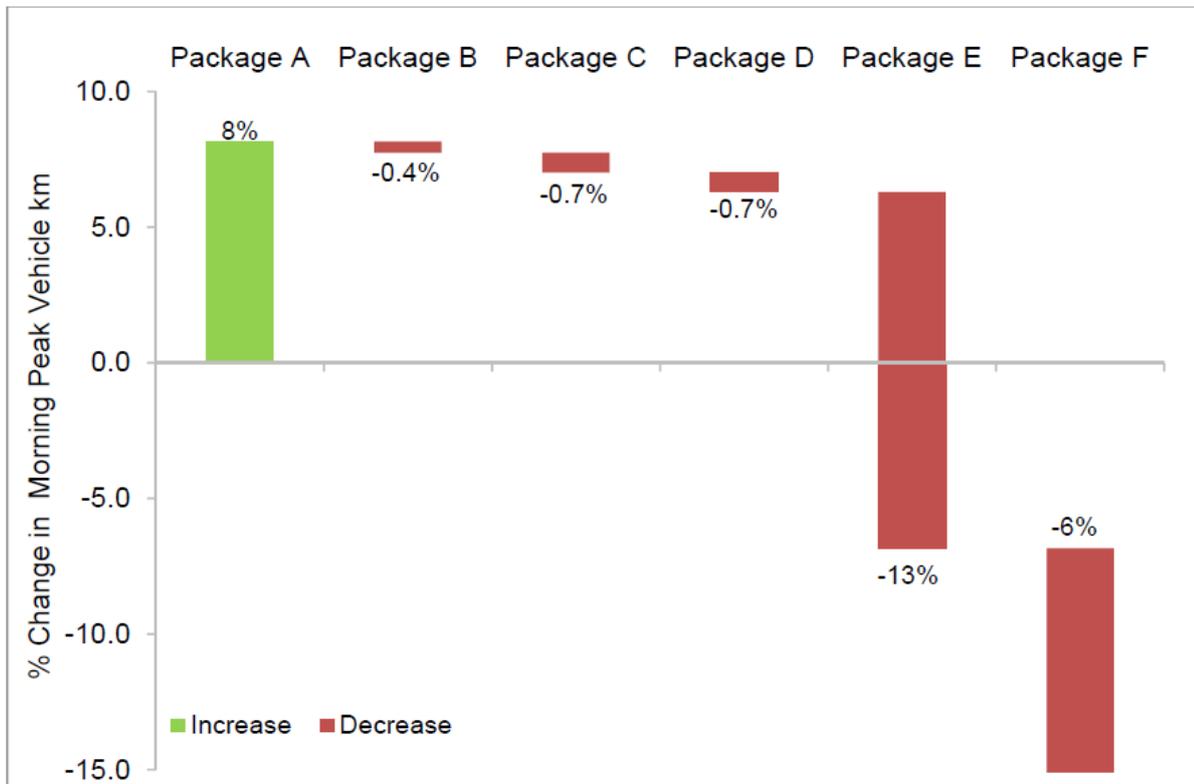
Package	Description
Package D: New connections	<p>New public transport connections are needed to unlock growth in jobs and homes, provide an improved public transport service and reduce crowding. These schemes also support further agglomeration benefits in London's economy. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Crossrail 2, linking Surrey and Hertfordshire with two new 37 kilometre tunnels from Wimbledon to Tottenham Hale and New Southgate; • Bakerloo Line Extension to Lewisham and beyond; • Elizabeth Line extension to Slade Green; • DLR extensions from Gallions Reach; • London Overground extensions and strategic interchange investment including to Barking Riverside and Abbey Wood, and to Hounslow; • Tram extension from South Wimbledon to Sutton; and • Further bus network development.
Package E: Traffic reduction	<p>Package E contains a range of measures to reduce traffic and achieve Healthy Streets for London. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Further road space reallocation to walking, cycling and bus priority in order to reduce traffic dominance and deliver Healthy Streets for London. • Further increases in parking charges, limits on free commuter parking or a work place parking levy; • Measures to accelerate the rate of car ownership reduction resulting in a quarter of a million fewer cars owned in London; and • Measures to limit the growth of freight traffic, so that HGV traffic does not rise, and van traffic grows only in line with population.
Package F: Longer term changes to the way road use is paid for	<p>Changes to the way road use is paid for in the longer term could help achieve an 80 per cent mode share for walking, cycling and public transport. A summary of the illustrative measures included is provided below:</p> <ul style="list-style-type: none"> • An indicative distance-based charge. The inner London distance-based charge assessed was twice the outer London charge per kilometre; and • Measures to encourage green technology uptake.

Source: Transport for London, Mayor's Transport Strategy: Supporting Evidence Outcomes Summary Report, July 2017

The definitions of the packages are shown in the table below. It can be seen that there are elements in most of the packages that reflect what is contained in the LIP. However, it is Package E that is most closely related to what is proposed in the LIP. As such, whilst recognising that this is a simplistic approach, examining the marginal impact that Package E has provides a rough indication of the potential direction and magnitude of the impact of the LIP.

Figure 5.1 following shows that on a London-wide basis, Package E accounts for a large proportion of the overall reduction of vehicle-kilometres travelled in the morning peak hour. As such, it is likely that the policies in the Barnet LIP are likely to result in a significant decrease in vehicle-kilometres travelled.

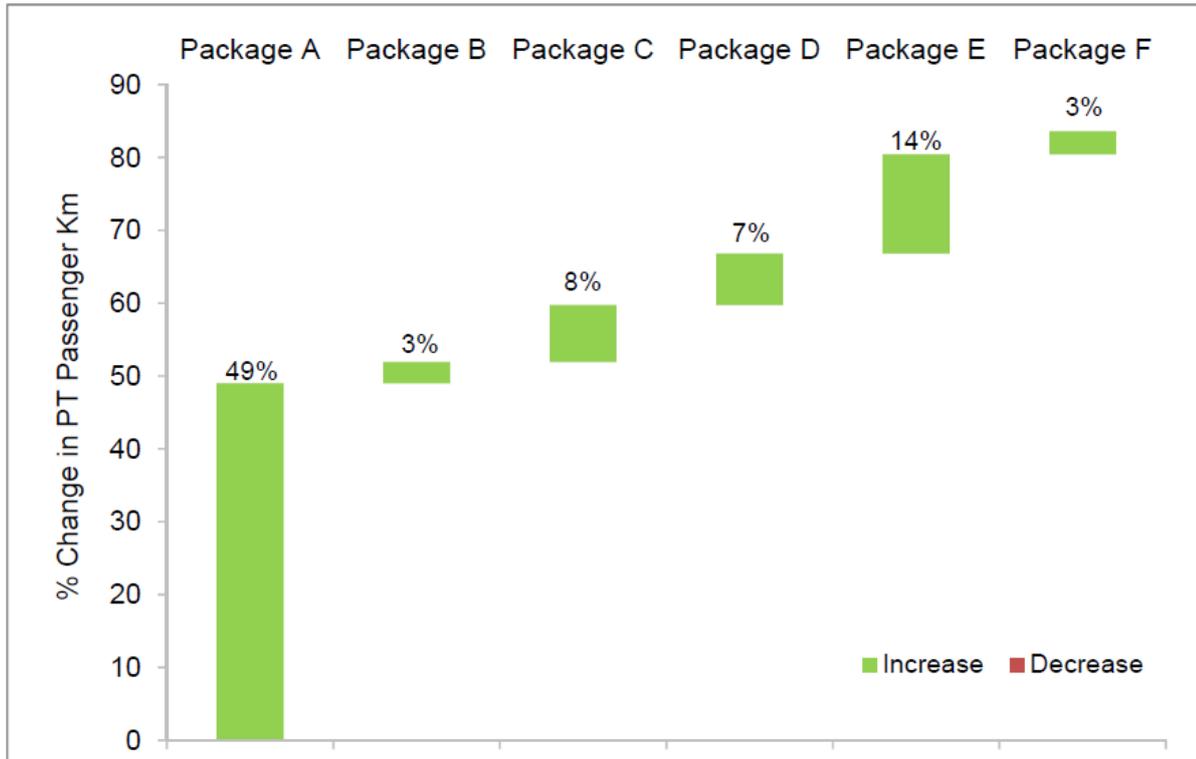
Figure 5.1: Change in London morning peak hour vehicle kilometres, 2015 to 2041 for packages A to F



Source: Transport for London (2017) -, Mayor's Transport Strategy: Supporting Evidence Outcomes Summary Report, July 2017

For public transport use, **Figure 5.2** following shows that the expected London-wide increase is primarily associated with Package A. However, Package E is expected to further increase public transport use, albeit by a smaller amount. This indicates that the policies in the Barnet LIP are likely to result in an increase in public transport usage.

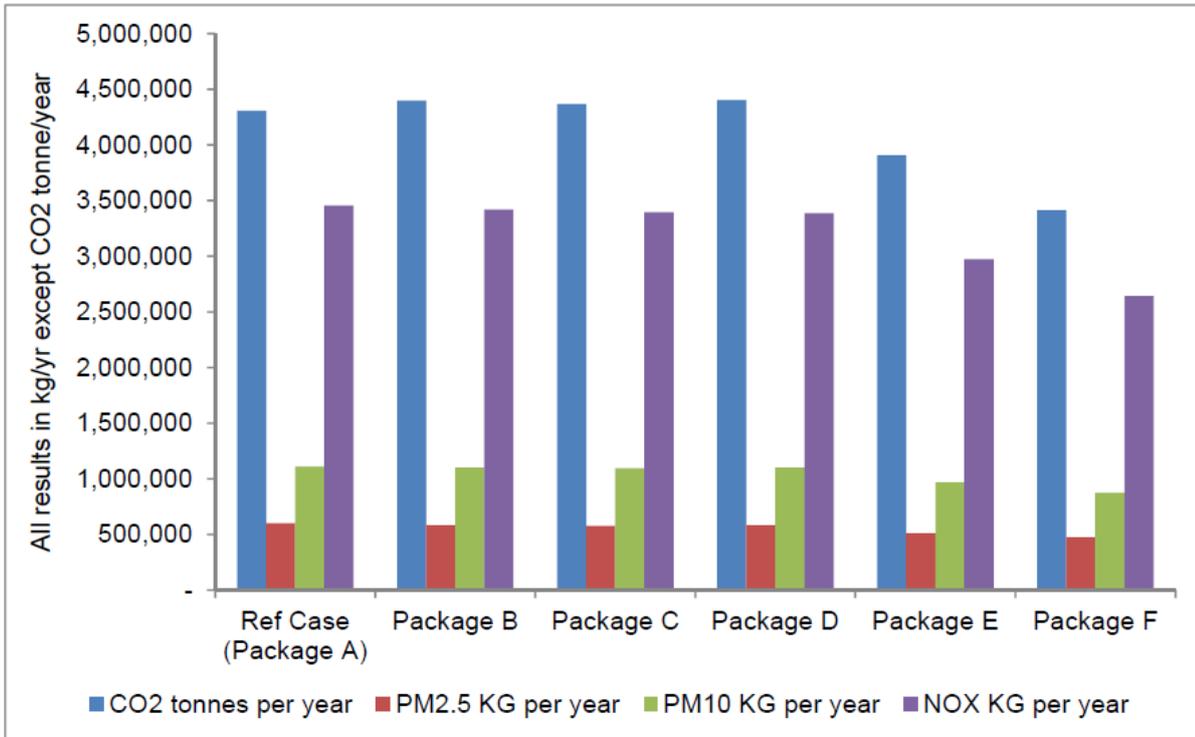
Figure 5.2: Change in 12-hour public transport passenger kilometres, 2015 to 2041 for packages A to F



Source: Transport for London (2017) - Mayor's Transport Strategy: Supporting Evidence Outcomes Summary Report, July 2017

In terms of greenhouse gas and local air pollutant emissions from transport, **Figure 5.3** following shows that there is a noticeable decrease between Package D and Package E, which shows that the marginal impact of Package E is positive. However, this should be viewed in the context of a very large reduction between the existing situation and Package A, primarily due to factors such as technological changes. As such, relative to the existing situation, the marginal emission reductions due to Package E are very small. This means that the impacts of the policies in the Barnet LIP are likely to be positive in this regard, however at a very small scale when compared to the existing situation.

Figure 5.3: CO₂, PM_{2.5}, PM₁₀ and NO_x emissions from road-based transport, 2041 for packages A to F



Source: Transport for London (2017) - Mayor's Transport Strategy: Supporting Evidence Outcomes Summary Report, July 2017

In the SEA framework matrix, effects have been evaluated using the following scale, as set out in Table 5.3.

Table 5.4: Scale to be used for Evaluation of Environmental Effects in the SEA

Scale of effect		Definition
++	Major positive effect	Strategy/LIP contributes greatly towards achieving the SEA objective/Significant Effect
+	Minor positive effect	Strategy/LIP contributes to achieving the SEA objective
0	Neutral or no effect	Strategy/LIP does not impact upon the achievement of the SEA objective
-	Minor negative effect	Strategy/LIP conflicts with the SEA objective
--	Major negative effect	Strategy/LIP greatly hinders or prevents the achievement of the SEA objective/Significant Effect
?	Uncertain	Strategy/LIP can have positive or negative effects but the level of information available at a time of assessment does not allow a clear judgement to be made

5.4.2 Matrix 1: LIP Objectives A-C

Table 5.5: SEA Matrix 1 LIP Objective A: Encouraging healthier lifestyles, Objective B: Applying ‘Healthy Streets’ principle and Objective C: Achieve zero ‘Killed or Seriously Injured’ by 2041

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying ‘Healthy Streets’ principles and C: Achieve zero ‘Killed or Seriously Injured’ by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	Encouraging healthier lifestyles and active travel will help mode shift from cars, together with support for liveable neighbourhoods will support emissions reduction. Promotion of Healthy Streets and Vision Zero principles will help reduce growth in emissions.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift and healthy streets proposals are not likely to be sufficiently great to give a significant improvement in air quality in addition to that due to changes in vehicle technology.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and ‘at risk’ groups?	Mode shift and healthy streets proposals are not likely to be sufficiently great to give a significant improvement in air quality in addition to that due to changes in vehicle technology.	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it result in air quality changes which negatively impact the health of the public?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles are not likely to be sufficiently great to reduce number of people exposed to poor air quality in addition to that due to changes in vehicle technology.	0	None required
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles is not likely to be sufficiently great to give a significant improvement in air quality in addition to that due to changes in vehicle technology.	0	Consider traffic management measure to reduce traffic flows in areas with high concentrations of vulnerable people
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Greater emphasis on walking, cycling, public transport and urban realm will positively impact these factors. The delivery of Healthy Streets and Vision Zero principles will enable many of these improvements.	+	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
	distinctiveness, reducing the need to travel by motorised transport.	Will it improve the use of the urban public realm by improving its attractiveness and access?	Greater emphasis on walking, cycling, public transport and urban realm will positively impact these factors. The delivery of Healthy Streets and Vision Zero principles will enable many of these improvements.	++	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Changes to services and modal shift to more active travel will not lead to physical changes to protect London from climate change.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Changes to services and modal shift to more active travel will not lead to physical changes to protect London from climate change.	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Changes to services and modal shift to more active travel will not lead to physical changes to protect London from climate change.	0	None required
		Will it improve access to services during severe weather events?	Changes to services will improve access, though no difference during severe weather. .	0	None required
		Will it reduce exposure to heat during heatwaves?	Changes to services will improve access, though no difference during heatwaves	0	Not required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it enable those vulnerable during severe weather events to recover?	Not applicable	0	Not required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles is not likely to be sufficiently great to give a significant reduction in GHG emissions in addition to that due to changes in vehicle technology though will enable an increase in active travel supporting mode shift and associated emissions reduction.	+	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles is not likely to be sufficiently great to give a significant reduction in GHG emissions in addition to that due to changes in vehicle technology though will enable an increase in active travel supporting mode shift and associated emissions reduction.	+	None required
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and	Will it reduce the demand and need for energy, whilst not leading to overheating?	Not applicable	+	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
	existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles should lead to greater energy efficiency in transport	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	This is dependent on the energy procurement policies of London Overground (LO) and other train operating companies (TOCs)	?	Encourage LO and TOCs to procure greater proportion of energy from renewable sources for traction
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	This is dependent on the energy procurement policies of London Overground (LO) and other train operating companies (TOCs)	?	Encourage LO and TOCs to procure greater proportion of energy from renewable sources for traction
		Will it provide infrastructure to make a better use of renewable energy sources?	This is dependent on the energy procurement policies of London Overground (LO) and other train operating companies (TOCs)	?	Encourage LO and TOCs to procure greater proportion of energy from renewable sources for traction
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	No direct effect	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Greater emphasis on walking, cycling and public transport will increase accessibility for these groups. The delivery of Healthy Streets and Vision Zero principles will enable many of these improvements.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Greater emphasis on walking, cycling and public transport will support this. The delivery of Healthy Streets and Vision Zero principles will enable or support these improvements.	+	None required
		Will it improve the wider historic environment and sense of place?	Greater emphasis on walking, cycling and public transport will support this. The delivery of Healthy Streets and Vision Zero principles will enable or support these improvements.	+	None required
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Greater emphasis on walking, cycling and public transport will support this and may enhance accessibility to the historic environment. The delivery of Healthy Streets and Vision Zero principles will enable or support these improvements.	+	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Greater emphasis on walking, cycling and public transport will support this. The delivery of Healthy Streets and Vision Zero principles will enable many of these improvements.	+	None required
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	Greater emphasis on walking, cycling and public transport will directly support this as will the delivery of Healthy Streets and Vision Zero principles.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles should provide a modest contribution to this.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles should provide a modest contribution to this..	+	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	No direct effects.	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to greenspaces for recreational and health benefits?	Greater emphasis on walking, cycling and public transport will lead to improved accessibility and more active travel including to or via green spaces. The delivery of Healthy Streets and Vision Zero principles will support these improvements.	+	None required
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	The promotion of healthier lifestyles and Healthy Streets and Vision Zero principles should provide a small contribution to this.	+	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	No direct effects	0	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	No direct effects.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	No direct effects.	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
			No direct effects.	0	None required
			No direct effects.	0	None required
			No direct effects.	0	None required
			No direct effects.	0	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Greater emphasis on walking, cycling and public transport will support this and Vision Zero principles will support this.	+	None required
		Will reduce levels of noise generated?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
		Will it reduce inequalities in exposure to ambient noise?	Mode shift is unlikely to be sufficient to reduce noise levels.	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
		Will it reduce night time noise in residential areas?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	Greater emphasis on walking, cycling and public transport will support this through increased "natural surveillance".	+	None required

5.4.3 Matrix 2: LIP Objective D

Table 5.6: SEA Matrix 2 LIP Objective D: Support more sustainable travel to school, workplaces and other destinations

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	The reduction of car trips to schools, new development travel plans and car club provision will help reduce growth in emissions.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift is not likely to be sufficiently great to give a significant improvement in air quality	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	The focus on schools and new developments are likely to have positive impacts on communities vulnerable to poor air quality	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Mode shift will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Mode shift is not likely to be sufficiently great to reduce number of people exposed to poor air quality in addition to that due to changes in vehicle technology.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	The focus on schools and new developments are likely to have positive impacts on communities vulnerable to poor air quality	+	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Improving school travel plans, school street proposals, travel plans for new developments, reviewing parking provision is likely to have positive impacts on character and liveability including removing barriers to use.	+	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Improving school travel plans, school street proposals, travel plans for new developments are likely to have positive impacts on public realm access and attractiveness. Parking controls will enable many of these improvements and improve access.	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Proposed measures will not lead to physical changes/ adaptation to climate change.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Proposed measures will not lead to physical changes/ adaptation to climate change.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	The focus around active travel and schools is likely to have health benefits for vulnerable groups.	+	None required
		Will it improve access to services during severe weather events?	Proposed measures will not have a bearing on access to services during severe weather events.	0	None required
		Will it reduce exposure to heat during heatwaves?	Not applicable	0	None required
		Will it enable those vulnerable during severe weather events to recover?	Not applicable	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	Mode shift is not likely to be sufficiently large scale to give a notable reduction in GHG emissions in addition to that due to result from changes in vehicle technology.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Mode shift is not likely to be sufficiently large scale to give a significant reduction in GHG emissions in addition to that due to result from changes in vehicle technology, nor address associated health inequalities.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	Mode shift should lead to greater energy efficiency.	+	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Mode shift and the focus around schools should lead to greater energy efficiency.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	The focus around electric vehicles will have positive impacts on the purchase of renewable energy.	+	None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	The focus around electric vehicles will have positive impacts, but the extent and scale of measures under this objective is small.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	The focus around electric vehicles will have positive impacts, but the extent and scale of measures under this objective is modest.	+	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	No direct effect	0	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Greater emphasis on walking, cycling and public transport will increase accessibility for these groups.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Greater emphasis on walking, cycling and public transport will provide nominal strategic support for this - the extent and scale of support is low.	0	None required
		Will it improve the wider historic environment and sense of place?	Greater emphasis on walking, cycling and public transport will provide nominal strategic support for this - the extent and scale of support is low.	0	None required
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Greater emphasis on walking, cycling and public transport will enhance accessibility to the historic environment.	+	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Greater emphasis on walking, cycling and public transport will support inclusive design associated with the historic environment..	+	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	This objective has a direct focus on active modes of transport and will have positive impacts on this	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Greater emphasis on active travel will support this.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	The focus on schools and new developments will have positive impacts on communities vulnerable to poor air quality.	++	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	The scale of interventions is unlikely to have direct impacts on flooding, heat and drought risk	0	None required
		Will it improve access to greenspaces for recreational and health benefits?	Greater emphasis on walking, cycling and public transport will lead to improved accessibility and more active travel including to green spaces	+	None required
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	The target of the objective is likely to have positive effects, however the scale is unlikely to have direct positive impacts on this topic	0	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	No direct effects.	0	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	No direct effect.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	No direct effect.	0	None required
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	No direct effect.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	No direct effect.	0	None required
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Measures are likely to support access to green space and enhance mental health benefits through active travel.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it result in a greener public realm that can enhance mental health benefits?	The promotion of active and sustainable travel plans for schhols and new developments is likely to have positive effects for this objective	+	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Greater emphasis on sustainable and active travel for schools and new developments (walking, cycling and public transport) will support this.	+	None required
		Will reduce levels of noise generated?	Greater emphasis on sustainable and active travel for schools and new developments (walking, cycling and public transport) will support this.	+	None required
		Will it reduce inequalities in exposure to ambient noise?	Greater emphasis on sustainable and active travel for schools and new developments (walking, cycling and public transport) will support this.	+	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Greater emphasis on sustainable and active travel for schools and new developments (walking, cycling and public transport) will support this.	+	None required
		Will it reduce night time noise in residential areas?	Mode shift is unlikely to be sufficient to reduce noise levels.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective D: Support more sustainable travel to school, workplaces and other destinations		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	No direct effect.	0	None required

5.4.4 Matrix 3: LIP Objective E

Table 5.7: SEA Matrix 3 LIP Objective E: Improve air quality in Barnet and reduce exposure to pollution, especially for children.

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	Improvements to EV infrastructure and ULEZ extension will support emissions reduction.	+	None required
		Will it help to achieve national and international standards for air quality?	Improvements to EV infrastructure and ULEZ extension will support emissions reduction and help achieve air quality standards.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Improvements to EV infrastructure and ULEZ extension will reduce number of people exposed to poor air quality.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Improvements to EV infrastructure and ULEZ extension will support emissions reduction which will positively support the health of the public.	+	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Improvements to EV infrastructure, plus ULEZ extension and increased tree planting will support reduction in premature deaths caused by poor air quality.	+	None required
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	Improvements to EV infrastructure, ULEZ extension and measures from air quality audits at schools, plus tree planting will support improvements in air quality including in areas which may have high concentrations of vulnerable people.	+	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Measures from air quality audits at schools plus tree planting and car free days will support streetscape use and liveability.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
	sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it improve the use of the urban public realm by improving its attractiveness and access?	Measures from air quality audits at schools plus tree planting and car free days will support attractiveness and access to public realm..	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Greening and tree planting supports climate change adaption. In general will depends on design of healthy streets, liveable neighbourhoods and public realm improvements.	?	Ensure greening, tree planting and air quality intervention measures incorporate climate change adaptation and resilience in design.
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Greening and tree planting supports climate change adaption. In general, will depends on design of healthy streets, liveable neighbourhoods and public realm improvements	?	Ensure greening, tree planting and air quality intervention measures incorporate climate change adaptation and resilience in design.
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Measures around schools, tree planting, car free days etc will help to reduce health inequalities and impacts on vulnerable groups.	+	Focus measures on key streetscapes and townscapes to maximise benefits to Barnet population.
		Will it improve access to services during severe weather events?	Measures unlikely to support improve access to services during severe weather.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce exposure to heat during heatwaves?	Greening and tree planting will reduce heat exposure during heatwaves	+	Ensure greening, tree planting and air quality intervention measures incorporate climate change adaptation and resilience in design
		Will it enable those vulnerable during severe weather events to recover?	Measures unlikely to support recovery of those vulnerable during severe weather.	0	None required.
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	Improvements to EV infrastructure, plus ULEZ extension will help tackle climate change, reduce GHG emissions and support moving towards a zero carbon London by 2050.	+	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Measures around schools, tree planting, car free days etc will help to reduce health inequalities and impacts on vulnerable groups.	+	Focus measures on key streetscapes and townscapes to maximise benefits to Barnet population.
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient	Will it reduce the demand and need for energy, whilst not leading to overheating?	Improvements to EV infrastructure, plus ULEZ extension will support energy efficiency and energy use effectiveness and support a resilient and energy system.	+	None required.

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
	smart and affordable energy system	Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Improvements to EV infrastructure, plus ULEZ extension will promote and improve energy efficiency in transport.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Improvements to EV infrastructure, plus ULEZ extension may increase the proportion of energy from renewable and sustainable sources depending on electricity supply.	?	Work with TfL and EV infrastructure providers to secure renewable and sustainable sources for energy/ electricity supply.
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Improvements to EV infrastructure, plus ULEZ extension will encourage uptake of green/cleaner fuels and may encourage uptake of renewables across transport providers and private cars.	+	Work with TfL and EV infrastructure providers to ensure green/cleaner fuels and renewable energy provision.
		Will it provide infrastructure to make a better use of renewable energy sources?	Improvements to EV infrastructure, plus ULEZ extension may make better use of renewables.	?	Work with TfL and EV infrastructure providers to ensure use of renewable energy provision.
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Measures unlikely to reduce health inequalities and impacts of fuel poverty on vulnerable communities and at risk groups	0	None required

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Improvements to EV infrastructure and ULEZ extension will help address deficiencies of access to facilities.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Improvements to EV infrastructure and ULEZ extension will support emissions reduction which will be beneficial to fabric of historic buildings helping to protect these.	+	None required.
		Will it improve the wider historic environment and sense of place?	Improvements to EV infrastructure and ULEZ extension will support emissions reduction which will be beneficial to fabric of historic buildings helping to protect these and the wider historic environment marginally improving the sense of place.	+	None required
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Whilst improvements to EV infrastructure and ULEZ extension will support emissions reduction which will help to protect the historic environment this is unlikely to impact on barriers to use from vulnerable groups.	0	None required.

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Air quality measures, greening and tree planting could potentially support inclusive design and management depending on design.	?	Ensure greening, tree planting and air quality intervention measures incorporate inclusive design.
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	Air quality intervention measures, car free days and greening and tree planting will all support active travel.	+	None required.
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Improvements to EV infrastructure, ULEZ extension and measures from air quality audits at schools, plus tree planting will support reductions in health inequalities.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Improvements to EV infrastructure, ULEZ extension and measures from air quality audits at schools, plus tree planting will reduce at risk and vulnerable groups' exposure to poor air quality.	+	None required.
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	Greening and tree planting will help reduce flooding, heat and drought risk including for at risk and vulnerable communities.	+	None required.

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to greenspaces for recreational and health benefits?	Greening and tree planting will improve access to green spaces.	+	Ensure recreational and health benefits of greening and tree planting for air quality benefits are considered in design.
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	Improvements to EV infrastructure and ULEZ extension, plus greening, tree planting and car free days will support reduction in number of people dying prematurely from poor air quality and extreme heat.	+	None required.
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	Greening and tree planting will support enhancement of ecosystem services.	+	Ensure ecosystem services benefits of greening and tree planting for air quality benefits are considered in design
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	Measures likely to have marginal impact on protection and improvement of quality and extent of sites of importance for nature conservation.	0	Ensure wildlife habitat enhancements benefits of greening and tree planting for air quality improvements are considered in design e.g. bat boxes, insect hotels.

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	Measures likely to provide modest opportunities for enhancement of natural environment or wildlife habitat restoration.	0	Ensure wildlife habitat enhancements benefits of greening and tree planting for air quality improvements are considered in design e.g. bat boxes, insect hotels.
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	Measures unlikely to provide opportunities for enhancement of biodiversity of water bodies	0	None required.
		Will it increase the planting of green roofs, green walls and soft landscaping?	Greening and tree planting will directly increase soft landscaping and potentially green walls and roofs.	+	Ensure greening and tree planting for air quality improvements give maximum consideration to green roofs, green walls and soft landscaping.
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Greening and tree planting will support access to green space to enhance mental and physical health benefits.	+	Ensure greening and tree planting for air quality improvements give maximum consideration to linking green infrastructure and green spaces.
		Will it result in a greener public realm that can enhance mental health benefits?	Greening and tree planting will support a greener public realm which can enhance mental health benefits.	+	None required.

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Improvements to EV infrastructure and ULEZ extension, together with car free days and greening and tree planting will support improvements to quiet and tranquil places for all.	+	None required.
		Will reduce levels of noise generated?	Improvements to EV infrastructure and ULEZ extension, together with car free days and greening and tree planting will support reduction in noise.	+	None required.
		Will it reduce inequalities in exposure to ambient noise?	Improvements to EV infrastructure and ULEZ extension, together with car free days and greening and tree planting will reduce inequalities in exposure to ambient noise.	+	None required.
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Improvements to EV infrastructure and ULEZ extension, together with car free days and greening and tree planting will help protect vulnerable groups at risk from noise. .	+	None required.
		Will it reduce night time noise in residential areas?	Improvements to EV infrastructure and ULEZ extension, together with car free days and greening and tree planting will help reduce night time noise in residential areas.	+	None required.

Topic	Objective	Assessment guide questions	LIP Objective E: Improving air quality		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Improvements to EV infrastructure and ULEZ extension, together with car free days and greening and tree planting will help reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects.	+	None required.
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	Measures likely to provide modest opportunities for design and management of green spaces that helps to reduce crime and anti-social behaviour	0	Ensure air quality measures, greening and tree planting incorporate 'safer by design' principles.

5.4.5 Matrix 4: LIP Objectives F and G

Table 5.8: SEA Matrix 4 LIP Objectives F: New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops.

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants,	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	Reduction in traffic through improving public transport routes will reduce pollutant emissions	+	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
	particularly in areas of poorest air quality, and reduce exposure	Will it help to achieve national and international standards for air quality?	The scale of plans are unlikely to be sufficiently great to give a significant improvement in air quality in addition to that due to changes in vehicle technology.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	The reduction of pollutants through reduced cars on the road and increased public transport patronage is likely to improve local air quality.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Mode shift will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Mode shift is not likely to be sufficiently great to reduce number of people exposed to poor air quality.	0	None required
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	The improvement in the public transport network and consequent reductions in cars on the road is likely to improve air quality in the area, including areas affecting vulnerable people.	+	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	The reductions of cars on the road due to improved public transport is likely to support the enhancement of streetscapes and townscapes.	+	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
	sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it improve the use of the urban public realm by improving its attractiveness and access?	Improved public transport supports increased use of public realm..	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Enhancements to the public transport network will not directly support protection from climate change impacts..	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Enhancements to the public transport network will not directly help London function during extreme weather events..	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	The focus around step-free facilities and access to public transport will improve access to the public transport network for vulnerable groups. .	++	None required
		Will it improve access to services during severe weather events?	Enhancements to the public transport network will not directly improve access to services during severe weather events..	0	None required
		Will it reduce exposure to heat during heatwaves?	Not applicable	0	None required
		Will it enable those vulnerable during severe weather events to recover?	Not applicable	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	Mode shift is not likely to be sufficiently great to give a significant reduction in GHG emissions.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Mode shift is not likely to be sufficiently great to give a significant reduction in GHG emissions in addition to that due to changes in vehicle technology.	0	None required
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	Mode shift should lead to greater energy efficiency.	+	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Mode shift and the focus around public transport should lead to greater energy efficiency.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	The focus around public transport improvements including the bus network should have positive impacts on the purchase of renewable energy.	+	Encourage TfL to procure greater proportion of energy from renewable sources.
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	The focus around public transport improvements will have positive impacts, though will not impact on all transport providers.	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it provide infrastructure to make a better use of renewable energy sources?	The objectives will improve transport infrastructure but is not specifically focused on improving renewable energy sources infrastructure	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	No direct effect	0	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Greater emphasis on public transport will increase accessibility for these groups.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Greater emphasis on public transport will support this, but is unlikely to have a significant positive impact.	0	None required
		Will it improve the wider historic environment and sense of place?	Greater emphasis on public transport will support this, but is unlikely to have a significant positive impact	0	None required
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Greater emphasis on public transport will support this, but is unlikely to have a significant positive impact	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Greater emphasis on walking, cycling and public transport will support this, but not provide significant positive impacts.	0	None required
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	This objective has a direct focus on public transport and will have positive impacts on this.	++	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Greater emphasis on public transport and accessibility to public transport is likely to support this.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	These objectives will broadly support this area, but not to a level that would likely produce significant positive effects.	0	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	The scale and extent of interventions are unlikely to have direct impacts on flooding, heat and drought risk.	0	None required
		Will it improve access to greenspaces for recreational and health benefits?	Greater emphasis on public transport and accessible public transport will lead to improved accessibility to greenspace.	+	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	The target of the objective is likely to broadly support this, however the scale is unlikely to have direct positive impacts on this topic	0	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	No direct effects.	0	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	No direct effect.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	No direct effect.	0	None required
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	No direct effect.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	No direct effect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Objective is likely to support access to green space which supports mental health benefits.	+	None required
		Will it result in a greener public realm that can enhance mental health benefits?	No direct effect.	0	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Greater emphasis public transport and accessibility to public transport will support this.	+	None required
		Will reduce levels of noise generated?	Increased public transport provision will support this.	+	None required
		Will it reduce inequalities in exposure to ambient noise?	Increased public transport provision will support this.	+	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Although the accessibility aspect targets vulnerable groups, it is unlikely that this objective will directly support reductions in noise pollution.	0	None required
		Will it reduce night time noise in residential areas?	Improved public transport access at night may reduce night time noise though this is likely to be marginal.	0	None required

Topic	Objective	Assessment guide questions	LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	No direct effect.	0	None required

5.4.6 Matrix 5: LIP Objective H

Table 5.9: SEA Matrix 5 LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	The reduction of car trips and promotion of active travel will help reduce growth in emissions.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift is not likely to be of a sufficient scale to give a significant improvement in air quality.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	The focus on opportunity areas are likely to have positive impacts on communities vulnerable to poor air quality.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Development of opportunity areas will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Development of opportunity areas is not likely to be of a sufficient scale to reduce the number of people exposed to poor air quality in addition to that due to changes in vehicle technology.	0	None required
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	The focus on opportunity areas is likely to have positive impacts on communities vulnerable to poor air quality	+	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Regeneration and growth across opportunity areas is likely to have positive impacts on character and livability including removing barriers.	++	None required

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
	sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it improve the use of the urban public realm by improving its attractiveness and access?	Regeneration and growth across opportunity areas is likely to have positive impacts on public realm access and attractiveness. Parking controls will enable many of these improvements and improve access.	++	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Setting borough requirements relating to sustainable design, climate change resilience and adaptation will support this.	++	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Regeneration proposals including ensuring climate adapted design will support London's function during extreme weather	+	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	The focus around active travel and schools is likely to have health benefits for vulnerable groups.	+	None required
		Will it improve access to services during severe weather events?	Regeneration proposals including ensuring climate adapted design will support access to services during severe weather	+	None required
		Will it reduce exposure to heat during heatwaves?	Implementation of Sustainable Design and Construction SPD may support reduced exposure to heat during heatwaves	0	Ensure Sustainable Design and Construction SPD includes requirements to address heat exposure.

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it enable those vulnerable during severe weather events to recover?	Not directly applicable	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	Mode shift is not likely to be sufficiently large scale to give a significant reduction in GHG emissions in addition to that due to changes in vehicle technology.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Mode shift is not likely to be sufficiently large scale to contribute to reduction in health inequalities and impacts on more vulnerable communities. .	0	None required
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	Mode shift should support greater energy efficiency.	+	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Mode shift should support greater energy efficiency.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Proposed measures will not have any discernable impact on the purchase of renewable energy.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Proposed measures will not have any discernable impact on green/cleaner fuels and renewable energy provision.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Proposed measures will not have contribute directly to making better use of renewable energy sources.	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	No direct effect	0	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Greater emphasis on walking, cycling and public transport will increase accessibility for these groups.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Greater emphasis on public transport, walking and cycling will support this, but is unlikely to have a significant positive impact..	0	None required
		Will it improve the wider historic environment and sense of place?	Greater emphasis on public transport, walking and cycling will support this, but is unlikely to have a significant positive impact	0	None required

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Greater emphasis on public transport, walking and cycling will provide some support for this.	+	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Greater emphasis on public transport, walking and cycling plus regeneration proposals will support this..	+	None required
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	This objective has a direct focus on active modes of transport and will have positive impacts on this	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Greater emphasis on active travel is likely to support this.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	The focus on regeneration and new developments are likely to have positive impacts on communities vulnerable to poor air quality	+	None required

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	Sustainable Design and Construction including climate change adaptation will positively support reductions in flooding, heat and drought.	+	None required
		Will it improve access to greenspaces for recreational and health benefits?	Measures will not directly support access to green spaces.	0	None required
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	The target of the objective is likely to have broadly positive effects, however the scale is unlikely to have direct positive impacts on this.	0	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	Green infrastructure SPD will support this.	+	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	Green infrastructure SPD will support this.	+	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	Green infrastructure SPD will support this.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	Green infrastructure SPD will support this and SUDS requirements can support this.	0	Ensure SUDS requirements support this.
		Will it increase the planting of green roofs, green walls and soft landscaping?	Green infrastructure SPD will support this.	+	None required
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Objective is likely to support access to green space and enhance mental health benefits through active travel.	+	None required
		Will it result in a greener public realm that can enhance mental health benefits?	The promotion of active travel and new developments is likely to have positive effects for this objective	+	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Greater emphasis on sustainable and active travel for new developments (walking, cycling and public transport) will support this.	+	None required
		Will reduce levels of noise generated?	Greater emphasis on sustainable and active travel for new developments (walking, cycling and public transport) will support this.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective H: Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce inequalities in exposure to ambient noise?	Greater emphasis on sustainable and active travel for new developments (walking, cycling and public transport) will support this.	+	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Greater emphasis on sustainable and active travel for schools and new developments (walking, cycling and public transport) will support this.	+	None required
		Will it reduce night time noise in residential areas?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	No direct effect.	0	None required

5.4.7 Matrix 6: LIP Long-term proposals

Table 5.10: SEA Matrix 6 LIP long term proposals

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	Measures are unlikely to contribute to significant reductions in emissions of pollutants in addition to effects of changes in vehicle technology and other MTS policies.	0	None required
		Will it help to achieve national and international standards for air quality?	Measures are unlikely to contribute to significant reductions in emissions of pollutants in addition to effects of changes in vehicle technology and other MTS policies.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Measures are unlikely to contribute to significant reductions in poor air quality in addition to effects of changes in vehicle technology and other MTS policies.	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	No negative effects from these measures.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Measures are unlikely to contribute to significant reductions in emissions of pollutants in addition to effects of changes in vehicle technology and other MTS policies.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	Measures are unlikely to contribute to significant improvements in air quality in addition to effects of changes in vehicle technology and other MTS policies..	0	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Public realm improvements at key locations and across a wider network will improve streetscapes and townscapes.	++	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Public realm improvements at key locations and across a wider network will improve attractiveness and access.	++	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Dependent on the design of specific schemes delivered.	?	Encourage design of measures to include climate adaption, including the introduction of SUDs through transport schemes.
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Measures are unlikely to have any direct effect in this respect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to services during severe weather events?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it reduce exposure to heat during heatwaves?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it enable those vulnerable during severe weather events to recover?	Measures are unlikely to have any direct effect in this respect.	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	Measures will contribute to reduction of GHG through mode shift, although not to a significant extent.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Measures are unlikely to have any direct effect in this respect.	0	None required
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	Measures are unlikely to contribute to significant reductions in demand for energy in addition to effects of changes in vehicle technology and other MTS policies..	+	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Measures will support more energy efficiency, although not to a significant extent.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Dependent on the design of specific schemes delivered.	?	Encourage design of measures to include provision for renewable energy.
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Measures are unlikely to have any direct effect in this respect.	0	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Improvements in accessibility will be provided.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Dependent on the location of schemes delivered.	?	None required.

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
	historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it improve the wider historic environment and sense of place?	Dependent on the location of schemes delivered.	?	None required.
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Dependent on the location of schemes delivered.	?	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Dependent on the location of schemes brought forward.	?	None required.
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	Liveable neighbourhoods, town centre improvements/ pedestrianisation, support for active travel and enhanced urban realm will support mental and physical wellbeing.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Poor air quality unlikely to be reduced significantly in addition to effects of changes in vehicle technologies and other MTS policies.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it improve access to greenspaces for recreational and health benefits?	Dependent on the location of schemes delivered.	?	None required
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	Measures are unlikely to have any direct effect in this respect.	0	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	Measures are unlikely to have any direct effect in this respect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	Dependent on the design of specific schemes delivered.	?	Encourage design of measures to include green infrastructure.
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Dependent on the location of specific schemes delivered.	?	None required
		Will it result in a greener public realm that can enhance mental health benefits?	Measures will support this.	+	None required.
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Liveable neighbourhoods, town centre improvements/ pedestrianisation, support for active travel and enhanced urban realm will support noise reduction.	+	None required
		Will reduce levels of noise generated?	Liveable neighbourhoods, town centre improvements/ pedestrianisation, support for active travel and enhanced urban realm will support noise reduction..	+	None required

Topic	Objective	Assessment guide questions	LIP Objective: Long term proposals up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce inequalities in exposure to ambient noise?	Liveable neighbourhoods, town centre improvements/ pedestrianisation, support for active travel and enhanced urban realm will support noise reduction including inequalities in ambient noise exposure	+	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures will not specifically protect vulnerable groups at risk from impacts of noise pollution.	0	None required
		Will it reduce night time noise in residential areas?	Measures will not specifically reduce night time noise.	0	None required
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Measures will not specifically reduce number of people exposed to high levels of noise.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures will not specifically protect vulnerable groups at risk from noise pollution.	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	Dependent on the design of specific measures.	?	Encourage designs to include measures for increased electronic and natural surveillance. Measures focused on areas with highest levels of crime and anti-social behaviour.

5.4.8 Matrix 7: LIP Short-term proposals

Table 5.11: SEA Matrix 7 LIP short term proposals

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	Reductions in pollutant emissions will result from measures.	+	None required
		Will it help to achieve national and international standards for air quality?	Reductions in pollutant emissions are unlikely to help achieve air quality standards in the short term.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Numbers of people exposed to poor air quality are unlikely to reduce in the short term.	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	Air quality will improve, although not significantly in the short term.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Number of premature deaths unlikely to reduce in the short term.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	Numbers of people exposed to poor air quality are unlikely to reduce in the short term.	0	Measures focused on areas near schools, outdoor play areas, care homes and hospitals.
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Measures will protect and enhance character, integrity and liveability of areas where implemented.	+	Measures focused on key streetscapes and townscapes.
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Measures will improve attractiveness and access to areas where implemented.	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	GHG emissions unlikely to be significantly reduced in the short term.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	No direct effects on these factors.	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Health inequalities unlikely to be reduced in the short term.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to services during severe weather events?	Unlikely to have any direct impact in this respect.	0	None required
		Will it reduce exposure to heat during heatwaves?	Unlikely to have any direct impact in this respect.	0	None required
		Will it enable those vulnerable during severe weather events to recover?	Unlikely to have any direct impact in this respect.	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	GHG emissions unlikely to reduce significantly in the short term.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Unlikely to have any direct impact in this respect.	0	None required
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	Unlikely to have any direct impact in this respect.	0	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Unlikely to have any direct impact in this respect in the short term.	0	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Unlikely to have any direct impact in this respect in the short term.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Unlikely to have any direct impact in this respect in the short term.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Unlikely to have any direct impact in this respect in the short term.	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Unlikely to have any direct impact in this respect in the short term.	0	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Improvements in accessibility will be provided.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Dependent on the location of schemes brought forward.	?	None required
		Will it improve the wider historic environment and sense of place?	Dependent on the location of schemes brought forward.	?	None required

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
	in relation to their significance and their settings.	Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Dependent on the location of schemes brought forward.	?	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Dependent on the location of schemes brought forward.	?	None required.
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	Active modes encouraged, and emissions reduced, but not significantly in the short term.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Unlikely to have direct impacts on this in the short term.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Unlikely to have direct impacts on this in the short term.	+	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	Unlikely to have direct impacts on this in the short term.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to greenspaces for recreational and health benefits?	Depends on the location of schemes delivered.	?	Measures focused on areas near to greenspace.
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	Unlikely to have direct impacts on this in the short term.	+	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	Measures will help deliver these, although not to a very significant extent in the short term.	+	None required.
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	Unlikely to have any direct impacts in this respect.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	Unlikely to have any direct impacts in this respect.	0	None required
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	Unlikely to have any direct impacts in this respect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it increase the planting of green roofs, green walls and soft landscaping?	Unlikely to have any direct impacts in this respect.	0	None required
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Dependent on the design of specific schemes.	0	Encourage design of measures to include green infrastructure.
		Will it result in a greener public realm that can enhance mental health benefits?	Dependent on the location of specific schemes delivered.	?	Ensure measures actively seek to incorporate greening and planting.
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Dependent on the design of specific schemes.	0	None required. .
		Will reduce levels of noise generated?	Dependent on the location of specific schemes delivered.	?	None required.
		Will it reduce inequalities in exposure to ambient noise?	Unlikely to reduce noise levels significantly in the short term.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Unlikely to reduce noise levels significantly in the short term.	0	None required
		Will it reduce night time noise in residential areas?	Unlikely to reduce noise levels significantly in the short term.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective: LIP 3-year indicative programme		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Unlikely to reduce noise levels significantly in the short term.	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	Measures will support these factors.	+	None required.

5.5 Monitoring

The LIP does not currently include specific proposals for environmental monitoring. However, in relation to the effects identified in the SEA, Temple and Steer recommend that key indicators from the set compiled by the London Sustainable Development Commission (LSDC) on Quality of Life issues be used by Barnet Council to monitor the environmental effects of the final Strategy and LIP. The LSDC indicator set is designed to gauge how London is performing against key measures of a sustainable city that supports and enhances quality of life. It has been specifically designed to be used by policy-makers to monitor trends and to inform future policy-making.

The recommended indicators for monitoring set out in **Table 5.12** following:

Table 5.12: Recommended indicators for monitoring the SEA for the draft Transport Strategy and LIP

No.	Indicator	Measure
	Environment	
1, 2	CO ₂ emissions	Total CO ₂ emissions in London
4	Oxides of nitrogen emissions	Tonnes of NO _x emitted in London
5	Particulate emissions	Tonnes of PM _{2.5} and PM ₁₀ emitted in London
8b	Flood risk (surface water)	Properties at risk of surface water flooding
	Social	
10	Healthy Life Expectancy	Healthy life expectancy at birth for men and women
N/A ¹⁹	Child Obesity	Percentage of overweight and obese children in Reception Year (aged 4-5) and Year 6 (aged 10-11)
15	Happiness	Self-reported levels of happiness
16	Satisfaction with London	% of Londoners satisfied with the capital as a place to live
18	Social integration	% of people who think their local area is a place where people from different backgrounds get on well together
	Economic	
19	Gross Value Added	Gross Value Added (GVA) per head (£) in London
20	Employment	Employment rate in London
24	Income inequality	Disposable income differentials in London
25	Child poverty	Children living in households below 60 per cent median income
27	London Living Wage	% of people earning less than London Living Wage (LLW) per hour in London

¹⁹ Department of Health statistics on prevalence of childhood obesity available at www.data.london.uk.

6.0 Next Steps

6.1 Development of the LIP

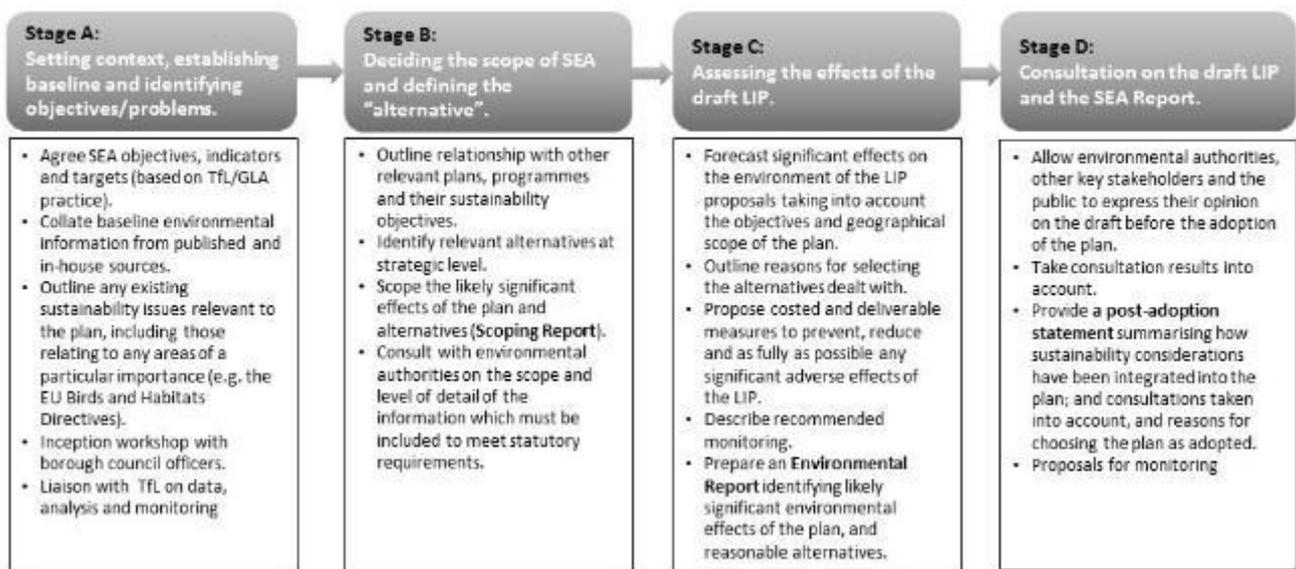
A draft of the LIP was submitted to Transport for London in November 2018 for comment. Barnet Council is also presently conducting a public consultation exercise on the LIP proposals.

Taking account of the comments received from TfL and the outcomes of the consultation, together with the analysis presented in this Environmental Report, Barnet Council will then make any revisions to the LIP that may be necessary, and a final version will be approved in **January 2019**. The LIP will come into operation in April 2019.

6.2 Remaining Stages in the SEA Process

The stages that Temple and Steer are following in the SEA process are shown in **Figure 6.1** below.

Figure 6.1: Stages in the SEA Process



Adapted from: ODPM (2005) - **A Practical Guide to the Strategic Environmental Assessment Directive**

This Environmental Report represents the output from Stage C of the process illustrated above.

During Stage D, Temple and Steer will prepare the Post-Adoption Statement on behalf of Barnet Council, who will publish this in turn. The Post-Adoption Statement will clearly summarise the way that consultation has influenced the assessment process, demonstrate how feedback has been considered, identify changes that have been made and the reasons for choosing the preferred policies and options. We will ensure this is clearly and sensitively set out, avoiding potential difficulties with interested stakeholders.

In line with the requirements of the SEA Regulations, the Borough Council will monitor the effects of the LIP. This will feed into any future LIP progress reporting.