

Report

15th March 2019



TEMPLE

LEADERS IN ENVIRONMENT,
PLANNING & SUSTAINABILITY.

In association with **steer**

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



Document version control

Version	Date	Author	Reviewed by	Reviewed and approved by
0.1	15 th March 2019	Jenny Stafford Monica Laucas Honor Puciato	David Sutanto	Chris Ferrary

Report for: **London Borough of Waltham Forest**

Main contributors: **Chris Ferrary**
Jenny Stafford
Monica Laucas
Honor Puciato

Copy to: **Neil Bullen**
David Wills

This report has been prepared by Temple Group Ltd and Steer with all reasonable care and diligence within the terms of the contract with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the contract. We accept no responsibility to third parties to whom this report, or any part, thereof is made available. Any such party relies upon the report at their own risk.

Contents

1.0	Non-Technical Summary	i
1.1	Introduction	i
1.2	Summary of the LIP	i
1.3	Approach to the SEA	ii
1.4	Outcomes of the SEA	ii
1.5	Monitoring	iii
1.6	Next Steps	iii
2.0	Introduction	1
2.1	About the Environmental Report	1
2.2	Overview of the Local Implementation Plan (LIP)	1
2.3	Compliance with the SEA Regulations	2
2.4	Report Structure	3
3.0	Context and Scope of the LIP	4
3.1	Introduction	4
3.2	Policy Context	4
3.3	Summary of the LIP	5
3.4	Defining the assessment area	6
3.5	Timeframe for the Plan	7
3.6	Other policies, Plans, Programmes and Sustainability Objectives	7
4.0	Baseline Environmental Conditions	10
4.1	Air Quality	10
4.2	Attractive neighbourhoods	11
4.3	Climate change mitigation and adaptation	13
4.4	Energy use and supply	14
4.5	Fairness and inclusivity	15
4.6	Flood risk	16
4.7	Geology and soils	16
4.8	Historic environment	17
4.9	Materials and waste	18
4.10	Mental and physical wellbeing	18
4.11	Natural capital and natural environment	19

4.12	Noise and vibration	20
4.13	Safety and security	21
4.14	Water resources and quality	21
5.0	SEA Objectives and Framework	22
5.1	Objectives	22
5.2	Alternatives	23
5.3	Habitats Regulations Assessment	23
5.4	SEA Framework Matrices	23
5.5	Monitoring	80
6.0	Next Steps	81
6.1	Development of the LIP	81
6.2	Remaining Stages in the SEA Process	81

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 Waltham Forest'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

Waltham Forest Council has identified the following five priority projects, which will be the focus of the LIP proposals:

- **Making Walthamstow Central a transport interchange for a major centre in London:** The LIP will provide safeguarding for a secondary access to the interchange and introduction of step-free access. Installation of third escalator will be examined, and a secondary entrance into Selborne Walk or Town Square will be provided, together with remodelling of bus station and changes to bus routes (see also below).
- **Redeveloping Leyton Underground Station to meeting growing demand:** This will include measures to increase capacity at the station and introduction of step free access.
- **A New Ruckholt Road Station to unlock the Leyton Growth Area:** Progressing proposals for a new Ruckholt Road station in the current vicinity of New Spitalfields Market and progressing the case for the Hall Farm Curve.
- **Station Gateways - Investment in Place-Making and Access for All:** Improving station access at Highams Park station, including step-free access and station enhancement and refurbishment of surroundings at St James Street and Wood Street on the London Rail Liverpool Street to Chingford line. Improvements to stations and surroundings at Leytonstone High Road and Leyton Midland Road on the London Rail Gospel Oak to Barking Line.
- **Planning a Smarter, Greener Bus Network:** Preparation of borough-wide bus strategy comprising a number of key projects including reconfiguration of bus routes servicing Walthamstow Central and St James St bus stations, new bus routes in the Leyton and Lea

Bridge regeneration area, improved bus routes in the north of the borough and better connections to the redevelopment area and stations at Blackhorse Lane.

Additionally, the Council has identified two wider workstreams that will be central to delivering the LIP, i.e.:

- Making Liveable Neighbourhoods for Everyone; and
- Culture Change: Shift to Sustainable Travel and Green Vehicles.

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 data pack 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 three European designated sites within 10km of Waltham Forest which fall under the Habitat Regulations, and four Sites of Special Scientific Interest (SSSI) located in the same area. 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

No significant adverse environmental effects will result from the implementation of the LIP in Waltham Forest. 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 objectives of the LIP under the stated outcomes are listed below.

Outcome 1: London’s streets will be healthy and more Londoners will travel actively. The objectives and associated measures will directly support improvements to and better use of cycling and walking infrastructure and active travel with associated physical and mental health benefits for residents as well as environment benefits.

Outcome 2: London’s streets will be safe and secure; Outcome 3: London’s streets will be used more efficiently and have less traffic on them and Outcome 4: London’s streets will be clean and green. The objectives and associated measures under these outcomes will directly support safer, cleaner and more liveable streets improving the borough’s environment and

supporting the creation of a healthier environment for residents. The measures will directly support healthier neighbourhoods and broadly support emissions reduction and associated air quality improvements.

Outcome 5: The public transport network will meet the needs of a growing London;
Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable.

The objectives and associated measures will support improvements to and greater use of public transport make this more accessible and inclusive and increasing its attractiveness bringing associated environmental benefits to the borough. They will also support the borough's growth and regeneration.

Long term interventions

The proposed long term interventions will see improved public transport for the borough as well as an increase in liveable neighbourhoods bringing environmental and health benefits for the borough:

1.5 Monitoring

The draft LIP does 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 Waltham Forest Council to monitor the environmental effects of the final LIP.

1.6 Next Steps

The LIP was submitted to Transport for London in November 2018 for comment. Waltham Forest Council then carried out 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, Waltham Forest 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 spring 2019.

Following this Waltham Forest 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 Waltham Forest'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 Waltham Forest's earlier in summer 2018. 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.
 - Green: London's streets will be clean and green.

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

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

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

- **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 Error! Reference source not found.**

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 3.6
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 Waltham Forest 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 is 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 Waltham Forest target is 78%.

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.

3.2.3 Waltham Forest Transport Strategy 2018

The Waltham Forest Economic Growth Strategy (2016)⁶ sets out the key aim for infrastructure as '*To ensure that growth supports the delivery of vital infrastructure and new facilities across the borough*'. A key priority action of this is to develop a Waltham Forest Transport Plan that will set out the Council's ambition for transport investment in the borough.

The Economic Growth Strategy also sets out two indicators for measures of success that are focused around transport infrastructure:

- Bus Service Reliability; and
- Percentage of trips made by bicycle.

Waltham Forest's Transport Infrastructure: Growth & investment Strategy⁷ states that for achieving sustainability regeneration and growth, access to a comprehensive, modern and future proofed transport network is key. The Council are keen to work collaboratively with partners including the Mayor of London, Transport for London and Network Rail to deliver a ten-year plan for a smart, sustainable investment in the borough's transport infrastructure, in order to unlock the borough's significant economic growth potential.

3.3 Summary of the LIP

Waltham Forest Council has identified the following five priority projects, which will be the focus of the LIP proposals:

- **Making Walthamstow Central a transport interchange for a major centre in London:** The LIP will provide safeguarding for a secondary access to the interchange and introduction of step-free access. Installation of third escalator will be examined, and a secondary entrance into Selborne Walk or Town Square will be provided, together with remodelling of bus station and changes to bus routes (see also below).
- **Redeveloping Leyton Underground Station to meeting growing demand:** This will include measures to increase capacity at the station and introduction of step free access.

⁶ https://www.walthamforest.gov.uk/sites/default/files/Economic_Growth_Strategy_Report_2016_20_0.pdf

⁷ <https://democracy.walthamforest.gov.uk/documents/s60599/appendix%20A%20-%20transport%20strategy%20050318.pdf>

- **A New Ruckholt Road Station to unlock the Leyton Growth Area:** Progressing proposals for a new Ruckholt Road station in the current vicinity of New Spitalfields Market and progressing the case for the Hall Farm Curve.
- **Station Gateways - Investment in Place-Making and Access for All:** Improving station access at Highams Park station, including step-free access and station enhancement and refurbishment of surroundings at St James Street and Wood Street on the London Rail Liverpool Street to Chingford line. Improvements to stations and surroundings at Leytonstone High Road and Leyton Midland Road on the London Rail Gospel Oak to Barking Line.
- **Planning a Smarter, Greener Bus Network:** Preparation of borough-wide bus strategy comprising a number of key projects including reconfiguration of bus routes servicing Walthamstow Central and St James St bus stations, new bus routes in the Leyton and Lea Bridge regeneration area, improved bus routes in the north of the borough and better connections to the redevelopment area and stations at Blackhorse Lane.

Additionally, the Council has identified two wider workstreams that will be central to delivering the LIP, i.e.:

- Making Liveable Neighbourhoods for Everyone; and
- Culture Change: Shift to Sustainable Travel and Green Vehicles.

3.4 Defining the assessment area

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

Figure 3.1: London Borough of Waltham Forest area and adjoining boroughs



3.5 Timeframe for the Plan

The LIP includes a focus on delivery for the three years up to 2022 though with long term goals and transport objectives for the next 20 years This is therefore also the timeframe for the SEA.

3.6 Other policies, Plans, Programmes and Sustainability Objectives

3.6.1 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**) are set out in **Table 2.1** below.

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)

Topic	Policy Document
	National Planning Policy Framework (2018)
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)

3.6.2 London Borough of Waltham Forest Policies

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

- Shaping the Borough – New Local Plan – Direction of Travel.

- Waltham Forest Core Strategy 2012.
- Local Implementation Plan 2011-2014.
- Development Management Policies Local Plan 2013.
- Waltham Forest Area Action Plans 2014.
- Transport Liaison Group.
- London Borough of Waltham Forest Air Quality Action Plan 2018-2023.
- The Waltham Forest Climate Local action plan.
- London Borough of Waltham Forest Borough Profile 2017.

4.0 Baseline Environmental Conditions

4.1 Air Quality

The council have been monitoring air quality across the borough since 1993. Like many of the London Boroughs, air quality in Waltham Forest is monitored at a number of specific sites. A borough wide Air Quality Management Area (AQMA) has been declared. Waltham Forest is not meeting the national AQS objectives for Nitrogen Dioxide (NO₂). The borough is meeting the current objectives for Particulate Matter (PM₁₀ and PM_{2.5}), but as PM₁₀ is damaging to health at any level, the AQMA designation remains in place for both NO₂ and PM₁₀. There is also the formal responsibility to work to reductions of PM_{2.5} which is a fraction of PM₁₀. As would be expected, pollution levels are highest on the main roads, particularly the North Circular and A12.

There are 13 air quality Focus Areas⁸ in the borough:

- Sewardstone Rd & Kings Head Hill.
- Billet Round About, Chingford Rd, Billet Road.
- Hall Lane & North Circular Road.
- Southend Rd, Woodford New Road.
- Forest Rd, Blackhorse Rd, Blackhorse Lane.
- Forest Rd and Wood Street.
- Lea Bridge Road.
- Whipps Cross Road and Lea Bridge Road.
- Lea Bridge Road and Markhouse Road.
- Hoe Street.
- Hoe Street and Selborne Road.
- Green Man Roundabout, Leytonstone High Road, Gainsborough Road
- Leyton High Road, Warren Road, Ruckholt Road

The TfL MTS3 LIP Outcomes Borough Data pack 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 Waltham Forest (tonnes) by year

Pollutant	2013	2021	2041
Oxides of Nitrogen (NO _x)	610	240	30

⁸ An air quality Focus Area is a location that has been identified as having high levels of pollution and human exposure.

Pollutant	2013	2021	2041
Particulates (PM ₁₀)	61	49	33
Particulates (PM _{2.5})	35	24	16

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

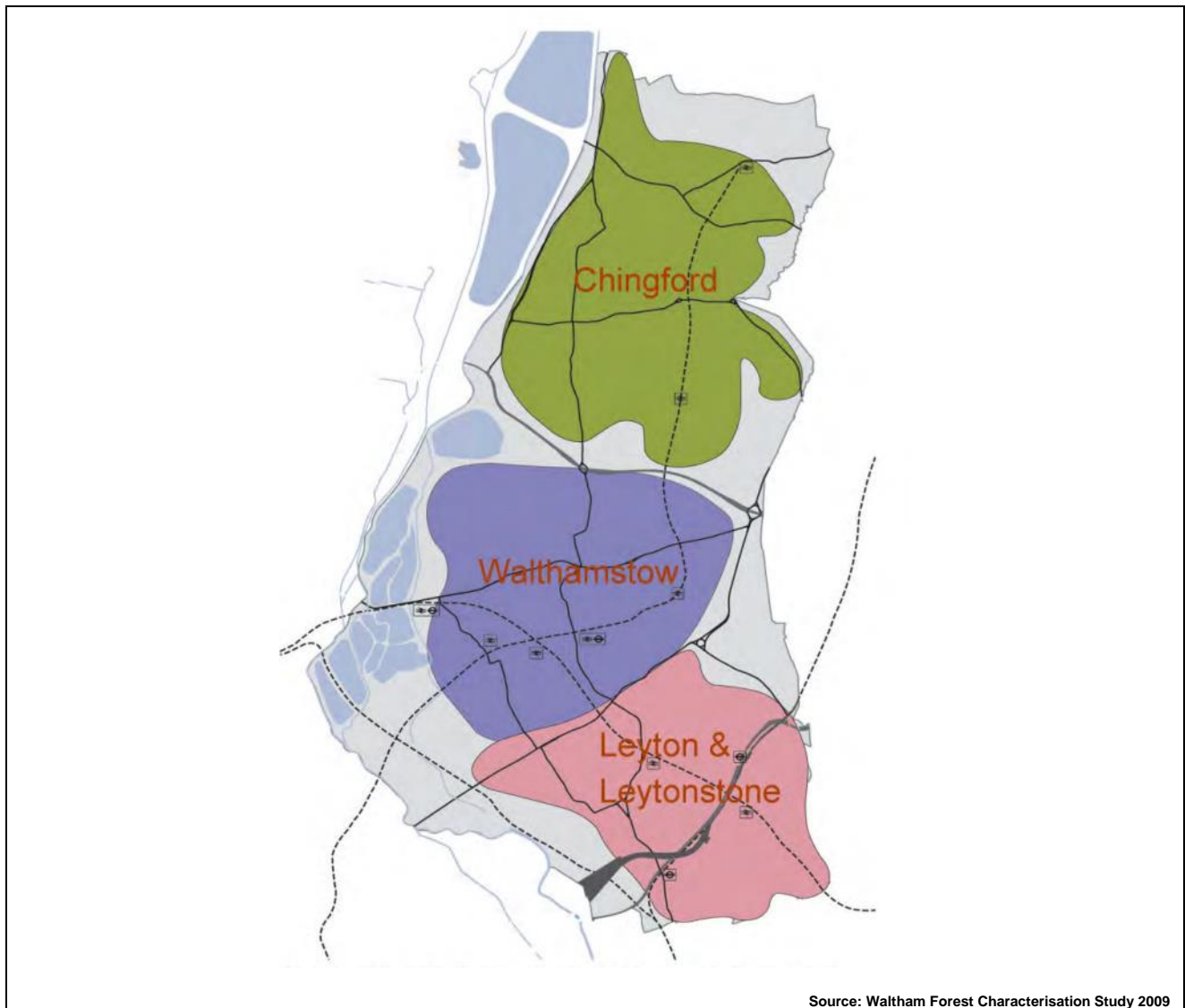
The Waltham Forest Characterisation Study 2009 describes three main character areas in the Borough as follows:

- Chingford:** Long views are provided from the grand houses on high ground in Chingford, the gradual stepping up of the slope influences the southern street patterns. The central area is dominated by the Edwardian period housing, with inter-war and post-war development surrounding the town centre between Chingford TfL Rail Station and Kings Head Hill, reflecting the two major periods of growth. The area is dominated by suburban residential areas, with limited other uses. Chingford centre and Chingford Mount form main mixed-use areas. Street and development form strongly residential. The key green space area is Epping Forest to the north, and there are strong tree-lined avenues around its edge. Greater evidence of park-edged streets provides a greener character and, in many cases, a high-quality street environment. Generally, more owner-occupiers and a more settled population. In terms of car ownership, there are multiple cars per property. The North Circular Road plays important role in dividing the suburban Chingford from the more urban Walthamstow area. The suburban character of this area has been maintained by the relatively low accessibility to the public transport network. Epping Forest forms attractive northern and eastern edge to area, whilst the Lee Valley reservoirs form relatively solid western boundary. The southern part of this area, south of Chingford Mount, is typically more densely developed, and includes a mix of Victorian terraced housing with inter-war terraces. The Chingford Hall Estate and the recent development of the former Greyhound Stadium.
- Walthamstow:** The historic landmarks and taller buildings occupy high ground in town centre, residential streets curve around hill top form. The area has a mixture of historical development reflecting the long history of settlement. Walthamstow Village is the original medieval settlement, centred on St. Mary’s Church. There is a significant retail centre which has influenced wider network of routes. This focuses on Hoe Street (A112), which runs north-south to the west of the village, while Walthamstow High Street (formerly Marsh Street) runs east-west between the Village and Walthamstow Marshes in the Lee Valley. Most of the area comprises streets of Victorian terraces housing, with more recent development on infill sites chiefly where there was bomb damage during World War II. There are significant green areas around the Civic Centre on Forest Road, the adjacent sports fields and at Lloyd Park. There are also four significant areas of Victorian dwellings (Around Markhouse Road to the south, east of Hoe Street near the Village, North of Coppermill Lane and between Forest Road and Billet Road) developed by Warner Estates, which have a distinctive and cohesive character, often still decorated the original deep green used by the company when these were largely rented accommodation. Trees soften the character of the markedly more urban character of the area. There is an increasing

volume of conversions to from houses to flats, which causes utility clutter and parking issues. There is high accessibility by tube, rail and bus has seen densification of central parts of Walthamstow. The North Circular Road dissects northern Walthamstow creating dead ends and disrupted street network. Key routes such as Hoe Street are the focus for greater pedestrian activity. The protection of the green spaces places constraints on growth and limited to intensification of the existing urban area. In terms of pressure for growth, the intensification of the town centre is likely to continue and there is the opportunity for taller buildings to emphasise centre on high ground.

- **Leyton/Leytonstone:** Leyton is dominated by Victorian terraced development as a result of rapid growth during the 1870's, while Leytonstone comprises more Edwardian terraces and larger detached houses closer to Wanstead Flats/Epping Forest. There is greater evidence of employment uses, which has resulted in a less fluid urban form with large blocks and barriers to western edge. There is close proximity to Lea Valley Park, but it has limited influence on the character. The street trees play an important role in green space but there are less than the other character areas. Many houses now in multiple occupancy and rental tenancy which has added pressure on the street in terms of space and quality. The greater use of public transport in the area balances car numbers on the street. Leyton High Road and Leytonstone High Road are central spines which are the focus for activity and taller buildings. Higher accessibility levels to the south have encouraged redevelopment and intensification, whilst northern parts of Leyton are strongly influenced by industrial parks, and northern parts of Leytonstone by Whipps Cross Hospital site. The A12 is a major barrier, it disrupts historic links in street pattern and local character in some key areas where associated redevelopment has occurred. Key spinal routes of Leyton High Road and Leytonstone High Road provide strong public realm focus but are often devoid of street trees. The proximity to Olympic Park and transport nodes means pressure for high density development is greatest in the south of area. The limited green spaces, redevelopment focused on areas of poor character such as former post-war housing estates are key constraints.

Figure 4.1: Neighbourhoods in London Borough of Waltham Forest



4.3 Climate change mitigation and adaptation

Waltham Forest developed its Climate Local action plan (adopted in 2009) and was then refreshed in 2014. In the annual refresh document, the Department for Energy and Climate Change (DECC) for 2012 data was reported. This showed:

- The largest emissions come from homes (51% or 463.4 kilotonnes CO₂)
- Businesses were the next highest emitters (30% or 270.7 kilotonnes CO₂)
- Transport emissions were 19% (171.7 kilotonnes CO₂)
- Across all sectors it equated to an average total of 3.5 tonnes per person which placed Waltham Forest joint lowest in London (with Lewisham and Redbridge) in terms of per person (per capita) CO₂ emissions

In comparison the 2005 data which was used in the original report showed:

- 479 kt (44%) from domestic emissions
- 295 kt (27%) from the industrial and commercial sector
- 313 kt (29%) from road transport

Waltham Forest was identified to have been affected by the following weather events⁹:

- Rainfall leading to surface water flooding resulted in disruption to transport, damage to properties and businesses and resulted in the need to evacuate residents from their homes (in 2009).
- High temperatures and summer drought conditions, for instance in 2003 and 2006, led to the loss of vegetation and the drying out of clay soils contributing to greater incidences of cracked water mains and building foundation movement. Drier periods were also linked to greater tree root related property damage and increased incidents of wildfires.
- Snowfall events of 2009 – 2010 had significant consequences for the maintenance of the borough's road transport network.
- Good weather and bad weather correlate with levels of crime. Crime levels generally peak in July with increased numbers of burglaries being committed through doors and windows that have been left open during good weather. Incidents of theft and pick pocketing increase around Christmas and into the New Year. Milder weather at this time tends to result in a greater number of incidents.

The TfL LIP3 MTS Borough data pack indicates that as a result of a combination of changes to the vehicle fleet and MTS policies, CO₂ emissions from road transport in Waltham Forest will reduce from 175 kta in 2013 to 153 kta in 2021 and to 43.8 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 statistics¹⁰ indicated that 254,400 tonnes of oil equivalent (ktoe) energy was consumed in the London Borough of Waltham Forest. This is lower than the average for boroughs across Inner London. Of this, gas consumption accounted for just under 50%, while 25% was electricity consumption and just over 23% was of petroleum products. Nearly 23% of energy consumed was by industry, and 54% was consumed in people's homes. 21% of energy used was for transport.

⁹ Local Climate Impacts Profiles for London Local Authorities (2010)
http://static.walthamforest.gov.uk/sp/Documents/lclip_final_may_2010.pdf

¹⁰ Department for Business, Energy and Industrial Strategy (2017) - **Sub-national total final energy consumption in the United Kingdom (2005 - 2015)** – 28th September 2017.

4.5 Fairness and inclusivity

The London Borough of Waltham Forest is exceptionally diverse and fast-changing. The population was just over 283,500 in 2018. This is estimated to rise to around 291,500 by 2021, an increase of just over 2.8%. The largest migrant groups in Waltham Forest are from Pakistan, Poland and Romania. Waltham Forest has the second largest proportion of Central and Eastern European residents of all London boroughs, which is twice the London average. Just under half of the people living in the borough are from ethnic minority backgrounds. The breakdown of Waltham Forest's population by ethnicity is indicated in **Table 4.2** below:

Table 4.2: Ethnic makeup of London Borough of Waltham Forest 2018

Ethnicity	Number	%
White - British	84,884	29.9
White - Irish	4,110	1.4
Other White	53,566	18.9
White and Black Caribbean	5,203	1.8
White and Black African	2,621	0.9
White and Asian	3,292	1.2
Other Mixed	5,895	2.1
Indian	10,395	3.7
Pakistani	30,983	10.9
Bangladeshi	5,961	2.1
Chinese	3,023	1.1
Other Asian	12,037	4.2
Black African	21,932	7.7
Black Caribbean	18,230	6.4
Other Black	7,688	2.7
Arab	5,704	2
Any other ethnic groups	8,000	2.8
Total	283,524	100

Source: London Datastore

Waltham Forest is just outside the bottom 10 per cent of the most deprived local authorities, ranking 35th out of 326 in England, according to the overall measure of multiple deprivation (IMD 2015). Its position has improved from 2010 when the borough ranked 15th most deprived in the country. Out of 33 London boroughs, Waltham Forest currently ranks 7th most deprived. According to an estimate by the Campaign to End Child Poverty, 23 per cent of children (before housing costs are factored in) and 35 per cent (after housing costs) were living in poverty as of late 2013, which is higher than the UK average of 16 per cent (BHC) and 25 per cent (AHC)¹¹.

¹¹ http://www.endchildpoverty.org.uk/images/ecp/Report_on_child_poverty_map_2014.pdf

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).
- **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 Waltham Forest are illustrated in **Figure 4.2** following, and are principally in the west of the borough, associated with the natural and man-made waterways in the Lee Valley. Other areas relate to the Ching which starts in the north east of the borough and joins Banbury Reservoir in the west of the borough by the River Lee. More information on water resources in the borough is provide in **Section 0** below.

Figure 4.2: Flood Risk Areas in the London Borough of Waltham Forest



4.7 Geology and soils

Most of the northern, central and eastern parts of the Borough are underlain by London Clay – a heavy and stiff, bluish coloured clay that drains poorly and is prone to volumetric changes in response to moisture content. The south-western area is formed of alluvial deposits close to the

River Lea. East of the alluvium is a band of Taplow Gravel, with areas of Lynch Hill and Hackney Gravel with outcrops of Boyne Hill and Woodford Gravels.

The Borough has two Locally Important Geological Site Sites (LIGS) which are non-statutory sites which have been designated for their geological and geomorphological importance. The two sites; Pole Hill and Chingford Hatch, are located in the mid-west of the Borough¹²:

- Pole Hill: The site sits 91 metres above sea level and, from its summit, offers panoramic views across London. The hill consists of London Clay, capped by Claygate Beds. The Claygate Beds have subsequently been exposed at the top of the hill through erosion. A brickworks was established in the mid-19th century and the pit exposed Claygate Beds consisting of alternating layers of sand and loam, which are indicative of a previous shallow, subtropical sea environment. Over 25 species of marine molluscs have been found here. Nodules within the clay also contain radiating crystals of barite and small crystals of selenite.
- Chingford Hatch: The site is a hillock located within Larks Wood (consisting of London Clay, capped by Woodford Gravel). The clay has been eroded and it is often difficult to spot without temporary excavations. However, the Woodford Gravel has offered some protection. The gravel is confined to a corridor either side of the River Roding and has been understood to be the remains of river terrace deposits, from a tributary of the ancestral Thames.

In addition to these two sites, Hollow Ponds (Leyton Flats) has been proposed as a new LIG site. A survey was carried out in 2013 and the site has been described as having the best exposure of gravel in the Epping Forest ponds.

4.8 Historic environment

Waltham Forest has 113 statutory listed buildings. The Borough's historic assets at risk include 11 grade II listed buildings, 4 grade II* listed buildings including the grade II* listed buildings Granada Cinema, 186, Hoe Street, Walthamstow E17 and Church of St Peter and St Paul, The Green, Chingford E4. The council has produced a list of local buildings of historical or cultural importance in 2012, which included 171 buildings. The borough has fourteen Conservation Areas, to preserve and enhance areas of special historic or architectural interest and their settings. The Higham's Estate, Chingford is a designated Area of Special Character. There are 20 Archaeological Priority Areas where there are significant known archaeological interest or potential for new discoveries¹³.

The Waltham Forest Characterisation Study 2009 provides a useful indication of the three main character areas in the borough as described at 4.2 above. The recently updated Conservation Area appraisal management plans and associated maps¹⁴ provide more specific architectural and historic interest character for the fourteen conservation areas across the borough.

¹² London Borough of Waltham Forest Local Plan Sustainability Appraisal (2017)

¹³ London Borough of Waltham Forest Local Plan Sustainability Appraisal (2017)

¹⁴ Conservation Area Appraisal Management Plans for fourteen areas at: <https://walthamforest.gov.uk/content/evidence-base-development-plan-documents>

4.9 Materials and waste

Waltham Forest is the 7th worst performing Borough in reference to recycling and waste. The waste collected per household is almost 100kg over the national average. The Borough has initiated a number of innovative and targeted solutions to reduce waste and increase recycling. For example, the Borough has introduced points-based recycling rewards programme for residents living in purpose-built flats as an incentive to get more people recycling. The points can be traded in for high street retail vouchers, cinema tickets or a charity donation. The Borough Council are also actively encouraging mothers to make the switch to cloth nappies, through the Real Nappies for London campaign. The Council are offering £54.15 to go towards the initial up-front cost, which, over time, can help save £500 per child. Single use nappies produce around 7kg of waste per child per week and is thought to cost London £20 million per year¹⁵.

Waltham Forest has joined forces with six other local authorities (Barnet, Camden, Enfield, Hackney, Haringey and Islington) to form the North London Waste Plan. This plan aims to set out the planning framework for waste management in the North London Boroughs for the next 15 years. North London does not have a landfill site, so a strategic objective has been set to minimise the amount being sent to landfill by maximising recycling and ensuring that energy-from-waste sites are equipped to deal with an increase in demand. A new energy-from-waste plant to serve North London is being developed in the London Borough of Enfield, just beyond the Waltham Forest boundary.

4.10 Mental and physical wellbeing

Health and well-being in Waltham Forest typically are similar to the London average 79.4 years for men and 83.8 years for women. However, there is a great deal of inequality among wards. Health inequalities are most evident in the more deprived areas in the east of the Borough where people tend to experience the poorest health. In Grove Green, the average male life expectancy was 83.4 years compared to 75.7 years in Lea Bridge. Likewise, in Endlebury, the average female life expectancy was 89.4 years compared to 80.7 years in Lea Bridge (ONS).

For males and females as of 2013-15, healthy life expectancy in Waltham Forest is significantly lower than London (males and females=64) and England (males=63, females=64).¹⁶

The mortality rate from cardiovascular disease for those under 75 years of age is significantly higher than London and England averages, ranking 9th amongst London Boroughs. Infant mortality and low birth weight indicators are not statistically different in Waltham Forest compared to London and England averages, however, vaccination coverage (for MMR) is worse than London and England. The proportion of adults considered to be either overweight or obese in the borough (59%) is lower than the England average (65%) and is in line with London overall (59%).

The proportion of people diagnosed with depression in Waltham Forest (6%) is the same as London (6%) and lower than England (8%). The proportion of people diagnosed with depression has increased year on year between 2012/13 and 2015/16. Hospital admissions for children and young people for mental health conditions and self-harm are significantly lower compared to London and England. Amongst the London Boroughs, Waltham Forest ranks the best for mental

¹⁵ Real Nappies for London <http://www.realnappiesforlondon.org.uk/>

¹⁶ London Borough of Waltham Forest Borough Profile 2017
<https://www.communitywalthamforest.org/sites/default/files/images/Waltham%20Forest%20Borough%20Profile%202017.pdf>

health admissions and the second best for self-harm admissions. These measures relate to more extreme measures of mental health and at this stage there is a lack in reliable information relating to mental wellbeing in the borough.

The proportion of children who are overweight or obese at age 10-11 in Waltham Forest (40%) is significantly higher than in London (38%) and England (34%) overall. The proportion of adults considered to be either overweight or obese in the borough (59%) is lower than the England average (65%) and is in line with London overall (59%).

4.11 Natural capital and natural environment

There are three European Sites are within a 10 km radius of Waltham Forest, i.e.:

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

In addition to these sites there are four SSSIs which have all been designated for biological interests:

- Walthamstow Marshes – broadleaved mixed woodland, fen, marsh and lowland swamp.
- Chingford Reservoir – standing open water and canals.
- Walthamstow Reservoirs -standing open water and canals.
- Epping Forest – broadleaved mixed and Yew woodland.

The recurrent issue in all of the sites is air quality and the related deposition of acidity and nitrogen, which is having a significant effect on the health of trees (particularly in Epping Forest) and water bodies. Nature conservation sites are also under increasing pressure from recreational activities, with particular regard to litter.

The Borough has made significant progress towards its targets set out in the Biodiversity Action Plan (2010): 14 have been completed, 22 are partially complete and 7 are to be started. All are on target to be met by 2022.

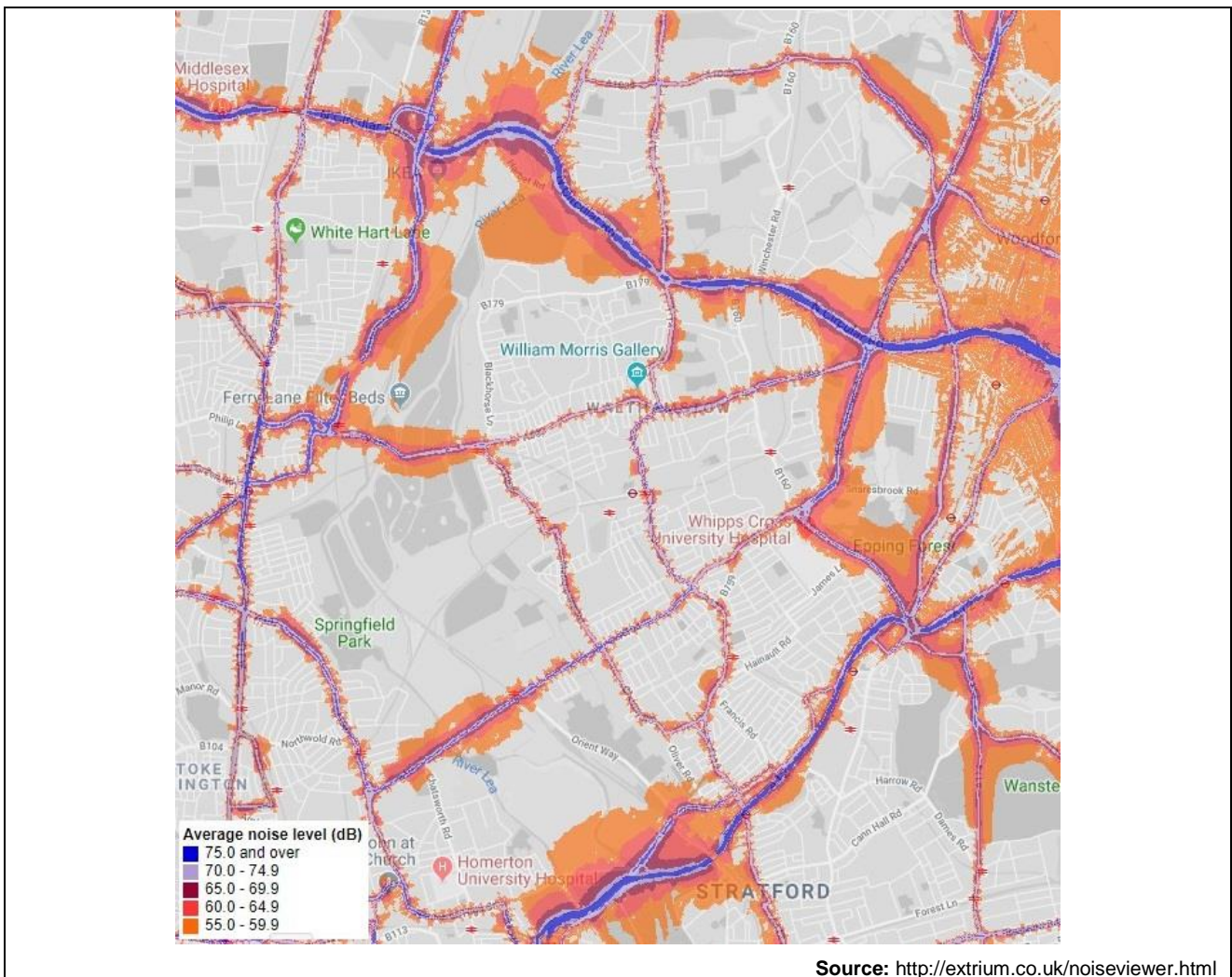
In response to the biodiversity action plan extensive work has been undertaken to transform Walthamstow Reservoirs into a distinctive urban wetland nature reserve and centre for learning. The £8.7 million project is in partnership with Thames Water and key stakeholders (including

Natural England, Environment Agency and the Greater London Authority). The reservoirs support a wide variety of species, including bird populations such as Bittern, Shoveler, and Gadwell. The sites contain SSSI, SPA and Ramsar site designations.

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 Waltham Forest 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 Waltham Forest unsurprisingly are along the main traffic routes through the

Borough. In particular, areas close the A406 North Circular Road and the A12 are particularly affected by noise, but the other main routes such A104, A112 and A1006 all experience higher levels of traffic noise.

The TfL MTS LIP3 Borough Datapack indicates that the amount of traffic on roads in Waltham Forest 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. Noise reduction is more likely to be achieved as a result of changes in vehicle technologies.

4.13 Safety and security

Crime has been steadily declining across Waltham Forest over time, but some neighbourhoods and groups remain more likely to fall victim to crime than others. There was, however, exceptions to the fall in crimes in 2005-06 and 2009-10. The top three crimes recorded for the Borough in 2016-2017 were violent crime (24%), anti-social behaviour (24%) and vehicle crime (12%). The ward with the highest crime rates was High Street (238 crimes recorded in 2017). Endlebury Ward in south Chingford was the lowest recorded (58 crimes)¹⁷.

The Metropolitan Police Service Public Attitude Survey (2015) found that 35% of residents were 'very worried' or 'worried' about crime in the area. This was slightly higher than the London average of 33%. The survey identified 66% of the population of Waltham Forest believed the police were doing either an 'excellent' or 'good' job and 76% either 'agreed' or 'strongly agreed' that the police were dealing with the things that matter to people in the community.

4.14 Water resources and quality

Water pollution is a prominent issue in the borough; the Thames 21 Water Quality Analysis of the River Lee and major tributaries¹⁸, concluded that the River Lee and the majority of the six tributaries have severe problems with water quality. The Dagenham Brook recorded extremely high levels of phosphates, which is a sign that chemicals and sewage are entering the river. Air pollution is also having detrimental effects on the health of water bodies, particularly the deposition of nitrogen. The council are planting new reed beds to help preserve water quality and improve wildlife habitats, in these water bodies. The Ching was assessed to be the 'healthiest' waterway with 23 points or a score of 59 %.

¹⁷ London Borough of Waltham Forest Local Plan Sustainability Appraisal (2017)

¹⁸ Thames21: A water quality analysis of the River Lee and major tributaries within the perimeter of the M25, from Waltham Abbey to Bow Locks, 2011

5.0 SEA Objectives and Framework

5.1 Objectives

Temple and Steer have confirmed with Waltham Forest 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 develop 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.

Waltham Forest 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^{19,20} 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 nine main transport outcomes together with associated objectives of the LIP and the long-term programmes of proposals identified are assessed in turn in the matrix tables

¹⁹ Natural England (2014) - **European Site Conservation Objectives for Epping Forest Special Area of Conservation** - Site Code: UK0012720.

²⁰ Natural England (2014) - **European Site Conservation Objectives for Lee Valley Special Protection Area** - Site Code: UK9012111.

in this section. **Table 5.2** provides a list of the five matrices representing a broad range but similar categories of results.

Table 5.2 Summary of SEA Matrices and Waltham Forest LIP objectives

SEA Matrix	MTS Main Outcomes	Borough objectives / measures relevant to each outcome
1	Outcome 1: London's streets will be healthy and more Londoners will travel actively	<ul style="list-style-type: none"> 1.1 To increase levels of active travel amongst people who live and work in the borough 1.2 Reduce motor traffic dominance and increase the active use of streets 1.3 To continue to deliver a core cycle network for all residents 1.4 Every resident will be supported to make healthy travel choices. 1.5 Continuing to consider pedestrians as a priority mode in all scheme design 1.6 Every resident and visitor will has somewhere to keep their cycle
2	<p>Outcome 2: London's streets will be safe and secure</p> <p>Outcome 3: London's streets will be used more efficiently and have less traffic on them</p> <p>Outcome 4: London's streets will be clean and green</p>	<ul style="list-style-type: none"> 2.1 To support delivery of Vision Zero by 2041 2.2 Create safer neighbourhoods 2.3 Implement and enforce 20mph speed limit on all borough roads 2.4 Making freight, servicing, and deliveries safe and sustainable 2.5 Implement borough Road Safety Plan 2.6 Ensuring Safety and Security through Design 3.1 Reduce the number of vehicles on borough roads 3.2 Making freight, servicing, and deliveries safe and sustainable 3.3 Securing car-free and car-lite at new developments 3.4 To deliver a deliver a car club network that supports reduction of car ownership 3.5 Continue to deliver CPZ programme across the borough 4.1 Improve air quality to create more attractive neighbourhoods for residents and visitors 4.2 Reduce the number of vehicles on borough roads 4.3 Support switch to ultra-low emission vehicles across the borough 4.4 Making freight, servicing, and deliveries safe and sustainable 4.5 Raise awareness of air quality issues to residents, schools and businesses 4.6 Continue to enhance biodiversity through transport infrastructure scheme
3	<p>Outcome 5: The public transport network will meet the needs of a growing London</p> <p>Outcome 6: Public transport will be safe, affordable and accessible to all</p> <p>Outcome 7: Journeys by public transport will</p>	<ul style="list-style-type: none"> Upgrade major transport interchanges to meet current and growing demand Enhance gateways and interchange facilities across the public transport network Delivering cycle hubs at all stations 5.4 Deliver high quality, attractive connections to public transport from all neighbourhoods and centres 6.1 Deliver step free access for all stations 6.2 Improving inclusive access at public transport interchanges 6.3 All bus stops in the borough will be accessible 6.4 Ensuring accessible connections to public transport 7.1 Reducing the number of vehicles on borough roads 7.2 Deliver improvements to cycle, walking and public transport facilities at busy junctions 7.3 Review current bus priority facilities to maximise bus speeds

	be pleasant, fast and reliable	7.4 Unlock funding from development to support growth of bus network 7.5 Work with TfL and developers to introduce new bus services
4	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments Outcome 9: Transport investment will unlock the delivery of new homes and jobs'	New developments will enhance and support strategic and local cycle, walking and public transport networks Work with TfL and developers to introduce new bus services New development will be designed to prioritise cycling, walking and using public transport Implement car-free approach at new developments New development will be sited in well-connected locations 8.6 New development will be designed and managed to reduce impact of serving and freight Expanding the boroughs Underground and Rail Network to unlocks growth 9.2 Delivering high quality places and access for all at Station Gateways 9.3 Planning a Smarter, Greener Bus Network 9.4 Supporting growth through liveable neighbourhoods
5	Long-term proposals	All

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 5.3** 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).

The definitions of the packages are shown in **Table 5.3** below. 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.

Table 5.3: Description of packages modelled for the MTS

Package	Description
---------	-------------

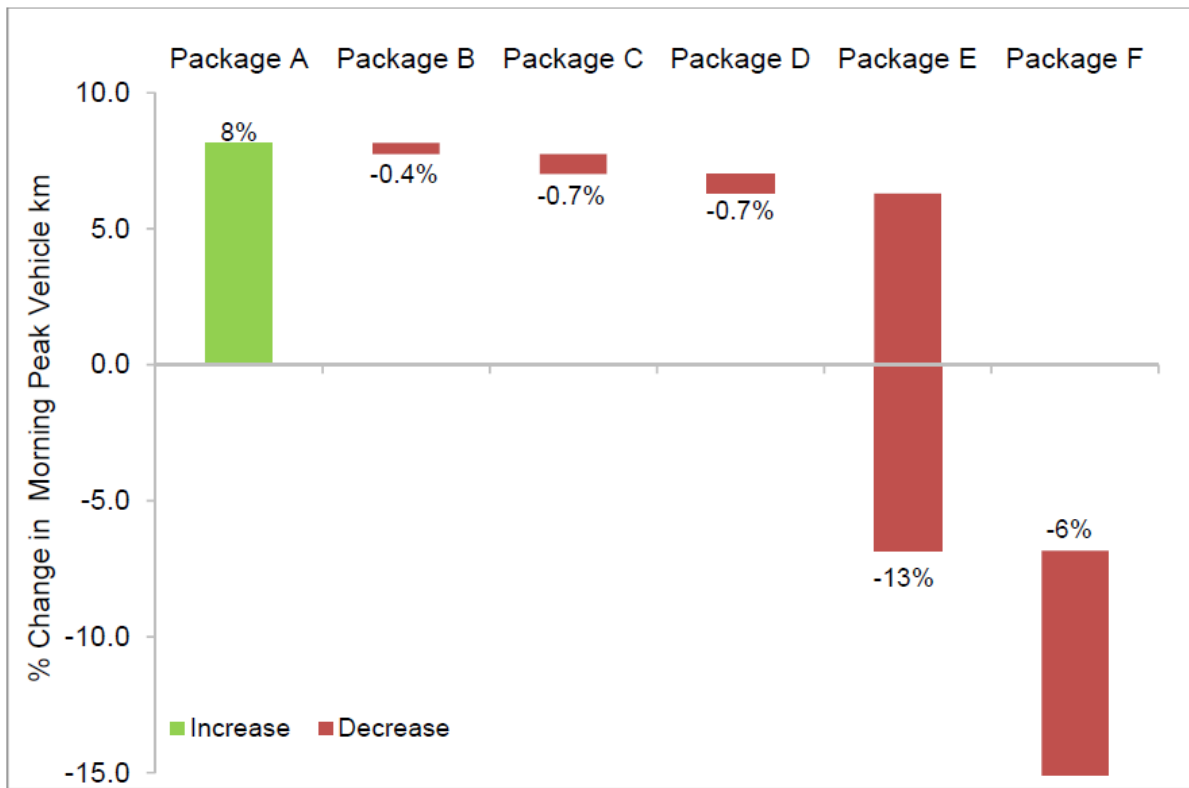
Package	Description
Package A: Core reference case	<p>The core reference case includes funded public transport and highway schemes and likely changes in London's land use and economy. It assumes the latest available projections of population and employment from the GLA as well as Government assumptions on changes in the wider economy, and current funded schemes. A scheme list is provided in Appendix 1 of the MTS and a summary of key schemes is provided as follows:</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 2019/2020, 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 as follows;</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 as follows:</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

Figure 5.1 below 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 Waltham Forest LIP are likely to result in a significant decrease in vehicle-kilometres travelled.

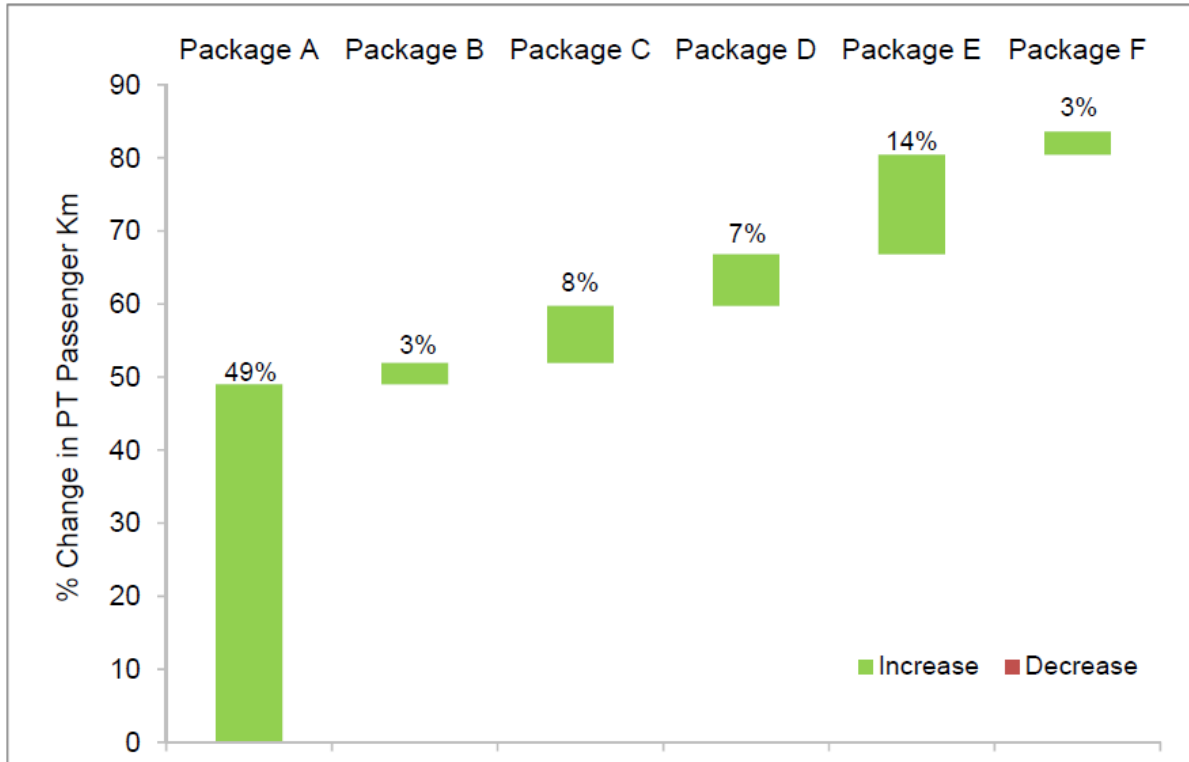
Figure 5.1: Change in London morning peak hour vehicle kilometres, 2015 to 2041 for packages A to F



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 Waltham Forest LIP are likely to result in an increase in public transport usage.

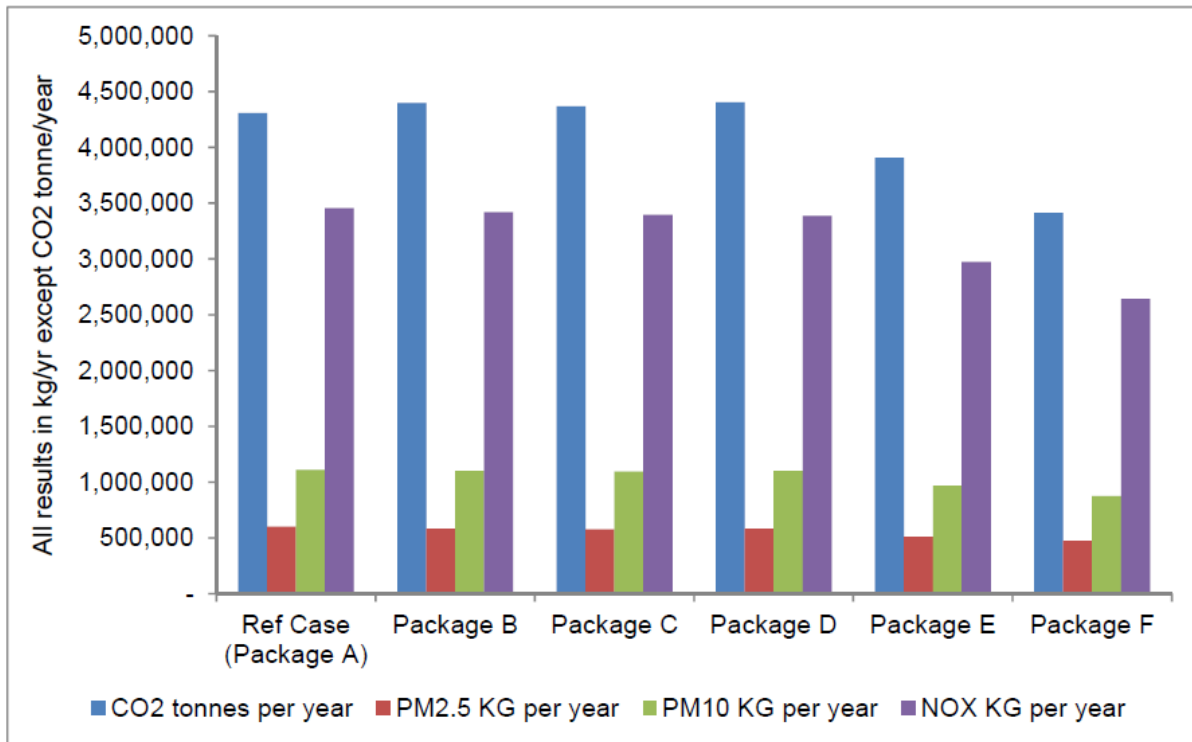
Figure 5.2: Change in 12-hour public transport passenger kilometres, 2015 to 2041 for packages A to F



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 Waltham Forest 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 5.4**.

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 Outcome 1: London’s streets will be healthy and more Londoners will travel actively

Table 5.5: SEA Matrix 1 LIP Outcome 1: London’s streets will be healthy and more Londoners will travel actively

Topic	Objective	Assessment guide questions	Outcome 1: London’s streets will be healthy and more Londoners will travel actively		
			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 including, improvements to cycling and walking infrastructure, low-traffic neighbourhoods, liveable neighbourhoods and the Enjoy Waltham Forest programmes will positively contribute to this. Overall, measures are likely to have a minor contribution to emissions reduction in addition to that due to changes in vehicle technology	+	None required
		Will it help to achieve national and international standards for air quality?	Measures unlikely to be sufficiently great to give a significant improvement in air quality at the national or international level.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and ‘at risk’ groups?	Measures unlikely to have a direct impact on this.	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	Measures will not have a negative impact on health.	0	None required

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of premature deaths caused by poor air quality?	Proposed measures are unlikely 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?	Depends on location, measures will positively contribute to this.	+	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?	Measures including low-traffic neighbourhoods, liveable neighbourhoods, improvements to cycling and walking infrastructure and the Enjoy Waltham Forest programme will positively impact this.	+	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Measures including low-traffic neighbourhoods, liveable neighbourhoods, improvements to cycling and walking infrastructure and the Enjoy Waltham Forest programme will positively impact to this.	+	None required

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			Assessment	Scale of Effect	Mitigation or Enhancement
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
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Measures unlikely to have a direct impact on this.	0	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?	Measures including low-traffic neighbourhoods, liveable neighbourhoods, improvements to cycling and walking infrastructure and the enjoy Waltham Forest programmes will positively contribute to a reduction of GHG emissions.	+	None required

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Measures unlikely to have a direct impact on this.	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 unlikely to have a direct impact on this.	0	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Measures promoting and encouraging cycling and walking as well as low-traffic neighbourhoods and implementation of the Enjoy Waltham Forest programme Should support greater energy efficiency in transport overall	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Measures unlikely to have impacts on this.	0	None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Measures unlikely to have impacts on this.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Measures unlikely to have impacts on this.	0	None required

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			Assessment	Scale of Effect	Mitigation or Enhancement
		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?	The increased connectivity and accessibility of cycling network, improvement to cycling and walking environment, low-traffic neighbourhoods and implementation of the liveable neighbourhoods and the enjoy Waltham Forest programmes will positively impact to this.	+	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?	Measures 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?	Measures 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?	Measures including low-traffic neighbourhoods, liveable neighbourhoods, improvements to cycling and walking infrastructure and the enjoy Waltham Forest programmes will enhance accessibility to the historic environment.	+	None required

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Measures including low-traffic neighbourhoods, liveable neighbourhoods, improvements to cycling and walking infrastructure and the enjoy Waltham Forest programmes will support inclusive design associated with the historic environment.	+	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	The increased connectivity and accessibility of cycling and walking network and implementation of the liveable neighbourhoods and the Enjoy Waltham Forest programme will have positive impacts on this.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Measures are unlikely to have direct impacts on this.	0	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Proposed measures are unlikely 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 reduce flooding, heat and drought risk for at risk and vulnerable communities?	Measures are unlikely to have direct impacts on this.	0	None required

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to greenspaces for recreational and health benefits?	The increased connectivity and accessibility of cycling and walking networks, together with the Enjoy Waltham Forest programme will support 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?	Proposed measures are unlikely 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
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 effect.	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

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			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?	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?	The increased connectivity and accessibility of cycling and walking networks, together with the Enjoy Waltham Forest programme will support access to green spaces with associated health benefits.	+	None required
		Will it result in a greener public realm that can enhance mental health benefits?	Measures are unlikely to have direct effects on this objective.	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?	The increased connectivity and accessibility of cycling and walking networks, together with the Enjoy Waltham Forest programme will support improved access to tranquil places	+	None required
		Will reduce levels of noise generated?	Measures will broadly support this though the overall contribution is likely to be nominal	0	None required

Topic	Objective	Assessment guide questions	Outcome 1: London's streets will be healthy and more Londoners will travel actively		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce inequalities in exposure to ambient noise?	Measures will broadly support this though the overall contribution is likely to be nominal	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures will broadly support this though the overall contribution is likely to be nominal	0	None required
		Will it reduce night time noise in residential areas?	Measures will broadly support this though the overall contribution is likely to be nominal	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 broadly support this though the overall contribution is likely to be nominal	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?	Implementation of low traffic and liveable neighbourhoods and the Enjoy Waltham Forest Programme will positively contribute to this through increased "natural surveillance".	+	None required

5.4.3 Matrix 2: Outcome 2: London’s streets will be safe and secure; Outcome 3: London’s streets will be used more efficiently and have less traffic on them and Outcome 4: London’s streets will be clean and green

Table 5.6: SEA Matrix 2 LIP Outcome 2: London’s streets will be safe and secure; Outcome 3: London’s streets will be used more efficiently and have less traffic on them; Outcome 4: London’s streets will be clean and green

Topic	Objective	Assessment guide questions	Outcome 2: London’s streets will be safe and secure; Outcome 3: London’s streets will be used more efficiently and have less traffic on them; Outcome 4: London’s streets will be clean and green		
			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 such as traffic reduction, low emission vehicles, car free and car-lite development, management of freight, the implementation of Zero Emission Delivery (ZED) network, Enjoy Waltham Forest programme and electric car club vehicles and EV infrastructure will support emissions reduction.	+	None required
		Will it help to achieve national and international standards for air quality?	Measures are not likely to be sufficiently great to give a significant improvement in air quality at national or international scale 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?	Measures will contribute to reduction in emissions. However, the number of people exposed to poor air quality is unlikely to be reduced to a significant extent with changes in vehicle technologies having a bigger contribution.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Measures will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Although proposed measures will have positive impacts on air quality, it is difficult to draw direct conclusions relating to premature deaths	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?	Depends on location, measures can positively contribute to this	+	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 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 such as traffic and speed reduction, low emission vehicles, car free and car-lite development, management of freight, as well as the implementation of Zero Emission Delivery (ZED) network, Enjoy Waltham Forest programme and electric car club vehicles and EV infrastructure's network will , will positively impact these factors.	++	None required

		Will it improve the use of the urban public realm by improving its attractiveness and access?	Measures including speed and traffic volume reduction , improvement to road safety and freight management measures, improvements to the public realm via the Healthy Streets Approach and the Enjoy Waltham Forest programme will positively impact these factors.	++	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 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?	Measures 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?	Measures 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?	Measures such as Urban Forest - incorporating new trees, planting and habitats will provide shade reducing exposure during heatwaves.	+	Not required
		Will it enable those vulnerable during severe weather events to recover?	Measures are unlikely to have notable impacts on this though the Urban Forest will provide a nominal contribution.	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?	Measures such as mode shift - encouragement of walking and cycling; traffic reduction, management of freight, as well as the implementation of ZED network, the Enjoy Waltham Forest programme and electric car club vehicles and EV's network will support emissions reduction.	+	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Measures are unlikely to have direct impacts on this.	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 have direct impacts on this.	0	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Measures such as traffic and speed reduction, low emission vehicles, car free and car-lite development, management of freight, as well as the implementation of Zero Emission Delivery (ZED) network, Enjoy Waltham Forest programme and electric car club vehicles and EV infrastructure's network will 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?	Implementation electric car clubs, EV infrastructure, ZED network, , will positively contribute to this	+	None required

		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Implementation electric car clubs, EV infrastructure, ZED network, will positively contribute to this though the scale depends on energy sources used.	+	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Implementation of ZED and EVs network, electric car clubs, car lite development will positively contribute to this though the level depends on energy sources used.	+	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Measures are unlikely to have direct impacts on this.	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?	Reducing the number of vehicles on borough roads, car lite development and associated with this greater emphasis on walking and cycling, plus improvements to road safety, implementation of the Healthy Streets Approach will help address deficiencies of access.	+	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	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Traffic and speed reduction, improvements to road safety implementation of the Healthy Streets approach and implementation the Enjoy Waltham Forest programme will support this.	+	None required

	and their settings.	Will it improve the wider historic environment and sense of place?	Traffic and speed reduction, improvements to road safety implementation of the Healthy Streets approach and implementation the Enjoy Waltham Forest programme will support this.	+	None required
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Traffic and speed reduction, improvements to road safety implementation of the Healthy Streets approach and implementation the Enjoy Waltham Forest programme will support this.	+	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Traffic and speed reduction, improvements to road safety implementation of the Healthy Streets approach and implementation the Enjoy Waltham Forest programme 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	Implementation of the Healthy Streets approach, the Enjoy Waltham Forest programme together with traffic and speed reduction, plus improvements to road safety will support active travel and help reduce emissions.	++	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Implementation of the Healthy Streets approach and the Enjoy Waltham Forest programme should contribute though the contributions is likely to be modest	+	None required

		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Measures should provide a modest contribution to this.	+	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	Measures such as Urban Forest - incorporating new trees, planting and habitats will positively contribute to this	+	None required
		Will it improve access to greenspaces for recreational and health benefits?	Measures such as Enjoy Waltham Forest and Urban Forest programmes, traffic and speed reductions, increase of road safety 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?	Measures 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.	+	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?	Implementation of the Urban Forest programme will support these improvements.	+	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	Implementation of the Urban Forest programme will support this	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	Implementation of the Urban Forest programme will support these improvements.	+	None required

		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	No direct effects.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	Implementation of the Urban Forest programme will support these improvements.	+	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?	Implementation of the Healthy Streets approach, the Enjoy Waltham Forest and the Urban Frost programmes will support this.	0	None required
		Will it result in a greener public realm that can enhance mental health benefits?	Implementation of the Enjoy Waltham Forest and Urban Forest programmes will support these improvements.	+	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?	Measures such as traffic and traffic speed reduction, management of freight, as well as the implementation of the Enjoy Waltham Forest and Urban Forest programmes, electric car club vehicles and EVs network will support this.	+	None required
		Will reduce levels of noise generated?	Measures such as traffic and traffic speed reduction, management of freight, as well as the implementation of the Enjoy Waltham Forest and Urban Forest programmes, electric car club vehicles and EVs network will support this	+	None required

		Will it reduce inequalities in exposure to ambient noise?	Measures such as traffic and traffic speed reduction, management of freight, as well as the implementation of the Enjoy Waltham Forest and Urban Forest programmes, electric car club vehicles and EVs network will support this	+	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures such as traffic and traffic speed reduction, management of freight, as well as the implementation of the Enjoy Waltham Forest and Urban Forest programmes, electric car club vehicles and EVs network will support this.	+	None required
		Will it reduce night time noise in residential areas?	Measures such as traffic and traffic speed reduction, management of freight, as well as the implementation of the Enjoy Waltham Forest and Urban Forest programmes, electric car club vehicles and EVs network will support this	+	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 such as traffic and traffic speed reduction, management of freight, as well as the implementation of the Enjoy Waltham Forest and Urban Forest programmes, electric car club vehicles and EVs network will support this.	+	None required

<p>Safety and security</p>	<p>To contribute to safety and security and generate the perceptions of safety;</p>	<p>Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?</p>	<p>Measures such as traffic and traffic speed reduction, as well as the implementation of the Enjoy Waltham Forest and Urban Forest programmes, improvements to road safety will support this by supporting active travel which increases "natural surveillance".</p>	<p>+</p>	<p>None required</p>
----------------------------	---	--	---	----------	----------------------

5.4.4 Matrix 3: LIP Outcome 5: The public transport network will meet the needs of a growing London ; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable

Table 5.7: SEA Matrix 3 LIP Outcome 5: The public transport network will meet the needs of a growing London ; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			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 promoting an increase in mode-share of active, sustainable travel, and improving efficiency of freight and delivery vehicles will contribute to emission reduction of priority pollutants. Overall, measures are likely to have a minor contribution to emissions reduction in addition to that due to changes in vehicle technology.	0	None required
		Will it help to achieve national and international standards for air quality?	Measures unlikely to be sufficiently great to give a significant improvement in air quality at the national or international level.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	It is not expected that measures will have a direct impact on this	0	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			Assessment	Scale of Effect	Mitigation or Enhancement
		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?	It is not expected that measures will have a direct impact on this	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?	Depends on location, measures will positively contribute to this.	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?	Improvements to the accessibility and connectivity of public transport, as well as improvements to interchanges/ public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, step free access to stations, improvement to road safety and reduction in traffic will positively impact these factors.	+	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Improvements to the accessibility and connectivity of public transport, as well as improvements to interchanges/ public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, step free access to stations, improvement to road safety and reduction in traffic will positively impact these factors.	+	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?	It is not expected that measures will have a direct impact on this	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?	It is not expected that measures will have a direct impact on this	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	It is not expected that measures will have a direct impact on this	0	None required
		Will it improve access to services during severe weather events?	It is not expected that measures will have a direct impact on this	0	None required
		Will it reduce exposure to heat during heatwaves?	It is not expected that measures will have a direct impact on this	0	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it enable those vulnerable during severe weather events to recover?	It is not expected that measures will have a direct impact on this	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 provide a contribution to the reduction of emissions.	+	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 unlikely to have a direct impact on this.	0	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Measures will contribute to improvements in energy efficiency in transport though overall are unlikely to contribute to significant reductions in demand for energy.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Measures may positively contribute to this though it depends on energy sources used and energy procurement policies of operators.	0	Encourage TfL, LO, TOCs and suppliers of vehicle charging points to procure greater proportion of energy from renewable sources

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			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?	Effects dependent on energy sources used and the energy procurement policies of TfL, London Overground (LO) and other train operating companies (TOCs), along with the vehicle industry and suppliers of vehicle charge points	?	Encourage TfL, LO, TOCs and suppliers of vehicle charging points to procure greater proportion of energy from renewable sources
		Will it provide infrastructure to make a better use of renewable energy sources?	This will depend on the energy procurement policies of TfL, London Overground (LO) and other train operating companies (TOCs), along with the vehicle industry and suppliers of vehicle charge points.	0	Encourage TfL, LO, TOCs and suppliers of vehicle charging points to procure greater proportion of energy from renewable sources.
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Mode shift to active travel, improvements to the walking and cycling environment and improvements to station access and bus efficiency will have a minor positive effect on these groups.	+	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			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 accessibility and connectivity to public transport, as well as improvement to interchanges/ public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, step free access to stations, improvements to road safety and reduction in traffic will positively impact these factors.	+	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?	Improvement to accessibility and connectivity to public transport, as well as improvements to public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, improvement to road safety and reduction in traffic will positively impact these factors.	+	None required
		Will it improve the wider historic environment and sense of place?	Improvements to accessibility and connectivity to public transport, as well as improvement to public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, improvement to road safety and reduction in traffic will positively impact these factors.	+	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			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?	Improvements to accessibility and connectivity to public transport, as well as improvement to public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, free step access, improvement to road safety and reduction in traffic will positively impact these access by these groups.	+	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Improvement to accessibility and connectivity to public transport, as well as improvement to public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, free step access, improvement to road safety and reduction in traffic will positively impact inclusive design in the historic environment.	+	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			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	Improvement to accessibility and connectivity to public transport via promotion of mode shift, as well as improvements to the public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, step free access, improvement to road safety and reduction in traffic will support this connectivity.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Measures should provide a modest contribution to this.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Measures should provide a modest contribution to this.	+	None required
		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

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to greenspaces for recreational and health benefits?	Improvements to accessibility and connectivity and public transport service improvements, as well as improvement to the public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, improvement to road safety and reduction in traffic will positively support access 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?	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?	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 Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			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?	No direct effects.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	No direct effects.	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?	Improvement to accessibility and connectivity and public transport service improvements, as well as improvement to the public realm, improvement to road safety and reduction in traffic will positively contribute these factors.	+	None required
		Will it result in a greener public realm that can enhance mental health benefits?	Measures are unlikely to have any direct effect in this respect.	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?	Improvements to accessibility and connectivity of public transport, service improvements, as well as improvement to the public realm, improvements to road safety and reduction in traffic will positively contribute these factors.	+	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will reduce levels of noise generated?	Measures improving accessibility and connectivity to public transport via promotion of modal shift, as well as measures supporting creation of a sustainable and inclusive public space will minimally contribute to this. However, the contribution unlikely will be significant.	0	None required
		Will it reduce inequalities in exposure to ambient noise?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures are unlikely to have any direct effect in this respect.	0	None required
		Will it reduce night time noise in residential areas?	Measures improving accessibility and connectivity to public transport via promotion of modal shift, as well as measures supporting creation of a sustainable and inclusive public space will minimally contribute to this. However, the contribution unlikely will be significant.	0	None required

Topic	Objective	Assessment guide questions	LIP Outcome 5: The public transport network will meet the needs of a growing London; Outcome 6: Public transport will be safe, affordable and accessible to all and Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
			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?	Measures are unlikely to have any direct effect in this respect.	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?	Improvement to accessibility and connectivity and public transport service improvements, as well as improvement to the public realm, implementation of Healthy Streets and Liveable Neighbourhood principles, improvement to road safety and reduction in traffic are likely to contribute to this through increased "natural surveillance".	+	None required

5.4.3 Matrix 4: Outcome 8. Active, efficient and sustainable travel will be the best option in new developments and Outcome 9. Transport investment will unlock the delivery of new homes and jobs.

Table 5.8: SEA Matrix 4 LIP Outcome 8. Active, efficient and sustainable travel will be the best option in new developments and Outcome 9. Transport investment will unlock the delivery of new homes and jobs.

Topic	Objective	Assessment guide questions	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs

		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)?	Proposed measures to enhance and support local cycling and walking, improve the public transport network and support growth through liveable neighbourhoods offer the potential to reduce emissions of priority pollutants by reducing road congestion.	+	None required
		Will it help to achieve national and international standards for air quality?	Measures unlikely to be sufficiently great to give a significant improvement in national and international 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?	Measures will contribute to reduction in emissions. However, the number of people exposed to poor air quality is unlikely to be reduced to a significant extent with changes in vehicle technologies having a bigger contribution	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	Measures will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Improvements of the transport network are unlikely 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	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			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 unlikely to have a direct impact on this.	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?	The increased connectivity, capacity and accessibility on roads, cycling and public transport networks will have a positive impact on these measures.	+	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	The increased connectivity, capacity and accessibility on roads, cycling and public transport networks will have a positive impact on the use of the 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?	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
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Measures unlikely to have a direct impact on this.	0	None required

Topic	Objective	Assessment guide questions	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			Assessment	Scale of Effect	Mitigation or Enhancement
		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?	Improvements to the public transport network and designing developments to promote active travel are unlikely to significantly reduce 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	Improvements to the public transport network and designing developments to promote active travel are unlikely 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
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?	Mode shift should lead to greater energy efficiency.	+	None required

Topic	Objective	Assessment guide questions	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			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?	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?		Measures may positively contribute to this though it depends on energy sources used and energy procurement policies of operators	0	Encourage TfL, LO, TOCs and suppliers of vehicle charging points 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?		Measures may positively contribute to this though it depends on energy sources used and energy procurement policies of operators	0	Encourage TfL, LO, TOCs and suppliers of vehicle charging points to procure greater proportion of energy from renewable sources	
Will it provide infrastructure to make a better use of renewable energy sources?		This will depend on the energy procurement policies of TfL, London Overground (LO) and other train operating companies (TOCs), along with the vehicle industry and suppliers of vehicle charge points.	0	Encourage TfL, LO, TOCs and suppliers of vehicle charging points to procure greater proportion of energy from renewable sources.	
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	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			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 the public transport network 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?	Improvements to the public transport network and measures to support active travel 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?	Improvements to the public transport network and measures to support active travel 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?	Improvements to the public transport network and measures to support active travel will enhance accessibility to the historic environment.	+	None required

Topic	Objective	Assessment guide questions	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Improvements of the public transport network will support inclusive design associated with the historic environment.	+	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	Increased connectivity, capacity and accessibility on roads, cycling and public transport networks will have positive impacts on this.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Measures are unlikely to have direct impacts on this.	0	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Measures are unlikely to have direct impacts on this.	0	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?	Measures will lead to improved accessibility and more active travel, including to green spaces	+	None required

Topic	Objective	Assessment guide questions	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			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?	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?	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	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			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?	Measures are likely to support access to green space.	+	None required
		Will it result in a greener public realm that can enhance mental health benefits?	Measures are unlikely to have direct effects on this objective.	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?	Active travel measures will support this though it the contribution is likely to be slight..	0	None required
		Will reduce levels of noise generated?	Active travel measures will support this though it the contribution is likely to be slight.	0	None required
		Will it reduce inequalities in exposure to ambient noise?	Active travel measures will support this though it the contribution is likely to be slight.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Active travel measures will support this though it the contribution is likely to be slight.	0	None required
		Will it reduce night time noise in residential areas?	Measures are unlikely to be sufficient to reduce noise levels.	0	None required

Topic	Objective	Assessment guide questions	Outcome 8: Active, efficient and sustainable travel will be the best option in new developments; Outcome 9: Transport investment will unlock the delivery of new homes and jobs		
			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?	Measures are 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?	Measures including those supporting active travel will support this through increased "natural surveillance"	+	None required

5.4.4 Matrix 5: Long Term Interventions.

Table 5.9: SEA Matrix 5: LIP Long Term Interventions up to 2041.

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement

Topic	Objective	Assessment guide questions	LIP Long term interventions 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 will contribute to reduction of emission of priority pollutants. However, it is unlikely that the reduction will be significant in addition to effects of changes in vehicle technology and other MTS policies.	+	None required
		Will it help to achieve national and international standards for air quality?	The reduction will be very slight at the national and international level 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 the 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?	It is not expected that measures will have a direct impact on this	0	None required

Topic	Objective	Assessment guide questions	LIP Long term interventions 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?	Depends on location, measures will positively contribute to this	+	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, making the environment more attractive for active travel, station improvements and reducing the dominance of motor vehicles in neighbourhoods will improve streetscapes and townscapes.	+	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Making the environment more attractive for active travel, and reducing the dominance of motor vehicles in liveable neighbourhoods will improve use of the 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?	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 the design of measures to include climate adaption, including the introduction of SUDs through transport schemes.

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		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
		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	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 the effects of changes in vehicle technology and other MTS policies.	0	None required

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 2041		
			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?	Measures will support energy efficiency in transport, although to a modest extent.	+	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) as well as the vehicle industry and suppliers of vehicle charging points.	?	Encourage LO and TOCs and suppliers of vehicle charging points 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) as well as the vehicle industry and suppliers of vehicle charging points.	?	Encourage LO and TOCs and suppliers of vehicle charging points 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) as well as the vehicle industry and suppliers of vehicle charging points..	?	Encourage LO and TOCs and suppliers of vehicle charging points 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?	Measures are unlikely to have any direct effect in this respect.	0	None required

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 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?	Improvements in accessibility will be provided, including improving rail station accessibility and step free access provision and by encouraging more active travel and	+	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?	Dependent on the location of the schemes delivered.	?	None required.
		Will it improve the wider historic environment and sense of place?	Improvements in accessibility and the delivery of Liveable Neighbourhoods principles will create a better 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?	Dependent on the location of the 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.

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 2041		
			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	Implementation of new cycling and walking links and facilities, support for active travel and improved access to public transport will support reductions in emissions from road transport.	+	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 is unlikely to be reduced to any notable extent in addition to the effects of changes in vehicle technologies and other MTS policies.	0	None required
		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?	Development of walking and cycling links to green areas across the borough along with initiatives to improve access to public transport will enhance access to green spaces for recreation and health benefits.	+	None required

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 2041		
			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?	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
		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 the design of measures to include green infrastructure.

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 2041		
			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?	Measures supporting walking and cycling will improve access to green spaces for the benefit of all Londoners.	+	None required
		Will it result in a greener public realm that can enhance mental health benefits?	Measures including active travel and liveable neighbourhoods 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?	Measures supporting walking and cycling and enhancing the public realm will improve access to quiet and tranquil places for all.	+	None required
		Will reduce levels of noise generated?	Measures supporting active travel and enhanced urban realm will support noise reduction.	+	None required
		Will it reduce inequalities in exposure to ambient noise?	Schemes supporting active travel, transport modal shifts away from private motor 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

Topic	Objective	Assessment guide questions	LIP Long term interventions up to 2041		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce night time noise in residential areas?	Depends on design of the specific measures/ transport schemes.	?	Ensure design of new schemes includes appropriate noise mitigation
		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 the 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?	Improvement to public transport as well as improvements to the public realm, and active travel infrastructure measures are likely to contribute to this through increased "natural surveillance	+	.

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 Waltham Forest 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** below.

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 ²¹	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

²¹ Department of Health statistics on prevalence of childhood obesity available at www.data.london.uk.

6.0 Next Steps

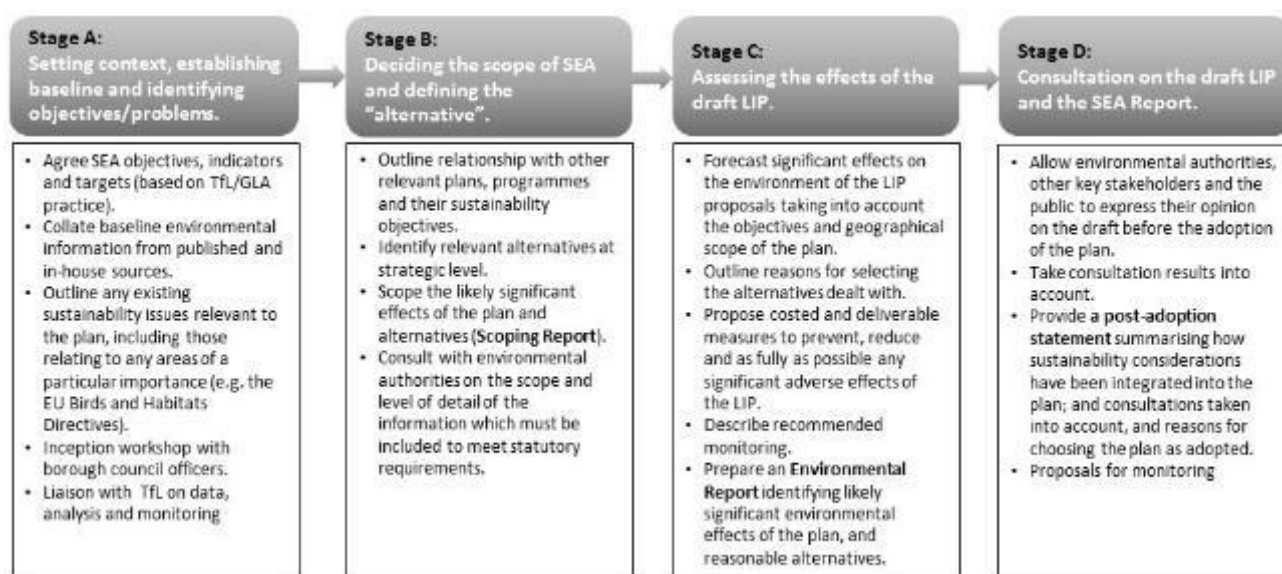
6.1 Development of the LIP

A draft of the LIP was submitted to Transport for London in November 2018 for comment. Waltham Forest Council then conducted 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, Waltham Forest Council will then make any revisions to the LIP that may be necessary, and a final version will be approved by the Council and TfL before the LIP comes 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 Waltham Forest 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.

