



ADVANCED PUBLICATION OF REPORTS

This publication gives five clear working days' notice of the decisions listed below.

These decisions are due to be signed by individual Cabinet Members
and operational key decision makers.

Once signed all decisions will be published on the Council's
Publication of Decisions List.

1. **ENFIELD TRANSPORT PLAN/LOCAL IMPLEMENTATION PLAN 3 -
FINAL VERSION** (Pages 1 - 280)

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MUNICIPAL YEAR 2018/2019 REPORT NO.**ACTION TO BE TAKEN UNDER DELEGATED AUTHORITY****PORTFOLIO DECISION OF:**

Cllr Guney Dogan
Cabinet Member for Environment

REPORT OF:

Executive Director - Place

Agenda – Part: 1	KD Num: 4825
Subject: Enfield Transport Plan / Local Implementation Plan 3 – Final Version	
Wards: All	

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1. EXECUTIVE SUMMARY

This report provides an update on the preparation of the final version of the Enfield Transport Plan (ETP), incorporating Enfield's Third Local Implementation Plan (LIP3), following Cabinet approval of a final draft version in October 2018. This report also seeks agreement from the Cabinet Member for Environment, under delegated authority from the Cabinet, to the submission of the final version of the ETP and LIP3.

2. RECOMMENDATIONS

- 2.1 The Cabinet member to note the changes made to the Enfield Transport Plan, incorporating Enfield's third Local Implementation Plan since the final draft version was approved by Cabinet under Key Decision Number 4707.
- 2.2 Using authority delegated from the Cabinet, the Cabinet Member agrees to the submission of a final version the Enfield Transport Plan, that includes Enfield's Third Local Implementation Plan, to Transport for London with the aim of seeking the approval of the Mayor of London.
- 2.3 The Cabinet Member to note that a borough may revise its Local Implementation Plan at any time if it considers it appropriate, although this is likely only to happen in response to a significant change in local circumstances and would subsequently require Cabinet Member approval.

3. BACKGROUND

- 3.1 A Local Implementation Plan (LIP) is a statutory document, prepared under Section 145 of the Greater London Authority (GLA) Act 1999, which sets out how a London borough proposes to implement the London Mayor's Transport Strategy (MTS) in the borough locally. A LIP must contain the borough's proposals for implementing the MTS in its area. The proposals must be adequate for the purposes of delivering the MTS and consistent with it.
- 3.2 A draft of Enfield's Transport Plan (ETP), including Enfield's Third Local Implementation Plan (LIP3), was approved by Cabinet on the 17th October 2018 under Key Decision Number 4707. Following on from this the draft document was sent out for statutory consultation.
- 3.3 Following completion of the statutory consultation process as required by the GLA Act 1999, responses have been considered, and the ETP/LIP3 has been amended as is appropriate and necessary for it to meet the requirements of the related LIP guidance published by Transport for London (TfL).
- 3.4 TfL has assessed the final draft of Enfield's LIP on behalf of the Mayor to ensure that the requirements set out in previously provided guidance had been met. Copies of TfL's response to Enfield's draft LIP submission and Enfield's proposed reply are contained in Appendix A.
- 3.5 Our response letter contained in Appendix A outlines the changes we have made to the ETP/LIP, the key differences between the Draft ETP/LIP that was approved at Cabinet and the final version of the document contained in Appendix B.
- 3.6 The final version of the LIP needs to be approved by the Cabinet Member for Environment prior to being submitted for final approval by TfL and then, assuming it meets the statutory requirements, the GLA (acting on behalf of the Mayor of London).

4. ALTERNATIVE OPTIONS CONSIDERED

- 4.1 The Council has a statutory duty to prepare a LIP and the form and content of the document are specified in detailed guidance prepared by TfL. There are therefore very limited alternative options in terms of the need for and basic structure of the LIP3. However, there is some flexibility for the Council to develop programmes that meet its own transport priorities, providing that they also help with the implementation of the Mayor's Transport Strategy.

5. REASONS FOR RECOMMENDATIONS

- 5.1 The submission of the LIP is essential to qualify for the annual transport grants, which Enfield will benefit from to the order of £2.5+ million each year. The recommendations include the Cabinet Member approval necessary to enable the submission of the LIP and, assuming it receives TfL and Mayoral approval, the unlocking of LIP funding.
- 5.2 As noted in the previous approval report, there is an obligation imposed by legislation to prepare a LIP. Even if a borough receives no TfL funding, there is still a requirement to produce a LIP.

6. COMMENTS FROM OTHER DEPARTMENTS

6.1 Financial Implications

- 6.1.1 Expenditure, once approved by TfL, is fully funded by means of direct grant; hence no costs fall on the Council.
- 6.1.2 Delivery of the full Cycle Enfield programme is contingent on LIP funding.

6.2 Legal Implications

- 6.2.1 The MTS provides the framework for the development of LIPs by London Boroughs; it also provides the basis for the assessment and approval of annual grant applications.
- 6.2.2 Section 145 of the GLA Act 1999, states that London local authorities must prepare LIP's containing their proposals for the implementation of the MTS in their areas.
- 6.2.3 Under the GLA Act 1999, The Mayor of London is empowered, through TfL, to provide grants to London Boroughs to assist with the implementation of the Transport Strategy. TfL are charged with responsibility of ensuring that the key rationale for allocating grants is the delivery of the MTS as agreed though the borough's approved LIP.

6.3 Property Implications

- 6.3.1 There are no property implications at this stage on the Enfield Transport Plan.
- 6.3.2 When individual schemes are identified specific property implications will be provided.

7. KEY RISKS

7.1 The key risks relating to the LIP are identified in the table below, along with associated mitigation measures.

Risk Category	Comments/Mitigation
Strategic	<p>Risk: No clear direction for future transport investment in Enfield</p> <p>Mitigation: LIP produced in conjunction with Local and Corporation Plan.</p>
Financial	<p>Risk: TfL will not provide grant funding for local transport schemes</p> <p>Mitigation: Compliant LIP produced in line with TfL guidance</p>
Reputational	<p>Risk: Failure to submit LIP on-time.</p> <p>Mitigation: Approval times built into programme to ensure submission of final document by February 2019.</p>
Regulatory	<p>Risk: Failure to comply with statutory requirements.</p> <p>Mitigation: LIP discussed with TfL officers at key stages including statutory consultation and produced in accordance with TfL guidance.</p>

8. IMPACT ON COUNCIL PRIORITIES – CREATING A LIFETIME OF OPPORTUNITIES IN ENFIELD

8.1 The Council has three key strategic aims, which are integral to the delivery of Council services. These are **Good homes in well-connected neighbourhoods, Sustain strong and healthy communities and Build our local economy to create a thriving place**. This report indicates how the ETP and LIP3 will contribute towards the achievement of these aims and the new Corporate Plan.

8.2 Good homes in well-connected neighbourhoods

8.2.1 The proposed LIP activities represent vital investment in the improvement and renewal of the transport infrastructure, particularly supporting regeneration and environmental enhancements with clear beneficial impact on climate change. The LIP is also informed by and supports the LDF Core Strategy and associated evolving Local Plan. LIP schemes and activities will contribute positively towards the delivery of good homes, improving the connectivity of existing neighbourhoods.

8.3 Sustain strong and healthy communities

- 8.3.1 The impact of LIP proposals are positive on disability groups, disadvantaged groups and disadvantaged areas. Particular elements of work related to the improvement and promotion of sustainable modes of travel will enhance the cohesion of communities. Several LIP projects and programmes have emphasis on community engagement and safety. The consultation process carried out for new schemes allows the representation and input of all interest groups.
- 8.3.2 The policies, programmes and initiatives contained within the ETP will help us improve the ease in which we travel in the borough, encourage sustainable and active travel helping us to manage environmental problems related to congestion, local air quality, reduce our impact on climate change and improve health, safety and accessibility for all in our communities.
- 8.3.3 The LIP falls within the scope of the Strategic Environmental Assessment Directive and an Environmental Report has been undertaken to assess the implications of the LIP prior to its submission for Mayoral approval in February 2019. This assessment is contained in Appendix C. The SEA concludes that no significant adverse environmental effects will result from the implementation of the Transport Plan and LIP in Enfield.

8.4 Build our local economy to create a thriving place

- 8.4.1 The evolving Local Plan is the overall strategic plan for Enfield, setting out an integrated economic, environmental, transport and social framework for the development of Enfield over future years. The Local Plan will set out the framework for the development and use of land in Enfield, linking in improvements to infrastructure (especially transport); setting out proposals for implementation, coordination and resourcing. The ETP and its proposals, will support the Local Plan helping to ensure that Enfield reaches its full economic potential; supporting local businesses, attracting investment; increasing jobs and business growth; supporting and empowering the voluntary and community sector; whilst building strong and sustainable futures for our residents, the environment and the economy as a whole.
- 8.4.2 Several of the objectives contained in the ETP will help enhance people's ability to reach their full potential by improving accessibility for sustainable modes of transport making it easier for people access opportunities in Enfield and further afield.

9. EQUALITIES IMPACT IMPLICATIONS

- 9.1 In developing our objectives/proposals we have had regard to TfL's equality objectives specifically the commitment to:

- Provide accessible transport services and a consistent customer service that meets the needs of all customers
- Ensure access to London's transport infrastructure so that more people can make the most of life in the Capital
- Provide safe travel in London so that fewer young people, women and people from BAME communities are deterred from travelling because of safety concerns
- A transport system that promotes and improves the health of all Londoners
- Engage with more of London's diverse communities to effectively inform, develop and deliver our strategies, services and programmes

9.2 Given the scale of the Enfield TP and associated funding, it has required the preparation of an Equality Impact Assessment (EqIA). This was undertaken in parallel with the preparation of the final draft report.

9.3 The EqIA examined the proposed strategy, socio-demographic data gathered in relation to the LIP and the available information on the outcomes of the policies. Based on this, and using professional judgement, it identified several disproportionate impacts that may occur on Equalities Groups because of the implementation of the proposed strategy.

The key beneficial impacts relate to:

- Measures to encourage active travel, particularly to and from schools, will benefit people in many of the protected groups. The health benefits to many older and/or disabled people with respiratory illnesses will be greater than for the general population. Similarly, children and young people are particularly vulnerable to air pollution as their respiratory systems are still developing, and therefore also will benefit disproportionately. The health benefits for children from greater participation in active travel also will be greater than for the general population.
- Actions to improve air quality are likely to benefit older and/or disabled people with respiratory illnesses more than for the general population. Similarly, children and young people also will benefit disproportionately.
- Managing growing demand for on-street parking may benefit some of the protected groups, especially where they are afforded greater priority in parking allocations.
- Older people, children and disabled people are more vulnerable road users, and will disproportionately benefit from improvements in road safety.
- Policies to improve the reliability and accessibility of public transport will benefit protected groups with a greater reliance on public transport than the public at large to a disproportionate extent.

- 9.4 The EqIA identified that there may be an adverse impact on people on lower income due to increases in parking charges as part of policies to manage on-street parking. This will need to be assessed further to understand the actual impact (including whether proposed charges are significant in terms of the overall running costs of a private car), particularly given that low income groups are less likely to own a car, with any potential mitigation balanced against the wider aims of the LIP3 including the intention to reduce health inequalities.
- 9.5 It should be noted that in drafting the ETP and LIP3, reducing inequality has been at the core with a focus on health outcomes.
- 9.6 The ETP / LIP3 looks extensively at Enfield's key challenges and considers what role transport can play in addressing them. What is apparent is that there are serious health inequalities across the borough and that promoting safe, sustainable and active travel can go some way to addressing these. For these reasons the strategic priorities focus on health:
- Making active travel the natural choice, particularly for those trips less than 2km in length
 - Making more school trips safe, sustainable and healthy
 - Reducing the impact of private vehicles on our streets
 - Making the public transport network more reliable, accessible and the natural choice for longer trips
 - Maintaining our assets for the benefit of the public
- 9.7 It should also be noted that existing larger scale programmes, including Cycle Enfield, have been subject to strategic equality impacts assessments, while individual schemes and interventions take account of equality impacts as part of their development and delivery lifecycles.

10. PERFORMANCE AND DATA IMPLICATIONS

- 10.1 Obtaining approval for the LIP is an absolute legal condition to be entitled to the LIP transport expenditure grants in the order of £2.5+ million annually. The continued availability of the funds into the future from 2019 onwards is legally dependent on having an approved LIP by 31st March 2019. The removal of LIP funding will very directly and detrimentally affect the delivery of transport initiatives and schemes on street. The negative impact will be substantial and fall on all sections of residents and visitors. Enfield's LIP activities will have clear and direct bearing upon on other services as the programmes aid regeneration, improve public health and contribute to the wider aims and goals of other departments.

11. HEALTH AND SAFETY IMPLICATIONS

- 11.1 There are no direct health and safety complications from the LIP. Individual schemes implemented through LIP funding may need to be

subject to Health and safety considerations through individual scheme level reports as appropriate.

12. PUBLIC HEALTH IMPLICATIONS

- 12.1 Transport is one of the fundamental determinants of health; it may be health-damaging or health promoting. The LIP as outlined here will make transport in Enfield much more health-promoting by increasing physical activity and reducing the health costs of motorised transport. It will increase physical activity by making this part of everyday life e.g. walking or cycling as a normal, everyday transport mode. Achieving a modal shift towards active travel will also reduce the health damaging effects of motorised transport e.g. road traffic injuries, air pollution, community segregation and noise. Such is the effect of physical activity upon health that it has been calculated that a modal shift to levels of active transport in The Netherlands would save the NHS £17 billion per year. This would be achieved through savings in treating Type 2 diabetes, heart disease, stroke, some cancers, musculo-skeletal disease and dementia. Improving the walking and cycle infrastructure would also be likely to positively impact upon health inequalities as income or wealth would become a less significant factor in a person's ability to travel within the borough e.g. access to employment, healthcare, social networks etc.
- 12.2 Reducing obesity is a priority for Enfield, as outlined in the Borough's Health and Wellbeing Strategy. 61.4% of adults are classified as overweight or obese (ALS, 2016). Data for academic years 2014/15 to 2016/17 shows that the average prevalence of excess weight in year 6 pupils is 41.5%. This is significantly higher than London (37.9%) and England (33.87%) averages. If left unchanged, this situation will lead to serious health complications later in life, such as diabetes, heart disease and cancers.
- 12.3 At the heart of the plan is improving people's health. Our local priorities reflect this, with a focus on making travel more sustainable, active and safe.
- 12.4 Creating an environment where people actively choose to walk and cycle as part of everyday life can have a significant impact on public health and has the potential to reduce health inequalities. It is an essential component of a strategic approach to increasing physical activity and may be more cost-effective than other initiatives that promote exercise, sport and active leisure pursuits.
- 12.5 Increased walking and cycling offers many other advantages including cleaner air, less noise, more connected neighbourhoods, less stress and fear, and fewer road traffic injuries.
- 12.6 More walking and cycling also has the potential to achieve related policy objectives:

- Supports local businesses and promotes vibrant town centres
- Provides a high-quality, appealing public realm
- Reduces road danger and noise
- Increases the number of people of all ages out on the streets, making public spaces seem more welcoming and providing opportunities for social interaction and children's play
- Provides an opportunity for everyone, including people with impairments, to exercise and enjoy the outdoor environment

12.7 There is an extensive evidence base for effective action on active travel. The most relevant review has been conducted by BICE, looking specifically at local measures to promote active transport¹.

12.8 The policies, programmes and initiatives within the TP will help us improve the ease in which we travel in the borough, encourage sustainable and active travel helping us to manage environmental problems related to congestion, local air quality, reduce our impact on climate change and improve health, safety and accessibility for all in our communities. This supports Public Health's efforts to embed Health in all Policies across the Council.

Background Papers

None.

¹ National Institute for Health and Care Excellence. Walking and cycling: local measures to promote walking and cycling as forms of travel or recreation. London 2012.

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Via email

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7 December 2018

Dear Sarah

Enfield's Draft Local Implementation Plan

Thank you for submitting the London Borough of Enfield's draft Local Implementation Plan (LIP) to TfL for consultation.

London's boroughs play a vital role in delivering the Mayor's Transport Strategy (MTS) and helping to achieve the ambitious target for 80 per cent of all trips in London to be undertaken by active, efficient and sustainable modes of travel by 2041. That is why this third round of LIPs is so important in demonstrating how the MTS will be implemented at a local level across the city.

Colleagues at TfL have reviewed your consultation draft submission. The intention of our assessment is to be constructive in assisting you to achieve approval. I enclose here detailed comments for your consideration ahead of the final draft LIP submission to TfL on 16 February 2019.

Final approval of the LIP will be a matter for the Mayor. There are many elements of the London Borough of Enfield's consultation draft LIP which are welcomed. However, our review has identified a number of matters we consider necessary to be reviewed and strengthened. Addressing these issues in full is required for the London Borough of Enfield's LIP to meet the necessary standard we believe the Mayor would consider adequate for approval, in accordance with the conditions set out in section 146 of the GLA Act (1999).

A summary of our key comments is as follows:

- The LIP clearly sets out how Enfield's aspirations and objectives align with those contained in the MTS.
- The longer term goals included within the LIP are consistent with the aims of the MTS and there is a very clear prioritisation process set out in your LIP for these.

- The commitment to adopt a Vision Zero approach and develop a Vision Zero Action Plan is strongly welcomed.
- More spatial analysis could be included to sign post how the programme of work will address the challenges and overcome barriers to achieving the outcomes set out in the MTS. To help with the spatial analysis, more detail could be included from the City Planner tool which is now available.
- The proposals and programme of delivery could benefit from further, more specific detail to provide further confidence that the outcomes set out in the MTS are achievable.

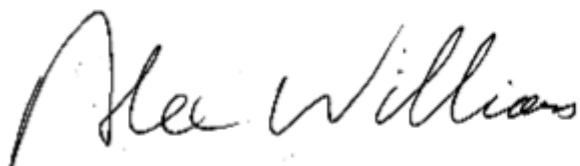
A list of specific comments is enclosed in the annex to this letter.

We look forward to continuing to work with Enfield over the coming months as you finalise your LIP. My team will contact your officers to request a follow-up meeting to discuss our feedback. In addition, I request that you write to me confirming receipt of this letter and outline in your reply how you will amend your LIP in response to our comments.

Please do not hesitate to contact us going forward should anything in our response require clarification or if you need any support with the further development of the LIP. The key contacts for Enfield are:

Helen Fallon - Transport Strategy contact
Sideeck Roojee - Network Sponsorship contact

Yours sincerely

A handwritten signature in black ink that reads "Alex Williams". The signature is written in a cursive, flowing style.

Alex Williams
Director of City Planning
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Direct line: 020 3054 7023

Third Local Implementation Plan – Consultation Feedback Form December 2018

Borough name: Enfield

1.LIP guidance requirements

1.1 All requirements met.

2.Objective setting – Mode share

2.1 All requirements met, however clearer links between proposed programmes of work and the borough challenges would strengthen this section.

- *Clarification: 60% of existing car journeys are generated locally (p.30). This contradicts the impacts of traffic congestion from the M11 and the M25 as stated in the Mini-Holland report.*

3.Objective setting – MTS Outcomes

3.1 The LIP is aligned with the MTS Outcomes, however, more detail around the delivery programmes will demonstrate the borough's to deliver against them. More detail should be included around co-ordination with neighbouring boroughs, e.g. schemes and existing facilities in neighbouring boroughs.

3.2 Further commentary, graphics and spatial information should be provided to support the following outcomes:

Outcome 1: Whilst there is a good level of contextual data on health, there is less on cycling. Given the strategic work and excellent delivery record Enfield has for the Mini Holland programme this section could easily be strengthened e.g. using the TfL cyclable trips analysis.. Do the demographics of the borough suggest any particular pockets of opportunity for investment.

- *Clarification: Legend is missing on the cycle map on p.47; what do the cycling routes represent and how do they connect with other cycle routes in neighbouring boroughs.*

Outcome 2: To demonstrate alignment with Vision Zero, more spatial analysis of where there are road danger hotspots and how this will inform interventions..

Outcome 3: Use of data in the LIP is good for this outcome, however it could be strengthened with further detail on car ownership in the borough, possibly spatially if available and where and why (trip purpose) people drive.

Outcome 4: This section could be strengthened with a spatial breakdown of where the air quality hotspots are in the borough, possibly taken from your AQAP.

Outcomes 5,6 & 7: A map of bus speeds could be included as this is one of the KPIs. There are references in the text, but they could be more specific.

Outcomes 8 and 9: Further detail could be included here on the opportunity/challenge in getting people to make non-car trips in the growth areas. CR2 is mentioned, but bus priority and better cycle routes could also be identified.

4. Borough targets

4.1 We note that targets have been set in line with the borough data pack in all cases. Further spatial data, assessment of local challenges and opportunities to address these through a more detailed delivery plan would provide more confidence that these are achievable.

Outcome 2

4.2 Following the moves to new collision reporting systems – the Case Overview and Preparation Application (COPA) for the Metropolitan Police Service and Collision Reporting And Sharing (CRASH) for the City of London Police – we have now completed initial back estimates for the number of people killed or seriously injured (KSI) for each borough between 2005 and 2017 (contained in the 2017 'Casualties in Greater London' factsheet, available on the TfL website alongside supporting data tables at <https://tfl.gov.uk/corporate/safety-and-security/road-safety>).

4.3 We will issue a revised set of borough trajectories for Outcome 2 and Vision Zero and need boroughs to update their targets to reflect these new trajectories in their final LIP for 2022 and 2030 (2041 is unchanged at 0). The level of ambition remains unchanged, despite these revised figures. The borough is also asked to include the following text in the final LIP under Outcome 2 explaining the reasoning for the change in trajectories and targets:

'The Metropolitan Police Service (MPS) introduced a new collision reporting system in November 2016 - the Case Overview and Preparation Application (COPA). The City of London Police also moved to the Collision Reporting And Sharing (CRASH) system in October 2015. This has had a number of impacts on the data that is available to Transport for London (TfL), and the London Boroughs in the ACCSTATS database for collision investigation.

Under the new systems officers use an 'injury-based assessment' in line with DfT STATS 20 guidance and online self reporting is available. Both of these changes are expected to provide a better assessment of injury occurrence and severity but have made data collected from November 2016 onwards difficult to compare with earlier data.

TfL commissioned the Transport Research Laboratory (TRL) to undertake a back-casting exercise to enable pre November 2016 data to be compared with post November 2016 data. These initial back cast estimates include the number of people killed or seriously injured (KSI) for each borough between 2005 and 2017 and this data has been used to update borough targets to align with those contained in the Mayor's Transport Strategy, namely a 65 percent reduction in KSIs by 2022 against the 2005-09 baseline, a 70 percent reduction in KSIs by 2030 against the 2010-14 baseline and zero KSIs by 2041. The targets contained in this final version of the LIP have been set against Outcome 2 for Vision Zero to reflect the reporting changes. The level of ambition remains unchanged, despite these revised figures.'

5.Delivery Plan – Longer term

5.1 Good detail included on method of prioritisation for long term investment.

6.Delivery Plan – 3 year programme

6.1 Further detail could be included in the three year programme to demonstrate the programmes are targeted to meet the outcomes of the MTS and challenges identified in the earlier sections of the draft LIP.

7.Delivery Plan – 1 year programme

7.1 Further detail should be included on what is being proposed under each area (or at minimum a long list ahead of the prioritisation process being applied). Further detail could be included on how outcomes are being addressed, e.g. locations and timescales.

It is also noted that there has been no allocation in the delivery plan to develop bus priority measures. Bus priority measures should be investigated / identified. Whilst it is recognised that it is not always feasible to reallocate road space to bus lanes, other measures can support prioritisation of buses ahead of general traffic.

Please reply to: Dominic Millen

Alex Williams
Director of City Planning

E-mail: Dominic.millen@enfield.gov.uk

My Ref: LBE Rep to TfL LIP3 Com

Via email: alexwilliams@tfl.gov.uk

Your Ref: -

Date: 2nd February 2019

Dear Alex

TfL's Response to Enfield's Draft Local Implementation Plan

Thank you for your letter of 7 December 2018. It is welcome that you acknowledge the vital role that London's Boroughs play in working with TfL to deliver the Mayor's Transport Strategy. I and colleagues here at the London Borough of Enfield look forward to building on our existing relationship with TfL, to deliver an ambitious programme of work as set out in our draft Local Implementation Plan 3 (LIP3) document.

Your summary of key comments in respect of this document are helpful and we have taken these as supportive of our priorities and objectives. We have also taken the view that there is nothing in your response which questions the fundamental soundness of our LIP3. This is something of a relief to the various members of my team who have worked to bring this together.

In respect of the specific comments, I thought it would be useful to outline what we have done to address them:

- 2.1 This has been clarified with colleagues at TfL.
- 3.1 More information has been provided on the detail of our work programme including joint initiatives with neighbouring boroughs.
- 3.2 Where available and relevant additional information has been provided including from the City planner tool:
 - Outcome 1 – The case for promoting cycling was made extensively in Enfield's Mini-Holland submission so this has been referenced.
 - Outcome 2 – Work has been commissioned to look at priority locations for our next tranche of interventions. This will be informed by the latest collision data which has only recently been made available.
 - Outcome 3 – More analysis has been provided.
 - Outcome 4 – More information has been provided which shows that the majority of air quality hotspots are on roads outside of the Council's control.
 - Outcomes 5,6 & 7 – More information has been provided.
 - Outcomes 8 and 9 – More information has been provided.
- 4.1 Given we are in the final quarter of 2018/19 and funding has now been confirmed for 2019/20, our intention is to prepare a more detailed delivery plan before the end of March. This will be subject to political approval but can be shared with TfL colleagues once drafted.

- 4.2 The LIP3 has been updated to reflect the update historical data with targets changed in line with the guidance.
- 4.3 The LIP3 has been updated to reflect the update historical data with targets changed in line with the guidance.
- 6.1 Given that the three-year funding programme allocations are constant and it is the actual schemes which are subject to change, including re-profiling in line with external funding availability, we believe that the level of detail provided is appropriate at this time.
- 7.1 More detail has been provided and there is reference to the Proforma A which accompanies the main LIP3.
- 7.1 Bus priority is something which is considered when identifying and delivering schemes under other programme areas, for example Cycle Enfield, so a separate allocation has not been included at this time.

I would like to thank you and your team for your hard work supporting the preparation of our LIP3. We look forward to working with TfL colleagues to finalise our LIP3 and begin delivery.

Regards

Sarah Cary
Executive Director, Place

IMPORTANT – Enfield residents should register for an online Enfield Connected account. Enfield Connected puts many Council services in one place, speeds up your payments and saves you time – to set up your account today go to www.enfield.gov.uk/connected

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The London Borough of Enfield Transport Plan 2019

Including the Third
Local Implementation Plan

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Foreword from the Cabinet Member for Environment

This Transport Plan outlines what we will do to improve the elements of the transport network which we are responsible for. Alongside it will be routine maintenance and, at the other end of the scale, delivery of strategic projects, such as the new Meridian Water station.

The core of the Transport Plan is Enfield's next Local Implementation Plan, which sets out how the Council proposes to help implement the Mayor of London's Transport Strategy within Enfield. The LIP also details where money for transport improvements comes from, and how we propose to spend it.

With limited funds available it is now more important than ever to ensure that every pound is used effectively. We believe that the package of measures summarised in this document provides value for money, is well balanced and will help meet the transport needs of the borough in the coming years.

At the heart of the plan we focus on improving people's health. Enfield has convenient neighbourhood shops, schools and parks and we hope to build on this, improving the public realm through the Healthy Streets approach to bring communities and people together, making journeys convenient, accessible and safe.

We will work with local businesses and our communities to understand what transport challenges they face and how we can work together to support one another. However, we are mindful that certain forms of transport can have a negative impact on our environment; including noise, air quality and vehicle emissions. There are many exciting and new ways that we can tackle this. We will support our residents and businesses to embrace active travel, walking and cycling more often. We will be continuously improving cycle and walking routes and facilities for all residents within the borough, through the Cycle Enfield programme and the various initiatives contained within this Plan.

Enfield is a changing and growing borough and the Enfield Transport Plan is part of our work to support the employment and population growth expected here over the next 20 years.



Councillor Guney Dogan
Cabinet Member for Environment

1 Executive summary

1.1 What is the Transport Plan?

Enfield's Transport Plan sets out how we will improve travel to, within and from the borough and contribute to the wider economic, social and environmental objectives of the Council. It is firmly grounded in evidence and analysis of local challenges and issues.

The Transport Plan forms the basis for Enfield's third Local Implementation Plan (LIP), 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 Mayors Transport Strategy in their area.

The Transport Plan guides transport priorities and projects and outlines our three-year programme of investment (2019/20 to 2021/22).

1.2 What are we trying to achieve?

The plan identifies how we will address existing and new challenges in line with our aim of achieving a sustainable future for the borough. The policies, programmes and initiatives within this plan will help us improve the ease in which we travel in the borough, encourage sustainable and active travel helping us to manage environmental problems related to congestion, local air quality, reduce our impact on climate change and improve health, safety and accessibility for all in our communities.

The plan identifies how we will work towards achieving this through the following seven transport objectives, which are described below:

O1 Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough (Page 56)

Enfield Council recognises that there are real opportunities to increase the number of people cycling in the borough with great benefits to be gained.

In 2014 Enfield applied for additional funding from the Mayor's Mini-Holland fund. The Mini-Holland programme is part of the Mayor's Healthy Streets agenda to help Londoners use cars less and walk, cycle and use public transport more. It specifically addresses the demands of growth in outer London.

Enfield Council remains committed to the delivery of the strategy set out in our original Mini-Holland bid and summarised in section 5.2 of this plan. It is this comprehensive approach that will create the environment that enables cycling to become a realistic transport choice for all members of the diverse Enfield community.

O2 Promote safe, active and sustainable transport to and from schools (Page 58)

For many years Enfield Council has worked with local schools and other bodies to reduce reliance on the car and to promote the healthier alternatives of walking and cycling, also promoting the use of public transport. There are 102 schools in the borough, 70 primary schools, 20 secondary schools, 6 independent schools and 6 special educational needs (SEN) schools generating significant levels of car based journeys at the start and end of the school day.

O3 Monitor air quality and develop and deliver interventions which address local issues (Page 60)

Enfield has areas that exceed government objectives for nitrogen dioxide and PM₁₀ at busy roadside locations. As a result, we have declared the entire borough an air quality management area and are working towards meeting the government objectives.

The only real way of reducing pollution from traffic is to reduce vehicle numbers and improve the vehicle fleet to the most environmentally-friendly vehicles available.

We monitor, review and assess air quality in Enfield for pollutants known to damage health. Enfield Council is committed to reduce emissions.

O4 Manage growing demand for on-street parking (Page 61)

Demand for travel is increasing as the numbers of residents in Enfield increases. It is estimated that the projected population increase in Enfield will generate additional parking pressure and intensify the parking stress currently experienced. This needs to be effectively managed as there is simply not enough road space to safely and efficiently accommodate everyone who wishes to park or drive in Enfield today or in the future.

O5 Focus on and improve priority locations making them safer for vulnerable road users (Page 62)

Enfield Council is continually looking to reduce the numbers of road traffic casualties that occur on the road network within the borough. We will continue to work with Transport for London (TfL) and other partners to improve road safety delivery through the targeting of investment.

Minimising road danger is a fundamental part of the Enfield Transport Plan (ETP) and is required in order to create streets where everyone feels safe to walk, cycle and use public transport. Action must and will be taken to address speed/speeding, unsafe behaviour, vehicles and infrastructure.

O6 Improve local reliability of and accessibility to the public transport network (Page 63)

The borough is highly dependent on the public transport network. 43% of our employed residents travel to work by public transport.

Improving the accessibility of the public transport system is critical to delivering a better transport experience for all of our residents, including disabled people and growing numbers of older people. We aim to improve accessibility to the public transport network for all people.

At a local level Enfield will work with bus operators and TfL to improve the reliability of services operating in Enfield.

O7 Maintain and improve the transport network in Enfield including developing potential interventions (Page 64)

The condition of Enfield's roads and pavements has been consistently identified by residents as a particularly important issue, and their maintenance continues to be a priority for the Council.

Everyone who travels in Enfield is affected by the condition of the highway network at some stage of their journey.

Via our Highway Asset Management Plan we will continue our ongoing programmes of carriageway, footway and street lighting maintenance; enforcement activities to deal with unauthorised signs, highway obstructions and graffiti, as resources permit.

The Council will continue its programme of decluttering aimed at rationalising street furniture and signs in our town centres and local shopping parades.

In terms of personal security, we intend to continue our established street lighting programme and deliver many schemes to improve lighting.

Improving the quality of the road network, including the footways, is critical to ensuring the highway network in Enfield is safe, efficient and conducive to smoothing traffic flows.

We will coordinate streetworks activities on the highway network to improve reliability.

1.3 Delivering change

To deliver the transport plan we have developed a three-year Programme of investment by reviewing current trends and challenges and then considering the goals and challenges of the Mayor's Transport Strategy, Sub Regional Transport Plans (SRTPs) and other relevant transport objectives. This includes our plans for physical improvements to our roads and public spaces as well as educational and promotional activities.

1.4 How we will measure our progress

Monitoring is an essential element of the Transport Plan and the LIP process. Delivery indicators are set by TfL but monitored by the boroughs. Enfield is required to collect this information and submit it to TfL on an annual basis. The delivery indicators provide a reference for the delivery of the Mayors Transport Strategy at a local level.

It is recognised that individual boroughs will contribute to the Mayor's aspirations in different ways and the monitoring of strategic data is essential to measure the success of progress throughout the plan period. The monitoring process will consist of two parts:

- Outcome Indicators - Boroughs are required to set targets against the overarching mode share aim and outcome indicators set out in the Mayor's Transport Strategy.
- Delivery Indicators - are set by TfL, but monitored by the boroughs.

2 Introduction to Enfield's Transport Plan

2.1 What is the Transport Plan?

The Enfield Transport Plan (ETP) sets out how we will improve travel to, within and from the borough and contribute to the wider economic, social and environmental objectives of the Council. It is firmly grounded in evidence and analysis of local challenges and issues. The ETP sets out our medium-term goals and transport objectives for the borough (up to 5 years to 2024), a three-year programme of investment (from 2019/20 to 2021/22) and includes targets and outcomes to show how we are delivering the ETP. The plan also includes support for more strategic long-term objectives covering the period 2019 to 2040 and beyond, such as the delivery of Crossrail 2.

The ETP forms the basis for Enfield's third Local Implementation Plan (LIP), 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 Strategy (MTS) in their area. Enfield's Transport Plan provides a clear focus on delivering the MTS vision and priorities, while remaining locally relevant.

The ETP acknowledges the importance of partnership working between Enfield, neighbouring boroughs, TfL, the Mayor and key strategic partners in delivering shared objectives. This includes recognising each other's roles and responsibilities whilst being mindful of the need to focus resources on delivering what London needs.

Enfield has Highway Authority powers, and plays a crucial part in managing and operating London's roads. In fact, 95% of the entire London road network is under the control of the 33 London boroughs. We are also responsible for planning, parking controls, education, leisure and other activities that impact on transport, whilst also providing a level of third-party funding for transport schemes. Within the MTS, several policy goals can only be achieved with substantial borough-level intervention.

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:

1. 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

2. 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

3. 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. This plan responds to the third MTS, the Sub Regional Transport Plan (north), Enfield's Sustainable Community Strategy and other relevant policies. The ETP will replace the borough's second LIP (2011). The third round of LIPs will become effective from April 2019.

The ETP does not set out new 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 resources we have at our disposal. It also acts as a bridge between existing planning documents and the new Local Plan, which will set out strategic policies and priorities in relation to transport.

The detailed actions of our key programmes and proposals are to be set out in a series of associated documents which will outline how our ambitions will be achieved. These are likely to address topics including:

- Parking
- Electric Vehicle Charging
- Vision Zero
- Sustainable Transport
- Cycling and Walking

2.2 What are we trying to achieve?

The plan identifies how we will address existing and new challenges in line with our aim of achieving a sustainable future for the Borough. The policies, programmes and initiatives within this Plan will help us improve the ease in which we travel in the Borough, encourage sustainable and active travel helping us to manage environmental problems related to congestion, local air quality, reduce our impact on climate change and improve health, safety and accessibility for all in our communities.

The important role of transport in improving health has been recognised and reflected in the ETP. The biggest role of transport in health in Enfield is a positive one; it is the main way that people stay active. This is vital as everyone needs to be physically active every day to prevent a wide range of illnesses including heart disease, stroke, depression, type 2 diabetes and some cancers. These are some of the biggest health challenges in Enfield so transport is central to addressing them.

The health benefits delivered by Enfield's streets go far beyond the physical activity that people get from walking and cycling in the Borough, although this is the biggest benefit and has great potential for health improvements in the future. Increased walking and cycling offers many other advantages including cleaner air, less noise, more connected neighbourhoods, less stress and fear, and fewer road traffic injuries. These issues are all connected, and to deliver the biggest benefits from more walking and cycling we need to ensure our streets invite people to walk and cycle whenever possible.

By building health outcomes into this plan, the ETP is supporting the Corporate Plan objective to build measures into all our strategies and projects that will help improve people's health, as well as supporting the Enfield Health and Wellbeing Board's priority to embed

Health in All Policies (HiAP) across organisations. HiAP is based on the recognition that our greatest health challenges — health inequalities, climate change, and spiralling health and adult social care costs — are highly complex and often linked. Promoting healthy communities requires that we address the social determinants of health, such as transportation, education, access to healthy food, economic opportunities, and more.

2.3 How the Transport Plan was developed?

Enfield's Transport Plan has been heavily influenced by the goals and challenges contained within the Mayor's Transport Strategy, the Sub Regional Transport Plan for north London, the Borough's Sustainable Community Strategy, the evolving Local Plan and other local policies and strategies. Officers from across the Council have helped to shape the content of the Plan overseen by the Cabinet Member for Environment and in close collaboration with TfL, our neighbouring authorities and key strategic partners.

Enfield's LIP has been produced in accordance with TfL guidance and is fundamentally influenced by the Council's corporate priorities as set out in the 'Council Corporate Plan 2018 - 2022', which aims to deliver for everyone in Enfield over the next four years:

- **Good homes in well-connected neighbourhoods**
 - Continue our pioneering approach to regeneration to create thriving, affordable neighbourhoods and places.
 - Increase the supply of affordable, quality housing options for ownership, social rent and private rent.
 - Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development.
 - Create an enterprising environment for businesses to prosper with world-class digital infrastructure and access to the right skills and networks.
- **Build our local economy to create a thriving place**
 - Work with local businesses and partners to develop a strong and competitive local economy and vibrant town centres that benefit all residents.
 - Support residents to take more responsibility and play a greater role in developing active and safe communities.
 - Enable people to reach their potential through access to high quality schools and learning; and create more opportunities for training and employment.
 - Embrace our diversity, culture and heritage and work on reducing inequalities to make Enfield a place for people to enjoy from childhood to old age.
- **Sustain strong and healthy communities**
 - Protect those most in need by continuing to deliver the services and safeguarding measures they rely on.
 - Work smartly with our partners and other service providers so that as many people as possible are able to live independent and full lives.
 - Build measures into all our strategies and projects that will help improve public health and people's wellbeing.
 - Work with partners to make Enfield a safer place by tackling all types of crime and anti-social behaviour; and protecting the local urban and green environment.

2.4 How consultation has helped develop and shape the Transport Plan

The GLA Act 1999 places a duty on boroughs, when preparing a LIP, to consult with the following organisations:

- The relevant Commissioner or Commissioners of Police for the City of London and the Metropolis
- TfL
- Such organisations representing disabled people as the boroughs consider appropriate
- Other London boroughs whose area is, in the opinion of the council preparing the LIP, likely to be affected by the plan, and
- Any other body or person required to be consulted by the direction of the Mayor

Appendix A contains details of government bodies and other groups consulted, along with a summary of the number of responses received. The Council reviewed all consultation responses received and where necessary changes were made to this document to take account of consultees views.

2.5 Delivering for the needs of the community, considering the environment

To ensure that the ETP has been prepared in an inclusive, reasonable and measured way the Council appointed consultants to undertake an Equalities Impact Assessment (EqIA) and a Strategic Environmental Assessment (SEA).

These assessments ensure that the proposals put forward within this document do not result in harm to the environment, discrimination or unfair treatment of equality groups and promote the health and wellbeing of the community. These documents will be prepared in conjunction with our key stakeholders and target groups.

Strategic Environmental Assessment (SEA)

A SEA was undertaken in order to identify the potential cumulative environmental effects of the various ETP objectives and interventions. A SEA scoping report was initially produced to provide a wide range of consultees information during the early stages in the SEA process.

A full report setting out the outcomes of the SEA on the proposals included in the ETP including the third LIP can be found in a standalone report produced by consultants Temple in association with Steer titled *'Report for – London Borough of Enfield, Transport Plan 2019 and Local Implementation Plan Strategic Environmental Assessment – Environmental Report (December 2019)'* accompanying this document.

The SEA concludes that no significant adverse environmental effects will result from the implementation of the Transport Plan and LIP in Enfield. As such, no specific recommendations for the mitigation of effects are required. At a strategic level all the effects identified are either considered to have no impact or will be positive. At this stage, it is not possible (in some cases) to determine on a scheme by scheme basis the positive or negative effects of individual schemes, because the level of information available at the time of assessment does not allow for a clear judgement to be made

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

- **O1 Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough.** This objective and the associated measures will directly support increases in cycling and walking in the borough. The increase in active travel will have health and environmental benefits and support improvements in the attractiveness of the public realm as well as broadly supporting emissions reduction and energy efficiency.

- **O2 Promote safe, active and sustainable transport to and from schools.** This objective and the associated measures will provide substantial support for improvements in travel to schools which are healthier and environmentally beneficial. The measures will help reduce inequalities and increase inclusivity as well as having health benefits for those walking and cycling to school. They will also provide some support for emissions reduction and energy efficiency.
- **O3 Monitor air quality and develop and deliver interventions which address local issues.** This objective and associated measures will work to support improvements in air quality locally complementing vehicle technological changes to achieve this. The measures will support emissions reduction and overall transport energy efficiency improvements.
- **O4 Manage growing demand for on-street parking.** This objective and the associated measures will support a lessening of reliance on the private car and more car-free environments in the borough with associated environmental and health benefits. These stem from reduced emissions and more attractive streetscape environments which are more conducive to active travel, are safer and more inclusive.
- **O5 Focus on and improve priority locations making them safer for vulnerable road users.** This objective and associated measures will directly support improved road safety and a reduction in road casualties with direct benefits to all though particularly vulnerable users and associated benefits to streetscape environments
- **O6 Improve local reliability of and accessibility to the public transport network.** This objective and associated measures will provide significant improvements in accessibility for public transport users and pedestrians increasing inclusivity and supporting increased uptake of public transport. They will also provide urban realm improvements.
- **O7 Maintain and improve the transport network in Enfield including developing potential interventions.** This objective and the associated measures will provide an enhanced transport network and significantly enhanced streetscape environments with associated environmental (air quality and emission) benefits as well as health benefits.

The SEA also recommended that key indicators from the set compiled by the London Sustainable Development Commission on Quality of Life issues also be used to monitor the environmental effects of the final ETP and LIP.

Equalities Impact Assessment (EqIA)

The London Borough of Enfield is committed to equality in everything we do. This involves having due regard to the needs of diverse groups when preparing new policies. This is in order to:

- eliminate discrimination
- advance equality of opportunity and access
- foster good relations between different groups in the community

All of this is with due consideration to the full range of 'protected characteristics' as identified in the Equality Act 2010, which are:

- race
- disability
- gender
- age
- religion or belief
- sexual orientation
- gender reassignment
- pregnancy and maternity
- marriage and civil partnership (eliminating discrimination only)

In developing our objectives/proposals we also have had regard to TFL's equality objectives specifically the commitment to:

- Provide accessible transport services and a consistent customer service that meets the needs of all customers
- Ensure access to London's transport infrastructure so that more people can make the most of life in the Capital
- Provide safe travel in London so that fewer young people, women and people from BAME communities are deterred from travelling because of safety concerns
- A transport system that promotes and improves the health of all Londoners
- Engage with more of London's diverse communities to effectively inform, develop and deliver our strategies, services and programmes

Given the scale of the Enfield TP and associated funding, it requires the preparation of an Equality Impact Assessment (EqIA). The aim of the EqIA is to look at how the ETP is being delivered or being proposed to be delivered and it identify whether it can or does have any negative impact on any groups or communities. If an impact is identified, the EqIA looks at ways in which it can be avoided or minimised.

The EqIA examined the proposed strategy, socio-demographic data gathered in relation to the LIP and the available information on the outcomes of the policies. Based on this, and using professional judgement, it identified several disproportionate impacts that may occur on Equalities Groups because of the implementation of the proposed strategy.

The key beneficial impacts relate to:

- Measures to encourage active travel, particularly to and from schools, will benefit people in many of the protected groups. The health benefits to many older and/or disabled people with respiratory illnesses will be greater than for the general population. Similarly, children and young people are particularly vulnerable to air pollution as their respiratory systems are still developing, and therefore also will benefit disproportionately. The health benefits for children from greater participation in active travel also will be greater than for the general population.
- Actions to improve air quality are likely to benefit older and/or disabled people with respiratory illnesses more than for the general population. Similarly, children and young people also will benefit disproportionately.
- Managing growing demand for on-street parking may benefit some of the protected groups, especially where they are afforded greater priority in parking allocations.
- Older people, children and disabled people are more vulnerable road users, and will disproportionately benefit from improvements in road safety.

- Policies to improve the reliability and accessibility of public transport will benefit protected groups with a greater reliance on public transport than the public at large to a disproportionate extent.

The EqIA identified that there may be an adverse impact on people on lower income due to increases in parking charges as part of policies to manage on-street parking. This will need to be assessed further to understand the actual impact (including whether proposed charges are significant in terms of the overall running costs of a private car), particularly given that low income groups are less likely to own a car, with any potential mitigation balanced against the wider aims of the LIP3 including the intention to reduce health inequalities. It should be noted that in drafting the ETP and LIP3, reducing inequality has been at the core with a focus on health outcomes.

The full EqIA report is contained in **Appendix B**.

2.6 Local approval process

Elected Members (Councillors) provided guidance to the Council's officers during the development and drafting of this document. Regular discussion and meetings took place with the Cabinet Member for Environment and the final draft ETP was submitted to the Cabinet for their review, comment and approval.

The Cabinet works within the Council's agreed policy framework. The Cabinet provides transparent and accountable political leadership. It is involved in delivering the Council's corporate priorities. All Cabinet Members are accessible to other Councillors and their individual and collective decisions may be subject to scrutiny.

2.7 Mayoral approval

A final version of the ETP, incorporating Enfield LIP3, was submitted to TfL on XX February 2019 and, following their review for compliance with the published guidance, was submitted to the Mayor of London for approval. The Mayor considered that the ETP satisfies the statutory requirements and it was approved on XX March 2019.

2.8 Document structure

The ETP contains:

Section 3: 'Enfield today' provides the context for transport and travel in Enfield. An overview of the Borough supported with evidence and facts.

Section 4: 'Challenges and opportunities' for Enfield details our key challenges and sets out the relevant policy context to which we must respond. This section also details our major regeneration plans and our aspirations for major transport improvement schemes.

Section 5: 'Our strategy for Enfield and Borough transport objectives' sets out our vision and the objectives of our Transport Plan. This section sets out the relationship between local challenges and MTS challenges, how meeting these will satisfy the MTS vision and priorities. It identifies local objectives that reflect both local and Mayoral priorities.

Section 6: 'Delivering change' sets out how the Borough will achieve its transport objectives. The centrepiece of the Plan is a costed and funded Programme of Investment, covering the period 2019/20 to 2021/22 and reflects the LIP funding settlement under TfL's Business Plan. The Programme of Investment sets out the

measures and projects designed to effect delivery of the borough's TP/LIP objectives and the policies and proposals in the MTS; and

Section 7: 'Performance monitoring' identifies the targets and indicators which will be used to monitor progress against our objectives. This section of the ETP sets out the indicators and targets to be used to assess progress against delivery of TP/LIP objectives and MTS outcomes; it is this that will determine our success or otherwise.

2.9 Glossary of terms and abbreviations

A glossary of the terms and abbreviations used in this document can be found at **Appendix C**.

3 Enfield today

Section 3 paints a picture of the Borough, it discusses the areas profile, our community and Enfield as a place. This evidence-based section of the ETP sets out the Boroughs characteristics.

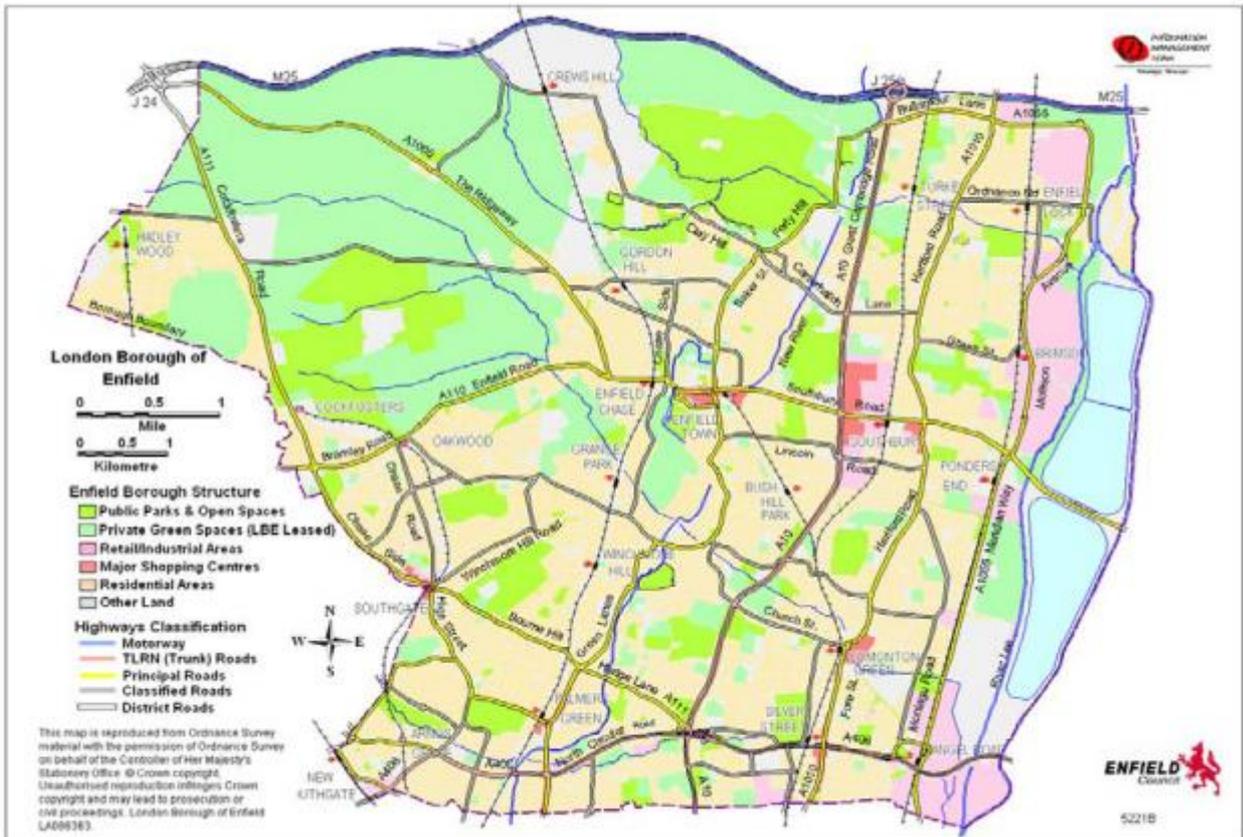
3.1 Enfield's profile

The London Borough of Enfield covers 82.2 square kilometres (31.7 square miles) of London's northern suburbs. Traditionally, Enfield has combined leafy suburbs within easy reach of central London which is only 19.3km (12mi) away.

The borough's public highway network comprises of approximately 68km (42.3mi) of principal roads, 37km (23mi) of Transport for London Road Network (TLRN), 51km (31.7mi) of non- principal classified roads and 466km (289.6mi) of unclassified roads.

Enfield has good links to the national motorway system, the north of the Borough being bounded by the M25, accessed at junctions 24 and 25. It also has two trunk roads – the A10 (London to Cambridge) and A406 (London's North Circular Road). These are supplemented by several A-roads that are key connectors in the Borough including the A1055 Bullsmoor Road / Mollison Avenue / Meridian Way (north-south link), the A1010 Hertford Road (north-south link), and the A110 (east-west link).

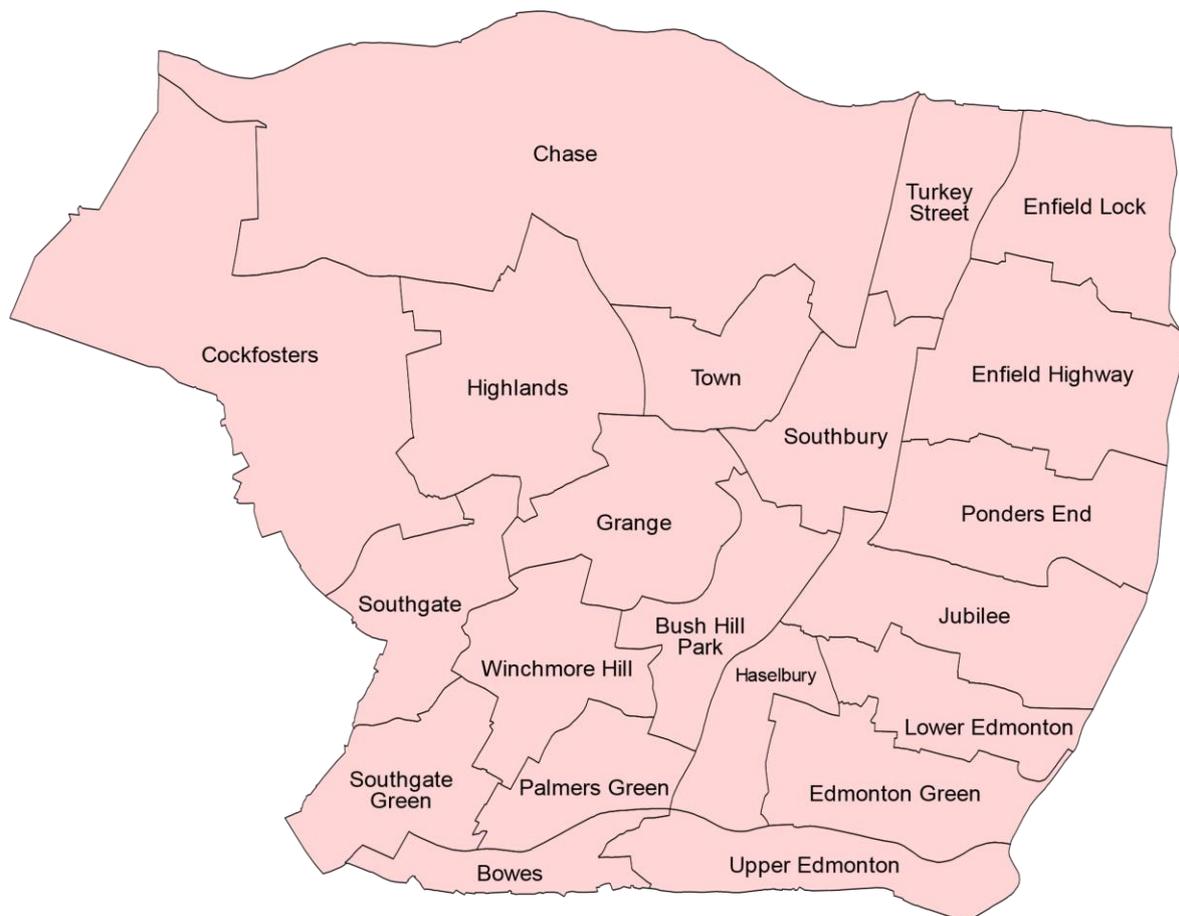
Five train lines pass through the Borough, including the Piccadilly (Underground) Line connecting to Heathrow Airport. The other direct connections are in to London Kings Cross, Moorgate and Liverpool Street, outward to Welwyn Garden City, Letchworth, Stevenage, Hertford North, Hertford East, Stansted Airport and Cambridge.



Enfield borders the London Boroughs of Barnet, Haringey and Waltham Forest, Epping Forest District Council in Essex and Hertsmere, Welwyn Hatfield and Broxbourne districts in Hertfordshire. The Borough can be approximately split into thirds, housing occupies one-third, another third is Green Belt, mainly farming, country parks and horticulture. The rest includes commerce, industry, shops and transport - although much is open land used as parks, sports fields, golf courses, allotments and back gardens; and there are more waterways in Enfield than in any other London borough.

Enfield is the name of the local authority although parts of the area it covers share that name to. There are 21 wards in Enfield:

London Borough of Enfield Ward Map, 2002-present



The main town centres in the Borough are: Enfield Town, Edmonton Green, Angel Edmonton, Palmers Green and Southgate. Enfield town centre is the main shopping centre in the Borough and Edmonton Green, Angel Edmonton, Palmers Green and Southgate are district centres at the next level in the hierarchy. In addition, there are also several local centres (predominantly linear in layout) distributed throughout the Borough. The larger local centres are: Cockfosters, Green Lanes, Enfield Highway, Ponders End, Enfield Wash and Winchmore Hill. There are also out-of-centre retail parks located throughout the Borough providing important shopping facilities for residents in the Borough and North London more generally.

Enfield Town is the largest town centre in Enfield and a key shopping destination for the Borough with the Palace Exchange and Palace Gardens Shopping Centres containing high street chains, three supermarkets (including a Superstore), and a market operating on Thursdays, Fridays and Saturdays in the historic market square. In addition, it is a key transport hub with two rail stations (Enfield Town and Enfield Chase).

Edmonton Green is in the south east of the Borough and is Enfield's second largest town centre. The area was mentioned in the Domesday Book and the main Roman Road between London and Lincoln and York passed directly through. The area is densely built and contains a large amount of affordable housing, along with significant shopping, community and leisure opportunities. Edmonton Green is also a significant public transport interchange with rail and bus stations providing connections across Enfield and to Central London. Edmonton Green rail station is the busiest in Enfield.

Some areas in the east of the Borough fall within the Upper Lee Valley Opportunity Area, as recognised in The London Plan, the regional spatial planning strategy. At over 3,000 hectares, the Upper Lee Valley Opportunity Area represents by far the largest Opportunity Area in The London Plan.

The Upper Lee Valley covers areas in the London boroughs of Enfield, Haringey, Waltham Forest and Hackney. Within Enfield the Upper Lee Valley Opportunity Area contains a wealth of existing assets, such as the Lee Valley Regional Park, established residential communities and a large concentration of industrial land. With connections into central London via the A10 / A1010 corridor and the West Anglia Main Line.

The aim for the area is to achieve significant growth optimising development and redevelopment opportunities with delivery of over 15,000 new jobs and 20,100 new well-designed homes by 2031. Enfield is recognised as a growth area of national importance.

3.2 Our community

The Office for National Statistics (ONS) 2016 mid-year estimate predicts the population in Enfield to be 331,395 people.

One of the most striking demographic characteristics of Enfield is its rich ethnic diversity. The 2011 Census indicates that it is among the most ethnically diverse areas in the country:

Table 3.1 – Ethnic group, Enfield

Ethnicity	%
White British	40.5%
White Irish	2.2%
White Gypsy or Irish Traveller	0.1%
Other White	18.2%
White & Black Caribbean	1.6%
White & Black African	0.8%
White & Asian	1.3%
Other Mixed	1.8%
Indian	3.7%
Pakistani	0.8%
Bangladeshi	1.8%
Chinese	0.8%

Other Asian	4.0%
Black African	9.0%
Black Caribbean	5.5%
Other Black	2.6%
Arab	0.6%
Other	4.5%

Source: 2011 Census: Ethnic group, local authorities in England and Wales, ONS (2012).

The latest age profile from the ONS 2016 Mid-Year Trend based projections has been used to calculate the child, working age and older population results by gender that are contained in the below table.

Table 3.2 – Child, working age and older population results by gender, Enfield

Age Band	Male	% of Male	Female	% of Female	Total Persons
0-15	38,777	23.97%	36,560	21.56%	75,337
16-64	104,207	64.41%	109,295	64.44%	213,502
65+	18,814	11.63%	23,742	14.00%	42,556
All ages	161,798	100%	169,597	100%	331,395

3.3 Housing and services

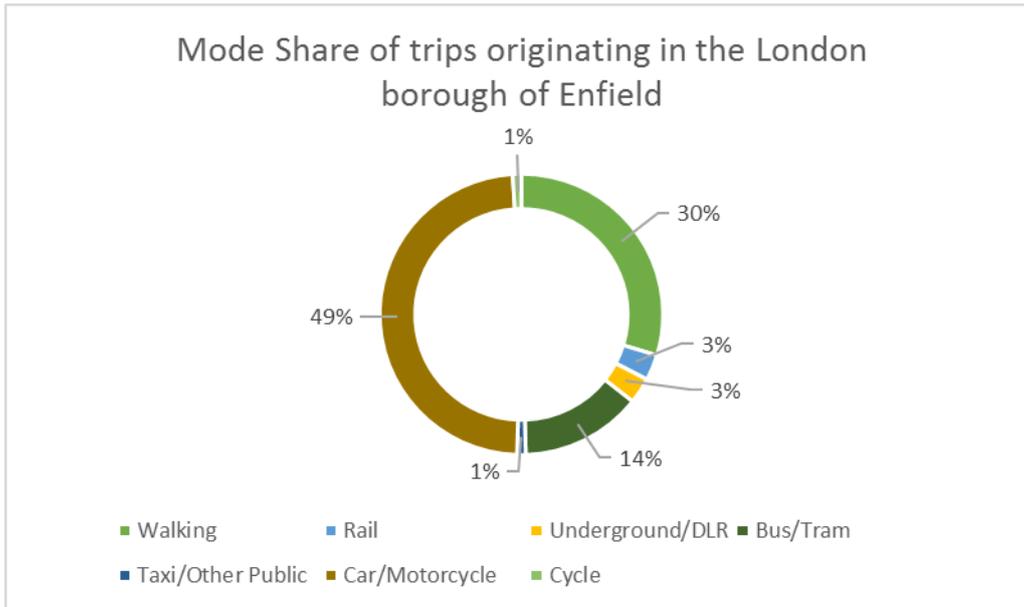
The Borough has some 123,800 dwellings (Department for Communities and Local Government, 2015 estimate) approximately 77,600 houses and 46,200 flats.

There are 70 primary schools, 20 secondary schools, 6 SEN schools, 6 independent schools and 3 further education colleges in the borough. Enfield has 48 GP surgeries and 2 hospitals, Chase Farm and North Middlesex University Hospital. Although there are 2 hospitals in the Borough, hospital services vary and residents within the Borough are often referred to other hospitals outside of the Borough depending on the treatment they require. Residents are often referred to Barnet General Hospital, located in a neighbouring authority to the west of Enfield. There are 6 leisure centres operated in partnership with the local authority, 17 libraries, and 2,000 hectares of parks across the Borough.

3.4 Travel in Enfield

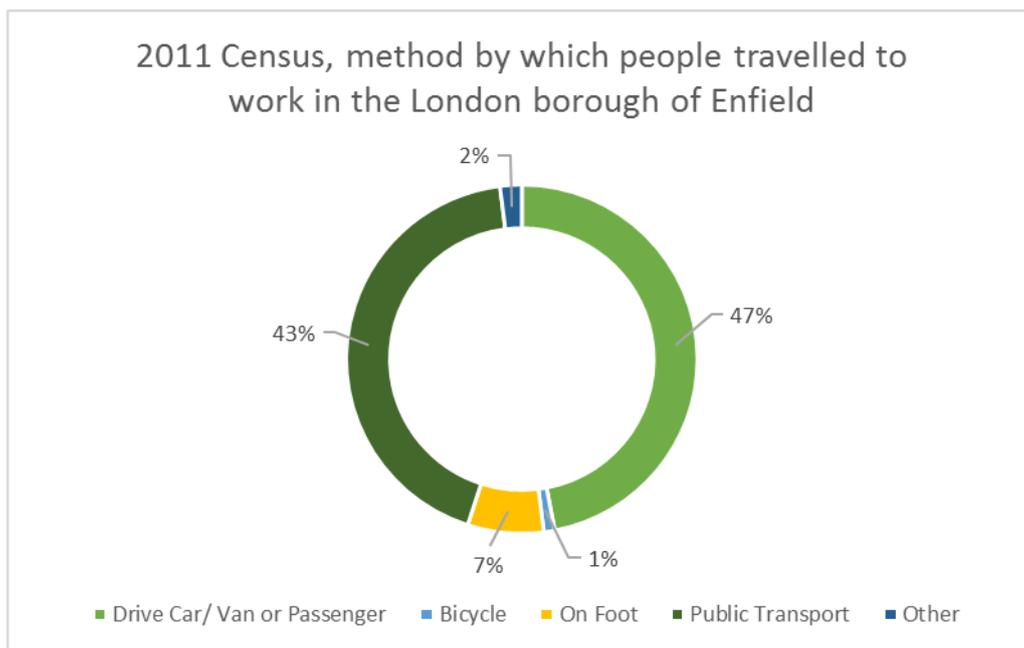
People need to travel as part of their daily lives. We can approximately calculate the number of trips that take place in Enfield on a daily basis. According to the most recent (2015/16) London Travel Demand Survey there was an 'All' modes trip rate of 2.28 trips per person per day in outer London. When you multiply this trip rate and the Office for National Statistics (ONS) 2016 mid-year population estimate for Enfield (331,395 people), we can predict that over 755,500 trips are made per day within the London borough of Enfield. There are many reasons to travel; to work, to attend school or education, for shopping, for leisure purposes, or perhaps just to visit family and friends. The figure below shows the mode share of trips originating in Enfield.

Figure 3.1 – Mode Share of trips originating in Enfield



Source: TfL borough factsheet (July 2017)

Figure 3.2 – Method by which people travelled to work in the London Borough of Enfield



There are four London Underground stations in the borough of which one (Oakwood) offers full step-free access, with another (Cockfosters) subject to a step-free scheme. Southgate was the busiest station in 2016 as it had been in previous years, followed by Arnos Grove, Cockfosters was the least busy station in the borough as it had been in previous years.

Table 3.3 – Entry & exit by underground station in Enfield

Station	Step-free	2016 Number of Entry & Exit
Southgate	No	5,650,000
Arnos Grove	No	4,650,000
Oakwood	Yes	2,880,000
Cockfosters	No	2,040,000

There are 18 rail stations in the borough, of which Edmonton Green was the busiest in 2017/18. There were eight stations with over a million entries and exits. All of the busiest stations had seen increased passenger numbers over the previous year. The below table provides station names, rail operator details and estimates of the number of people who entered and exited the station in 2017/2018:

Station Name	Station Operator	Step-free	2017/2018 Number of Entry & Exit
Angel Road	East Anglia	No	32,938
Brimmsdown	East Anglia	Yes	969,748
Bush Hill Park	London Overground	Yes	1,096,704
Crews Hill	Govia Thameslink Railway	No	141,186
Edmonton Green	London Overground	Yes	3,637,936
Enfield Chase	Govia Thameslink Railway	No	1,643,174
Enfield Lock	East Anglia	Yes	1,312,134
Enfield Town	London Overground	Yes	2,299,054
Gordon Hill	Govia Thameslink Railway	No	1,467,448
Grange Park	Govia Thameslink Railway	No	428,314
Hadley Wood	Govia Thameslink Railway	Yes	401,474
New Southgate	Govia Thameslink Railway	No	843,348
Palmers Green	Govia Thameslink Railway	No	2,013,692
Ponders End	East Anglia	Yes	563,972
Silver Street	London Overground	No	1,687,536
Southbury	London Overground	No	985,176
Turkey Street	London Overground	No	966,602
Winchmore Hill	Govia Thameslink Railway	No	1,801,460

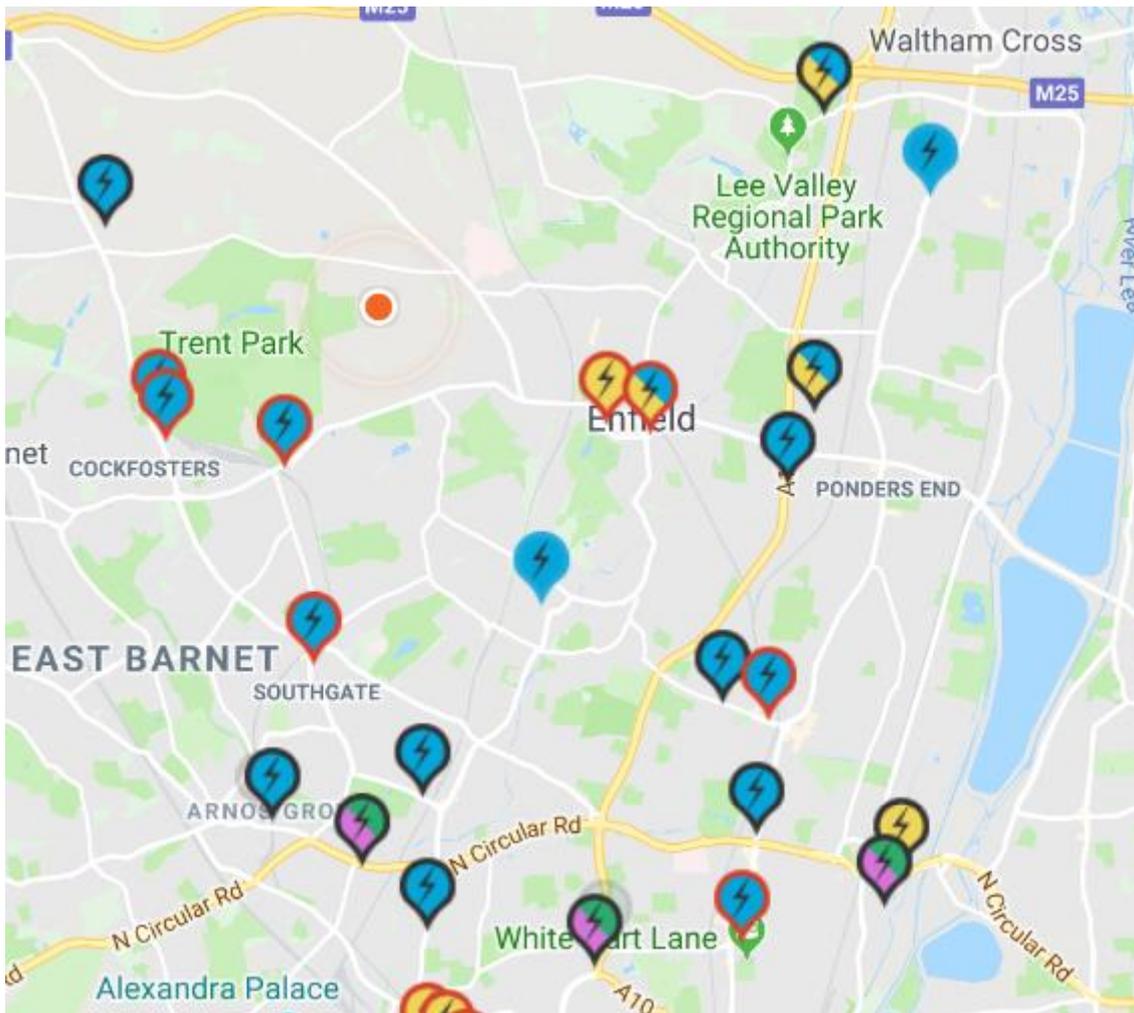
Source: Office of Rail and Road <http://orr.gov.uk/statistics/published-stats/station-usage-estimates>

The majority of rail stations within the Borough are not fully accessible, with only 7 of 18 stations having step-free access.

Enfield is served by a network of 38 day bus routes, 7 school-day only services and 8 night bus routes, connecting the borough by bus with Central London and the surrounding boroughs as well as neighbouring counties.

The importance of buses is reflected in the fact that 21% of trips in London in 2013 were made by bus. In Enfield, the 2011 Census data showed that 14% of trips to work alone were made by bus.

Currently there is one car club operator (Zipcar) and 8 bays in the borough. There are several electric vehicle charging points throughout the borough, as can be seen from the below map:



Source: www.zap-map.com

3.5 Environment

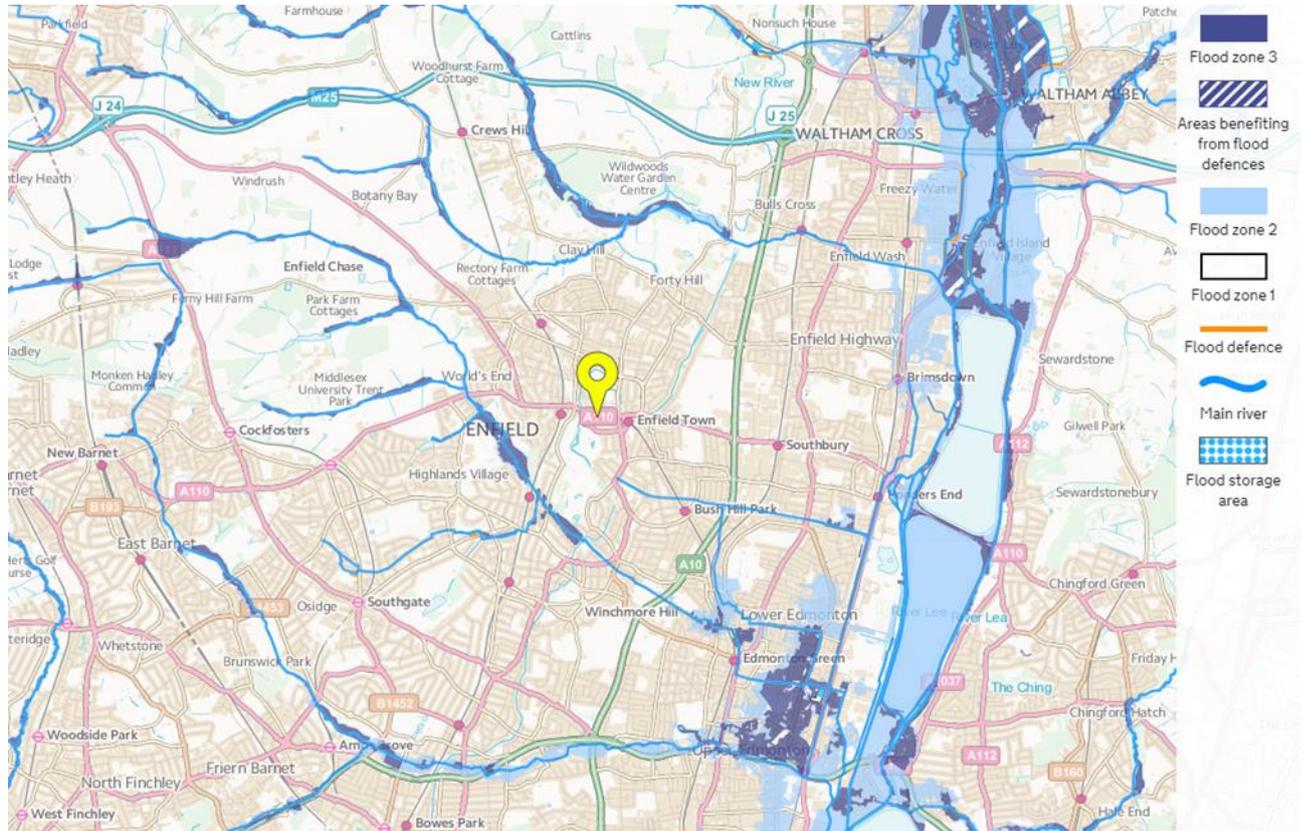
About 40% of the Borough's area is designated Green Belt and there are many sizeable parks within the built-up area. Enfield also has 10 sites across the Borough that have been protected in partnership with Fields in Trust to ensure their long-term survival as publicly accessible open spaces. The Fields in Trust sites are Enfield Playing Fields, North Enfield, Albany, Aldersbrook, Tatem, Delhi Road Open Space, Jubilee, Ponders End, Craig Park and St Georges Fields.

The designated green belt area, is a major attraction of the Borough. In addition, Enfield has a diverse network of open land. Despite its green appearance, parts of the Borough, particularly in the south and east are deficient in access to some types of open spaces such as parks, allotments or children's play spaces. The Lee Valley Regional Park lies next to some of our most deprived communities but is cut off from residential areas by major roads, railway lines and industrial areas. Industrial premises, scrap yards and waste facilities, major roads, railway and power lines impact on the quality of the living environment in the Lee Valley.

There are more waterways in Enfield than in any other London borough, over 100km (62mi) of rivers and waterways. Pymmes Brook, Salmons Brook, Turkey Brook and their tributaries create a network which flows across the Borough to join the River Lee. The Borough also contains the New River and the two large reservoirs, the King George's and William Girling.

As there are so many waterways in Enfield there is a risk of flooding in certain areas, mainly in areas within close proximity to waterways. Parts of the Borough lie within the Environment Agency's Flood Zones 2 and 3 with a medium to high probability of flooding. The management of flood risk is critical to planning for Enfield's future. The flood risk zones in the London Borough of Enfield are illustrated in Figure 3.3. They are principally in the east of the borough, associated with the natural and man-made waterways in the Lee Valley.

Figure 3.3 – Flood Risk Areas in the London Borough of Enfield



Source: The Environment Agency

3.6 Enfield as a place

Enfield has much to offer - our cultural diversity, heritage, relative proximity to Central London and to open countryside make it a good place to live, work, study and do business. Enfield is growing and changing, our population and diversity is increasing but so too is the gap between the prosperous and deprived neighbourhoods of the Borough. This represents one of the greatest challenges we face, supporting people and providing the infrastructure to support this change. It is imperative that we consider the needs of those who live, work, visit or study in Enfield currently and those that will do so in the future.

4 Challenges and opportunities

This section of the ETP identifies which problems, challenges and opportunities are most important to Enfield and can be addressed within the timescale of the LIP and are within the context of local priorities. It sets out the relevant policy context to which we must respond. This section also details our current regeneration plans and aspirations for major transport improvement schemes.

The below diagram shows eight fundamental challenges faced by the borough:

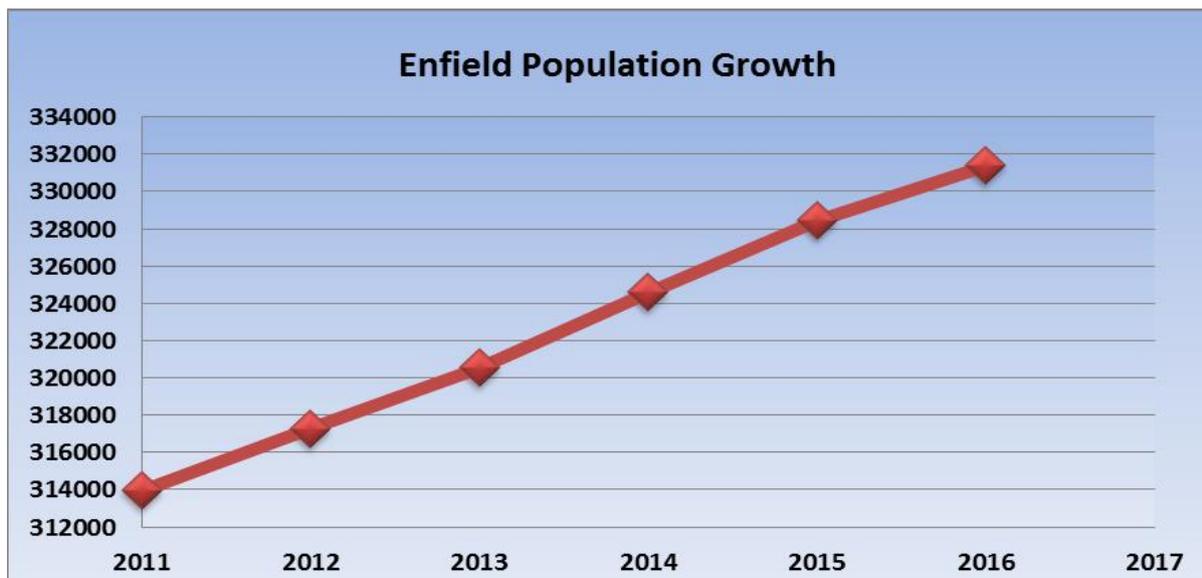


This chapter considers Borough-specific problems, pressures, challenges and opportunities and considers their compatibility against the outcomes sought in the MTS. Opportunities are identified for shifting trips and journey stages to walking, cycling and public transport.

4.1 Population and demographics

The population in Enfield was recorded as 274,000 people in the 2001 Census. At the next Census undertaken in 2011, the figure was up to 313,000 people, an increase of 14% over a 10-year period. Population growth has been faster than expected, placing greater demand on the transport network. This growth is expected to continue with the Office for National Statistics (ONS) 2016 mid-year estimate up a further 5.5% from 2011 to 331,395 people. This makes Enfield the 5th most populous amongst the 33 London boroughs, having been overtaken by Newham in 2015. Various forecasts carried out by the ONS, Department for Communities and Local Government and the Greater London Authority, forecast that population growth in Enfield over the next 15 years could exceed 400,000; an increase of 29% from 2011.

The graph below shows Enfield's population growth from 2011-2016.



© ONS 2016 Midyear Estimates

The 2011 census shows that the population has changed significantly from the prior census ten years previous. The 'stand out' changes over this 10 year period are substantial increases in the White Other White, Black African and Other Any other groups, while the White British share fell from 61.2% at 2001 to 40.5% at 2011.

Enfield's population is diverse and is undergoing a rapid demographic change. Current Council estimates (2016) show that more than 64% of the population belong to black and minority ethnic communities, up 5% on the 2011 Census figures.

Enfield's age profile is proportionately distributed between the sexes but, compared to the rest of London averages it has a higher number of children and young people aged 0-15. The Borough has a large population of children and young people (23%) compared to the rest of London (14%).

A major risk factor for long term health of local children is the continuing trend of excess weight. It is well documented that being overweight or obese increases the risk of a number of health conditions, such as cardiovascular disease, diabetes, stroke and certain cancers.

Obesity in childhood is a global and national cause for concern. Data from Public Health England's annual National Child Measurement Programme for the school years 2014/15 – 2016/17 shows that in Enfield:

- 24.2% of Reception age children and 41.5% of Year 6 children are either overweight or obese.
- These percentages are significantly higher than both the London average (22.2% for Reception children, 37.9% for Year 6) and the average for England (22.2% and 33.8%).

There is no robust local information on adult BMI in Enfield, however the Active Lives Survey (2016) estimated that 61.4% of adults (approximately 152,040 adults) in Enfield are overweight or obese. This is similar to England (61.3%) and significantly higher than London (55.2%).

Without intervention, it is estimated that about 75% of men and women in the UK will be overweight or obese by 2030¹. It's likely that the prevalence of overweight and obesity in Enfield will increase in line with national predictions.

In general, lifestyle factors are those things that can impact our health that we can control. What and how we eat, if we smoke, whether or not (and how much) we drink, and whether or not (and how much) we exercise are all lifestyle factors that impact our health.

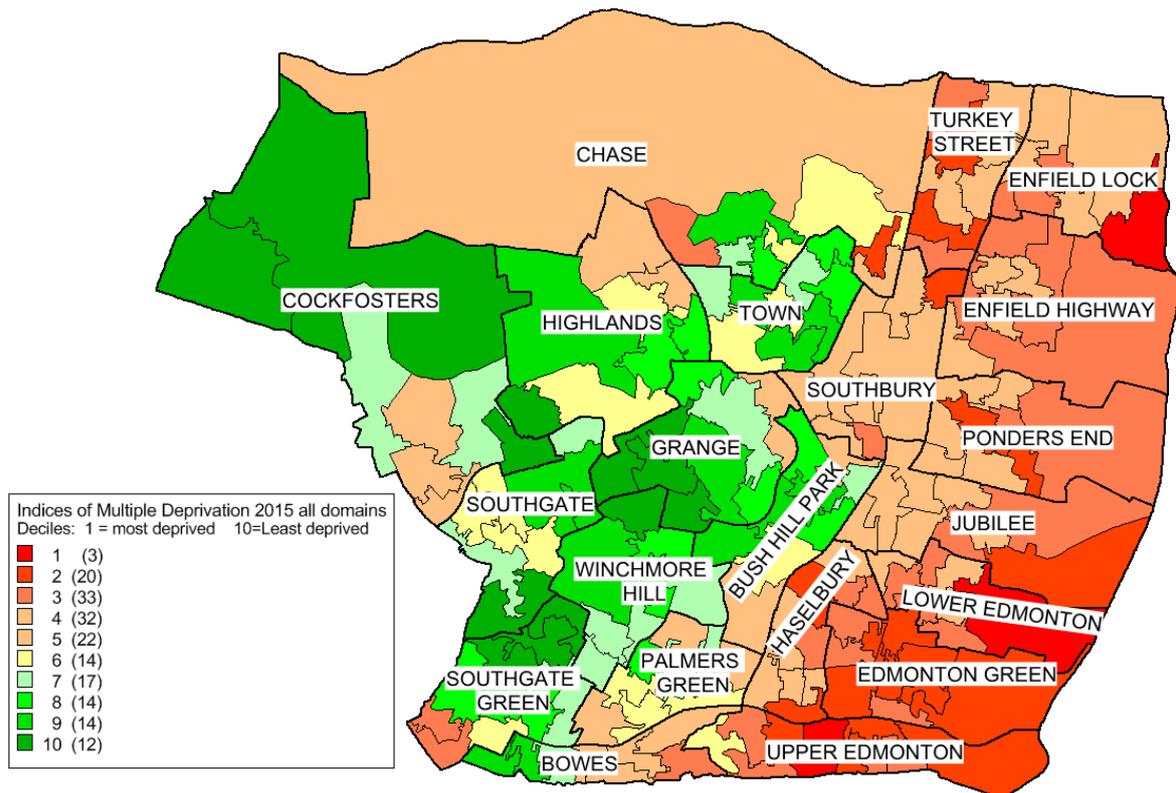
The 2011 Census figures indicated that 15.3% of people living in the Borough said they had an illness, health problem or disability which lasted, or is expected to last, at least 12 months.

Subsequent estimates are produced by applying the rates of disability by age to the latest population projections. This results in a total disabled population at mid-2016 of 51,342 people, 15.5% of Enfield's population.

When reviewing the 2011 census data, considering economic activity, Enfield had a high proportion of people who were economically inactive (not working and not seeking work) compared with the London region. Although the majority of these were retired, students, long term sick or looking after the home, there was also a significant proportion who were economically inactive for another reason. Combining these others with the number of adults who were unemployed at the time produces a total of about 22,000 people (9.8% of all 16 to 74 year olds) this was the 6th highest rate in London.

Enfield is one of the most deprived Outer London boroughs. Enfield is now the 12th most deprived London borough, whereas it was 14th in 2010. The Borough's overall ranking in the 2015 Indices of Multiple Deprivation remained unchanged from 2010 at 64th most deprived out of 326 English local authorities. The map below shows the locations of the most and least deprived Lower Super Output Areas (LSOAs) in Enfield. Dark red areas are those with the greatest deprivation levels.

¹ European Society of Cardiology (2014), Adult obesity predicted in almost all European countries by 2030.



The northeast, east and southeast of the Borough fare significantly worse than the rest of Enfield, with some neighbourhoods amongst the most deprived in Britain.

Enfield has a low overall crime rate when compared to neighbouring boroughs and London as a whole, with 58.5 reported crimes per 1,000 population recorded in 2016/17; the figures for Barnet, Haringey and Waltham Forest were 55.8, 85.8 and 64.9 respectively; the average figure for London was 76.1. Government Office statistics also indicate that the level of recorded crime in the Borough has continued to drop, from 86.7 offences per 1,000 population in 2007/08 to the most recent figure of 58.5, decreasing year on year over the 10 year period.

In Enfield, the three most common types of recorded crime were Theft and Handling, Violence against the Person (excluding sexual offences) and Burglary.

Data from the police shows that there were 7,255 calls concerning Anti-social Behaviour (ASB) logged in the period 2015/2016 – an increase of 1.7% from 2014/15 (7,134 calls). Of the main types of ASB logged, the most common complaints concerned street drinking, drugs and rowdy youths. ASB can lead to residents feeling unsafe when out alone after dark and be a barrier which deters people from travelling by sustainable modes such as walking, cycling or using public transport as they feel more vulnerable.

4.2 Transport and Health

The top causes of illness and early death in Londoners are listed in the below table.

Rank	Causes of Illness and Early Death
1	Smoking
2	Obesity
3	High Blood Pressure
4	Type 2 Diabetes

5	Alcohol Use
6	High Cholesterol
7	Kidney Disease
8	Low Physical Activity
9	Drug Use
10	Low Fruit
11	High processed Meat
12	Poor Air Quality (PM)
13	High Salt

Source: Institute for Health Metrics and Evaluation (www.healthdata.org)

Seven of the above listed causes (2, 3, 4, 6, 7, 8 & 12) have links with the way people travel, a lack of physical activity and the emissions generated from the mode of transport that people choose, motorised transport (private car).

Creating an environment where people actively choose to walk and cycle as part of everyday life can have a significant impact on public health and has the potential to reduce health inequalities. It is an essential component of a strategic approach to increasing physical activity and may be more cost-effective than other initiatives that promote exercise, sport and active leisure pursuits.

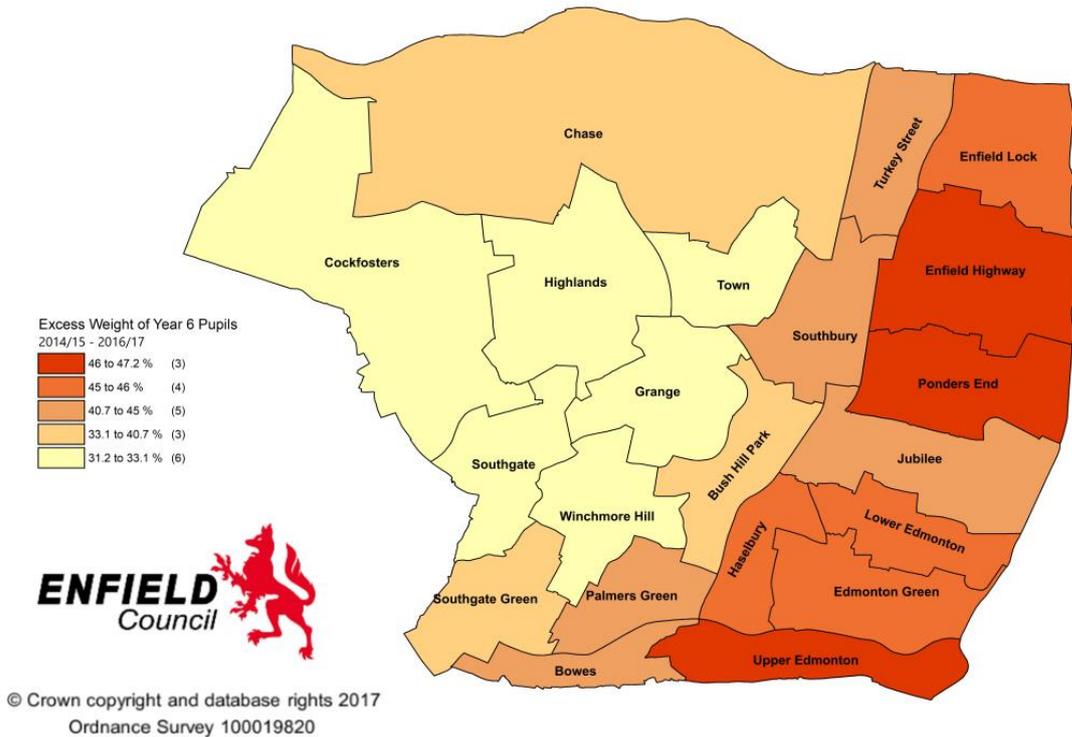
More walking and cycling also has the potential to achieve related policy objectives:

1. Supports local businesses and promotes vibrant town centres
2. Provides a high-quality, appealing public realm
3. Reduces road danger and noise
4. Increases the number of people of all ages out on the streets, making public spaces seem more welcoming and providing opportunities for social interaction and children's play
5. Provides an opportunity for everyone, including people with impairments, to exercise and enjoy the outdoor environment.

Obesity in Enfield:

- Two thirds of adults are overweight or obese
- Two in five, 10 - 11 year olds (41.5%) are overweight or obese
- The level of diabetes is higher in adults with higher BMI (body mass index)

This map shows the percentage of children aged 10 - 11 years old who are overweight or obese across Enfield (by ward). Levels of obesity are highest in the east of the borough. This overlaps with the deprived parts of Enfield.



Source: National Child Measurement Programme 2014/15-2016/17, Public Health England

In Enfield, as in the rest of the UK, we are starting to see cases of Type 2 diabetes in children and young people.

The table below shows the reduced risk of health conditions from being physically active.

Health Condition	Reduced Risk from Being Physically Active
Coronary heart disease and stroke	20 – 35%
Type 2 diabetes	35 – 50%
Colon cancer	30 – 50%
Breast cancer	20%
Hip fracture	36 – 68%
Depression	20 – 30%
Death	20 – 35%
Alzheimer’s disease	40 – 45%

Source: Start active, stay active: a report on physical activity from the four home countries’ Chief Medical Officers (2011), Department of Health.

Increased walking and cycling offers many other advantages including cleaner air, less noise, more connected neighbourhoods, less stress and fear, and fewer road traffic injuries. These issues are all connected and contained in below table.

Source	Main Health Impacts that can be Improved
Physical activity	Obesity

	Heart disease Stroke Depression Type 2 diabetes
Air quality	Cardiovascular disease Respiratory diseases
Road traffic collisions	Physical injuries Psychological trauma
Noise	Mental health Blood pressure Child development
Access and severance	Mental wellbeing Personal resilience Stress Social isolation

4.3 Method of travel and trip purpose

According to the North London Sub-regional Transport Plan report, the car/motorcycle is the most common method of travel, followed by walking. Many of those car trips will also have a walking element. For most, walking is something that is done daily, whether it be walking to the train or bus stop, walking to school, work or to local shops. Although the mode share has improved slightly between 2006 - 2013, with a slight shift to people using more sustainable modes such as walking, cycling and public transport, when you compare Enfield's mode share to that of the sub region of North London as a whole, 7% more people use the car/motorcycle rather than sustainable modes.

The London Travel Demand Survey captures information on the purpose of trips in Outer London. The below table provides weekday trip purpose information for the last 3 years of held data, 2013/2014 - 2015/2016:

Table 4.1 – Weekday trips by purpose

Trip Purpose (weekday)	2013/2014 (%)	2014/2015 (%)	2015/2016 (%)
Commuting	18.8	19.8	20.9
Other work	8.6	8.5	8.1
Education	10.5	10.4	10.7
Shopping and personal business	23.2	23.5	22.4
Leisure	22.3	21.1	21.5
Other (including escort)	16.5	16.6	16.5

For comparative purposes, the below table provides Outer London weekend trip purpose information for the last 3 years of held data, 2013/2014 - 2015/2016:

Table 4.2 – Weekend trips by purpose

Trip Purpose	2013/2014 (%)	2014/2015 (%)	2015/2016 (%)
Commuting	15.5	15.6	16.9
Other work	7.3	7.0	6.8
Education	8.1	8.0	8.3
Shopping and personal business	25.5	25.9	24.4

Leisure	27.5	27.8	28.1
Other (including escort)	16.1	15.8	15.5

The following table from the 2011 census outlines the method by which people travelled to work in the borough and London as a whole:

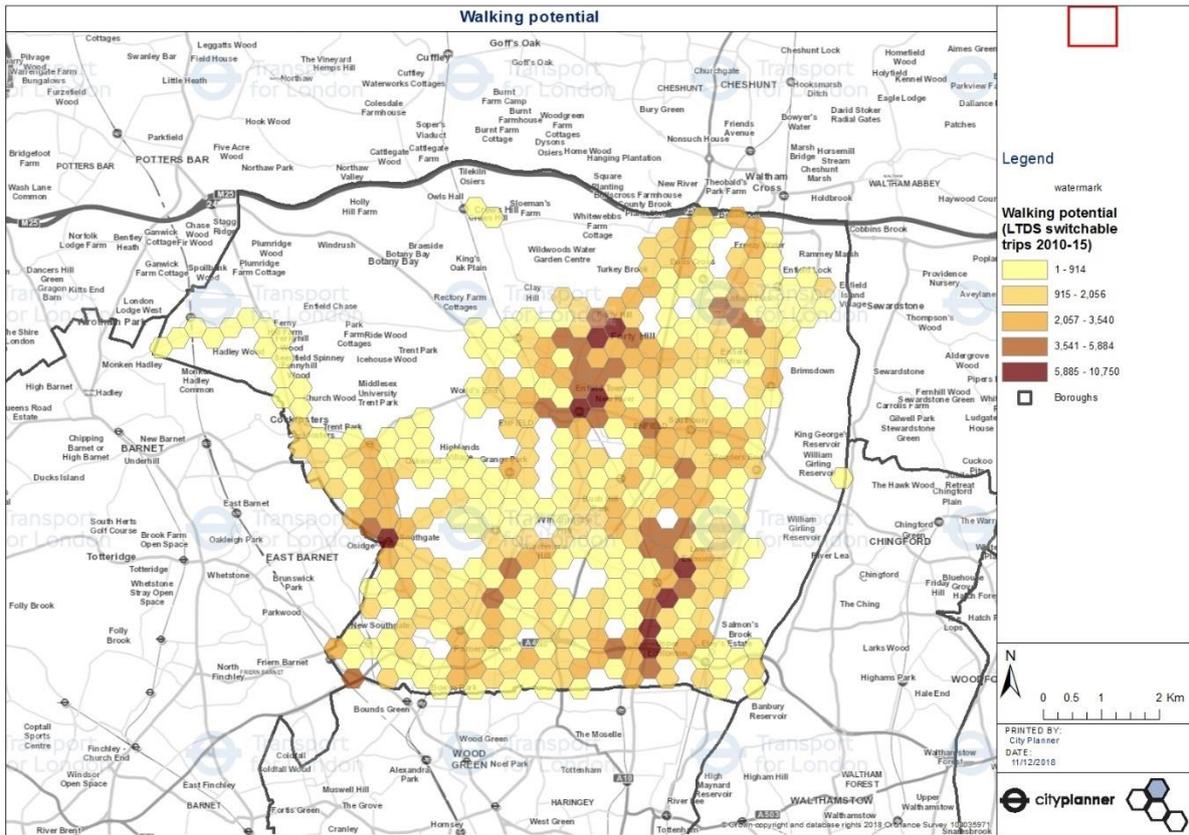
Table 4.3 – Method of travel to work, Enfield and London as a whole

Method of Travel	Enfield	London
Drive Car/Van or Passenger	47%	31%
Bicycle	1%	4%
On Foot	7%	9%
Public Transport	43%	53%
Other	2%	2%

The table shows that there are clear differences between Enfield and London as a whole and whilst there are many factors that need to be considered when interpreting these figures, Enfield still has a disproportionately higher number of people travelling to work by less sustainable means of transport when compared with the rest of the capital. However, the borough has substantial scope for reducing the number of trips made by car given that 30% of existing car journeys originating in the borough are less than 2km (1.2mi) in length and nearly 60% are less than 5km (3.1mi).

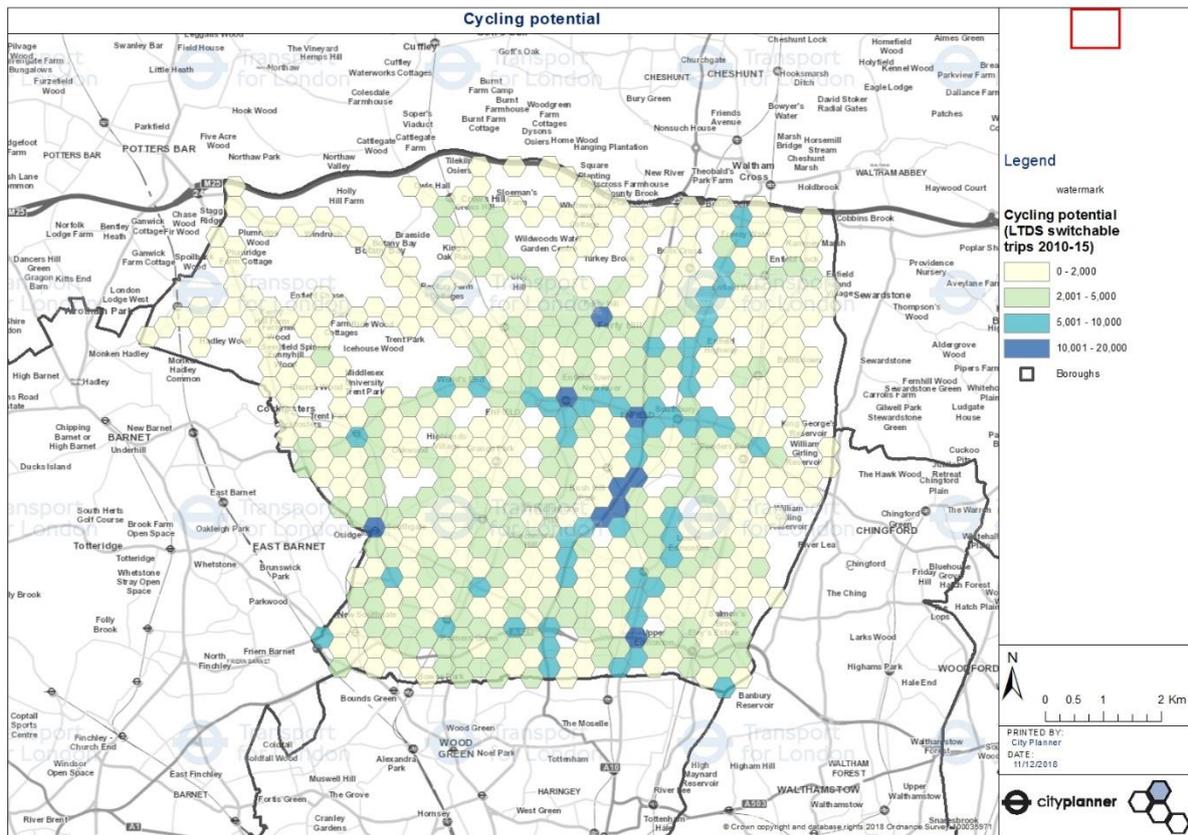
Increasing levels of active travel holds the potential to increase levels of sustainable travel in the borough, and to help avoid health risks associated with inactivity. As demonstrated throughout this document, our intention is to increase the levels of people cycling and walking, amongst other things, this presents an opportunity to contribute to tackling key health problems within the borough, including mental wellbeing and a reduced risk of chronic illnesses such as Type 2 diabetes and cardiovascular disease.

Figure 4.1 – Potential switchable daily trips to walking



Source: TfL City Planner tool

Figure 4.2 – Potential switchable daily trips to cycling



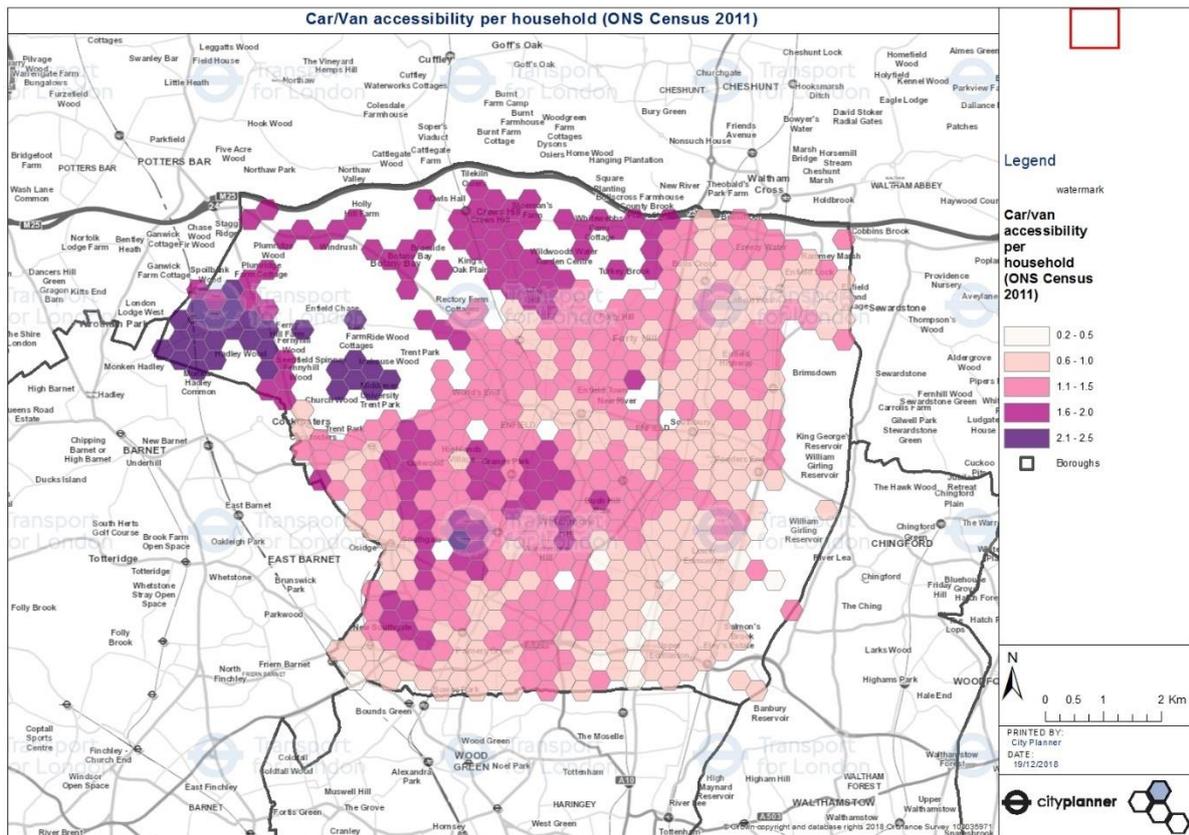
Source: TfL City Planner tool

TfL Analysis of Walking Potential shows significant potential to grow levels of walking within the borough. It is estimated that an additional 93,700 additional trips could be made by foot each day with in the borough, building on the 206,600 walking daily trips estimated to be made in 2013/14. Many of these journeys are focused on trips to town centres, and it is estimated that 7,500 trips a day could be made to Enfield Town, either entirely on foot or as walking as part of a journey stage.

Similarly, TfL Analysis of Cycling Potential estimates that 320,200 trips could be cycled every day in the borough, building on 5,200 recorded in 2015. The areas that hold the most potential for walking and cycling can be seen as detailed above in Figures 4.1 and 4.2.

Local traffic data is collected by the Department for Transport (DfT) based on a number of 'count points' in the Borough. According to their data, there were a total of 843,357 motor vehicle miles travelled in 2015. This was higher than all the 14 preceding years and was around 38,927 miles greater than was travelled in 2014. Motor vehicle miles travelled in the Borough is up, as is the overall number of cars owned per household. 2011 census data shows an overall increase in the number of cars owned per household when compared to 2001 census figures, however, it also shows that the number of households that don't own any cars at all, has also increased by 4%. In Enfield, only 32.5% of households do not own 1 or more cars. This compares to a London average of 41.6% and an inner London average of 56.7%. Growth in the number of vehicles owned within the Borough and the continued growth in the volume of traffic using the network is placing increasing pressure on the available road capacity.

Figure 4.3 – Car/Van accessibility per household (ONS Census 2011)



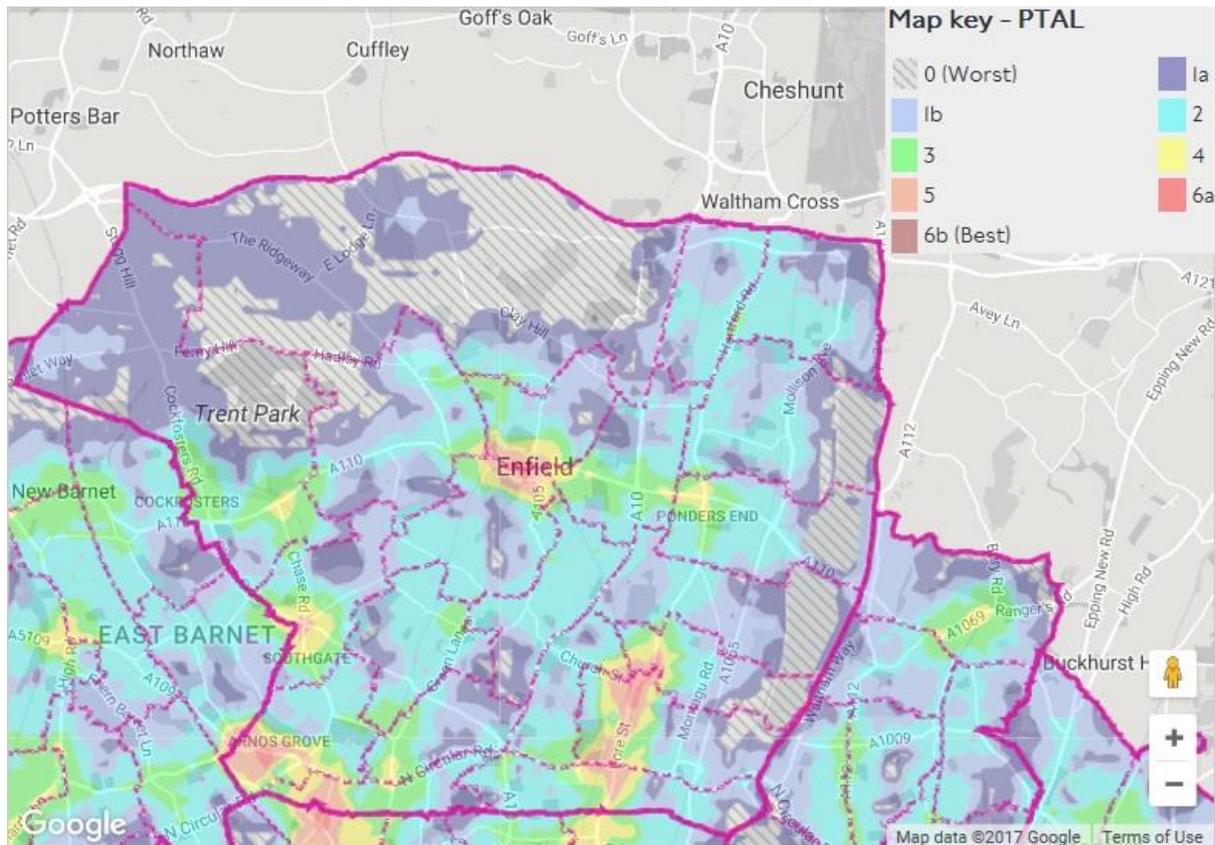
Source: TfL City Planner tool

4.4 Movement and transport infrastructure

This section looks more specifically at and examines the challenges related to movement and transport infrastructure in the borough.

Public transport

Public transport accounts for 20% of travel. The coverage and accessibility of public transport varies significantly across the borough and this is shown on the following map, which details the relative Public Transport Accessibility Levels (PTALs) for Enfield. PTALs are a method of assessment utilised by TfL and most London boroughs to produce a consistent London wide public transport access mapping facility. PTALs assess the level of service, walk and wait times to produce indices of accessibility to the public transport network.



Source: TfL WebCAT Planning Tool

The lower levels of accessibility are centred on Chase and the northern part of Cockfosters wards, both consisting largely of green spaces with low residential densities in large parts. The other areas shown to have a very poor PTAL rating are those around the two large reservoirs, the King George's and William Girling and the surrounding associated open space. The map shows a pattern of very low public transport accessibility, reflected in a particularly low PTAL index across the whole borough, other than good PTAL values around a few town centres and transport hubs. This means that people are not being encouraged to shift away from private car use.

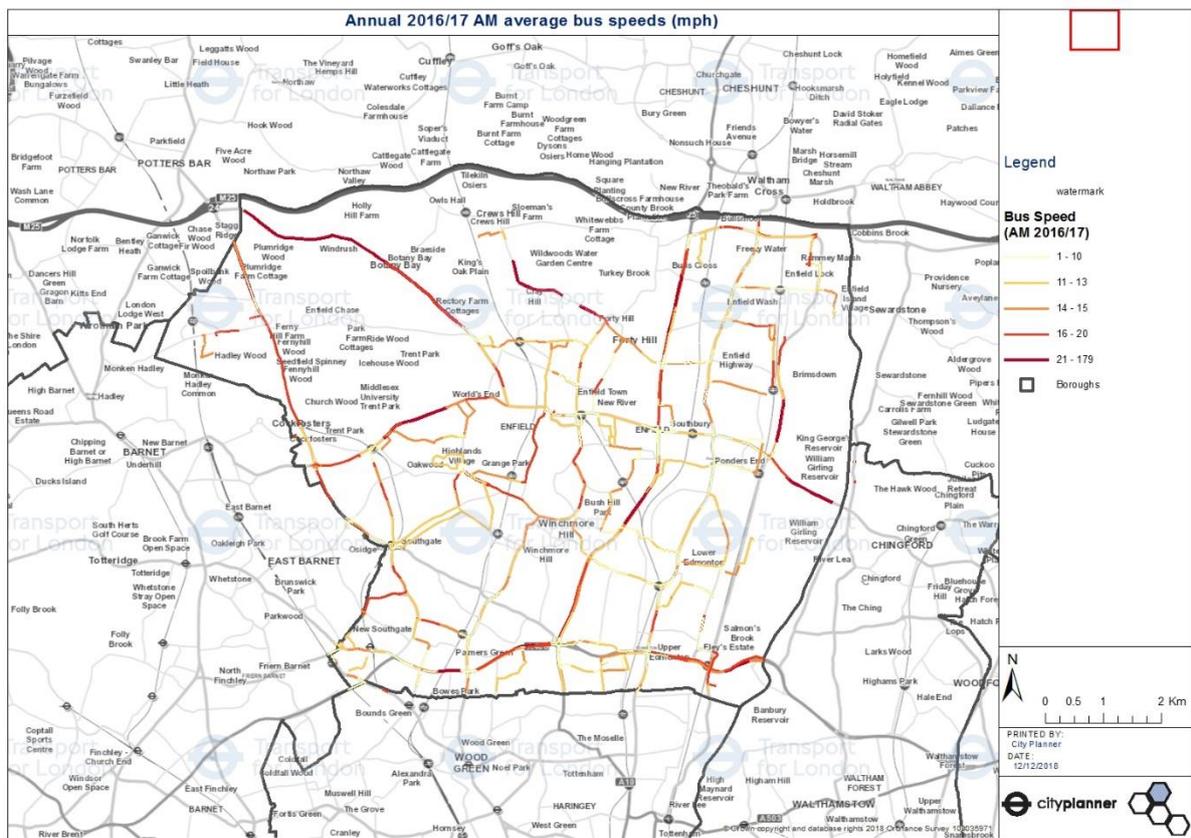
According to the North London Sub-Regional Transport Plan report mode share data, travelling by bus accounts for 14% of all journeys made by Enfield residents, which is the third highest mode share in the Borough. There is clearly a reliance on bus services for many trips. There are 47 bus services including 8 night bus services and 6 school-day only services that run through Enfield. These are run on behalf of TfL by 6 different companies and serve 547 bus stops within the borough.

Buses in Enfield are generally reliable, and rarely suffer significant delays. In quarter two of 2016/17, there was on average an 84.9% chance of waiting fewer than ten minutes for a bus. The average excess waiting time (EWT) for high frequency bus routes was 0.74 minutes in the second quarter of 2016/17. EWT is the waiting time experienced by passengers over and above what might be expected of a service that is always on time and high frequency bus services are defined as typically services for which a detailed timetable is not generally published. Most have weekday peak frequencies of five or more buses per hour (i.e. a service frequency of 12 minutes or more frequent).

In quarter two of 2016/17, for low frequency services, these are services running to an advertised timetable. Most have a weekday peak frequency of four buses per hour or less (i.e. a service interval of every 15 minutes or less frequently), 85% were found to be on time. 10.6% of low frequency buses ran between 5 to 15 minutes late.

Over the past fifteen years EWT for high frequency buses has continued to fall. However, bus wait times have begun to increase during the past two years, largely as a result of congestion. Whilst bus speeds are lowest towards central London there are a number of orbital routes in the North, particularly along the North Circular and from Enfield Town to Ponders End, where they are also slow. It is unrealistic to expect significant EWT reductions in the short term; this is particularly so because there is little scope for further Bus Priority measures in the Borough. That said, we are working closely with TfL to identify and implement more Bus Priority measures.

Figure 4.4 – Annual 2016/17 AM average bus speeds (mph)

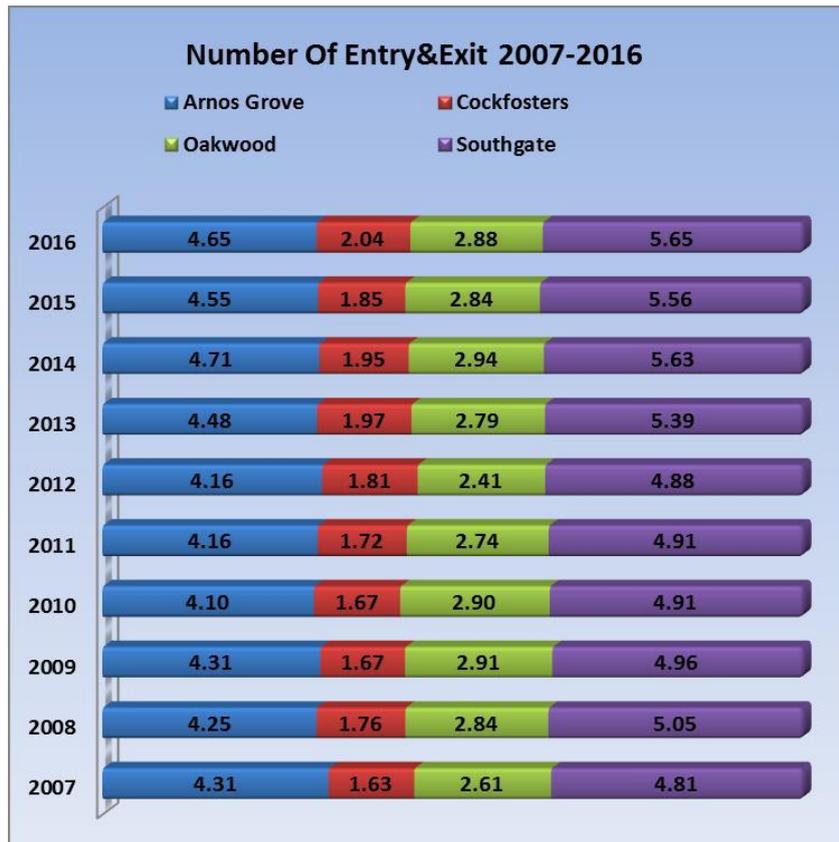


Source: TfL City Planner tool

In support of the bus network, the borough hosts the London Underground Piccadilly line. The Piccadilly line runs between Cockfosters in north London and Acton Town in the west where it divides into two branches, one to Heathrow Airport and the other to Uxbridge in north-west London. The underground network is concentrated in the west of the borough where there are four underground stations; Cockfosters, Oakwood, Southgate, and Arnos Grove. The Piccadilly line is mainly a deep-level line although for most of its length in Enfield it is not underground and is on the surface. The Piccadilly line is the fourth-busiest line on the Underground network with over 210 million passenger journeys in 2011/12. It is the second-longest line on the underground network after the Central line, and with 53 stations only the District line has more stops. The rolling stock is dated and in need of modernisation

and improvement. Introduced in 1975 and built to cater for airline passengers travelling with luggage between central London and Heathrow. The trains have extra floor space provided by longer carriages and larger vestibules than its predecessor. The Piccadilly line trains have some of the lowest capacity on the tube network, with a single train having a total capacity of 684 people.

The number of people entering and exiting the four underground stations within the borough between 2007 – 2016 is shown in the below table. You can see from the table that this modes usage has increased significantly over the last 10 years with 1.86 million more entry exits from stations within the borough.



Source: TfL Underground Services Performance

The mayor recognises that there is significant crowding especially during the peak times and that the rolling stock is dated and as such the Piccadilly line is included in the New Tube for London programme. It forms the next generation of line upgrades and aims to deliver asset renewals in a more comprehensive, consistent and systematic manner. The first deliverable is a new generation of trains. This provides a unique opportunity to transform the customer experience and the operation and maintenance model on the deep tube lines through technology-enabled change and asset renewals. New trains and signalling on the Piccadilly line is expected to provide 60% extra capacity.

Improving capacity on the Piccadilly line tube trains is needed and would cater for an expected growth in population and employment opportunities in Enfield and north London. Increased capacity would also improve air quality as these changes could reduce the number of people travelling to Heathrow airport by car.

The Borough also supports a comprehensive rail network consisting of eighteen surface rail stations: Angel Road, Brimsdown, Bush Hill Park, Crews Hill, Edmonton Green, Enfield

Chase, Enfield Lock, Enfield Town, Gordon Hill, Grange Park, Hadley Wood, New Southgate, Palmers Green, Ponders End, Silver Street, Southbury, Turkey Street and Winchmore Hill.

The Borough is relatively well served by rail and underground links to central London although there are poorer services in the east. To the west, the Piccadilly Line connects the Borough to London's west end, and the Moorgate line has a branch through the centre of the Borough to Hertford North. Although the eastern half of the Borough is linked by rail to the City and Stansted, communities in the east of the Borough are generally poorly served by public transport, with infrequent local trains along the Lee Valley rail corridor and poor-quality stations along its length that are difficult to access.

The most relevant proposed scheme is the proposed enhancement of the West Anglia Main Line to improve services to Stansted which also has the potential to increase frequencies of local rail services in the east of the Borough. Currently services on the line are severely hampered by the two-track railway between Coppermill Junction (south of Tottenham Hale) and Broxbourne Junction. By increasing from a two-track to a four-track railway an additional four trains per hour or more could be gained at some stops, increasing capacity, reducing congestion and journey times. Better rail links will integrate the corridor and allow it to grow and deliver growth. Four-tracking is an essential precursor to Crossrail 2.

Currently, services along the West Anglia Mainline suffer from poor reliability, slow journey times and frequent delays. This is because the local stopping services compete for space on the existing railway lines with faster services to and from London-Cambridge-Stansted. When one service is delayed, this has a knock-on effect on all the others.

It is forecast that by 2043 demand for rail travel along this line will have increased by up to 39%. Crossrail 2 would free up space on the railway, reducing journey times and allowing for more trains per hour in each direction. Transport improvements are already underway along the West Anglia Mainline but it is only Crossrail 2, due to its high frequency and dedicated infrastructure, that would provide the transformational change required in the long term.

Crossrail 2 would provide 10 - 12 trains per hour calling at all stations between Tottenham Hale and Broxbourne. There would also be significant improvement works at each station to accommodate the longer trains, as well as the installation of new lifts or ramps at all stations to provide step-free access. Additional track works are also required at Broxbourne to enable Crossrail 2 and Stratford trains to turn back at the end of their journey. Although Crossrail 2 is still in the planning stage the following improvement could be achieved:

Table 4.4 - Current and proposed future peak trains to London, per hour

Station	2015: Current trains to Stratford / Liverpool Street	2030: Future total trains to Central London	Of which will be Crossrail 2 services
Enfield Lock to Northumberland Park	Between 1 – 5 during peak hours	14 – 16	10 – 12
Tottenham Hale	12	27	15

Although there are several routes and rail lines running through the borough, all routes are radial in nature linking to Central London. There are no orbital routes running east - west or vice versa, this is due to severance caused by the waterways and reservoirs.

Interchanges facilitate transition between modes and/or different journey legs on one mode, have an impact on the convenience and reliability of public transport journeys. Travel times need to be reduced to make public transport more appealing.

Motorised transport and the road network

The borough's public highway network comprises of approximately 68km (42.3mi) of principal roads, 37km (23mi) of TLRN, 51km (31.7mi) of non-principal classified roads and 466km (289.6mi) of unclassified roads. The extent of highway assets is, however, far wider than the road network and includes:

- Associated verges, shrub beds and flower beds
- 23,500 trees
- Highway drainage, including settling ponds
- Over 1,170km (727mi) of footways and cycleways
- Over 52km (32.3mi) of footpaths, bridleways and byways
- 31,800 streetlights and illuminated signs
- Over 19,400 unlit road signs and street nameplates
- Other items of street furniture
- Over 340 bridges and other structures

Enfield has good links to the national motorway system, the north of the Borough being bounded by the M25, accessed at junctions 24 and 25. It also has two trunk roads – the A10 (London to Cambridge) and A406 (London's North Circular Road). These are supplemented by several A-roads that are key connectors in the Borough including the A1055 Bullsmoor Road / Mollison Avenue / Meridian Way (north-south link), the A1010 Hertford Road (north-south link), and the A110 (east-west link).

The transport network within Enfield does not operate in isolation but is part of much larger and complex sub-regional, regional and national networks. Furthermore, the level of growth in the neighbouring authorities of the London Boroughs of Barnet, Haringey and Waltham Forest, Epping Forest District Council in Essex and Hertsmere, Welwyn Hatfield and Broxbourne districts in Hertfordshire is such that Enfield will be subject to significant additional demands being placed on the local transport network. The projected growth in neighbouring authorities and further afield will add extra pressure on the highway network and the limited capacity in Enfield.

In 2016, general motorised traffic on London's roads grew by 1.6%, with this growth largely focused on outer London. According to local data collected by the DfT based on a number of 'count points' in the borough. Motor vehicle miles travelled in the borough has been up and down over the last 10 years (last 10 years of recorded data 2007 – 2016) with steady growth shown year on year since 2013. The overall picture for Enfield in recent years is one of gradually rising levels of motor vehicle traffic entering and exiting the borough.

Many parts of the borough suffer from significant congestion, with particular problems occurring on the A406, North Circular Road between Bounds Green to Green Lanes and A10, Greater Cambridge Road to Bounds Green. Regular congestion also forms on parts of A10, Greater Cambridge Road with vehicles regularly queuing as they enter the borough from junction 25 of the M25 in the AM peak and as they exit the borough via the same junction in the PM peak. Severe congestion often effects the junction immediately south of junction 25 of the M25, the A10 Great Cambridge Road / Bullsmoor Lane junction.

There is a specific challenge with regard to streetworks, particularly disruption from works undertaken by utility operators, both in terms of the disruption to the network during works and issues with the quality of reinstatement.

With few east - west links due to severance caused by the reservoirs in the east of borough, traffic wanting to make this movement is forced to the pinch point between the King George's and William Girling reservoirs where the A110, Lea Valley Road passes through. Congestion occurs at the Nags Head Road / Mollison Avenue / Lea Valley Road roundabout, the first junction vehicular traffic arrives at after travelling along the A110, Lee Valley Road from the London Borough of Waltham Forest in the east.

For many years it has been reported that the Brimsdown industrial area in the northeast of the borough is the second largest industrial area in London, after Park Royal in west London. However, it has also recently been claimed that Brimsdown is now in fact the largest industrial area as some of the industrial area of Park Royal has been redeveloped and some use classes have changed. Either way, due to its size and the types of commercial uses that operate from this location, a significant amount of freight journeys are generated. To help reduce congestion, demand management solutions (freight delivery plans, etc) will need to be developed and the Council will work to encourage the consolidation of freight in areas such as the Brimsdown industrial area.

Active travel

Enfield Council is committed to increasing cycling and walking. Through our Cycle Enfield programme, we are delivering schemes to support cycling and walking borough-wide. Our experienced Cycling Delivery Team are enthusiastic and excited about our Mini-Holland proposals and the opportunity to realise Enfield's cycling potential.

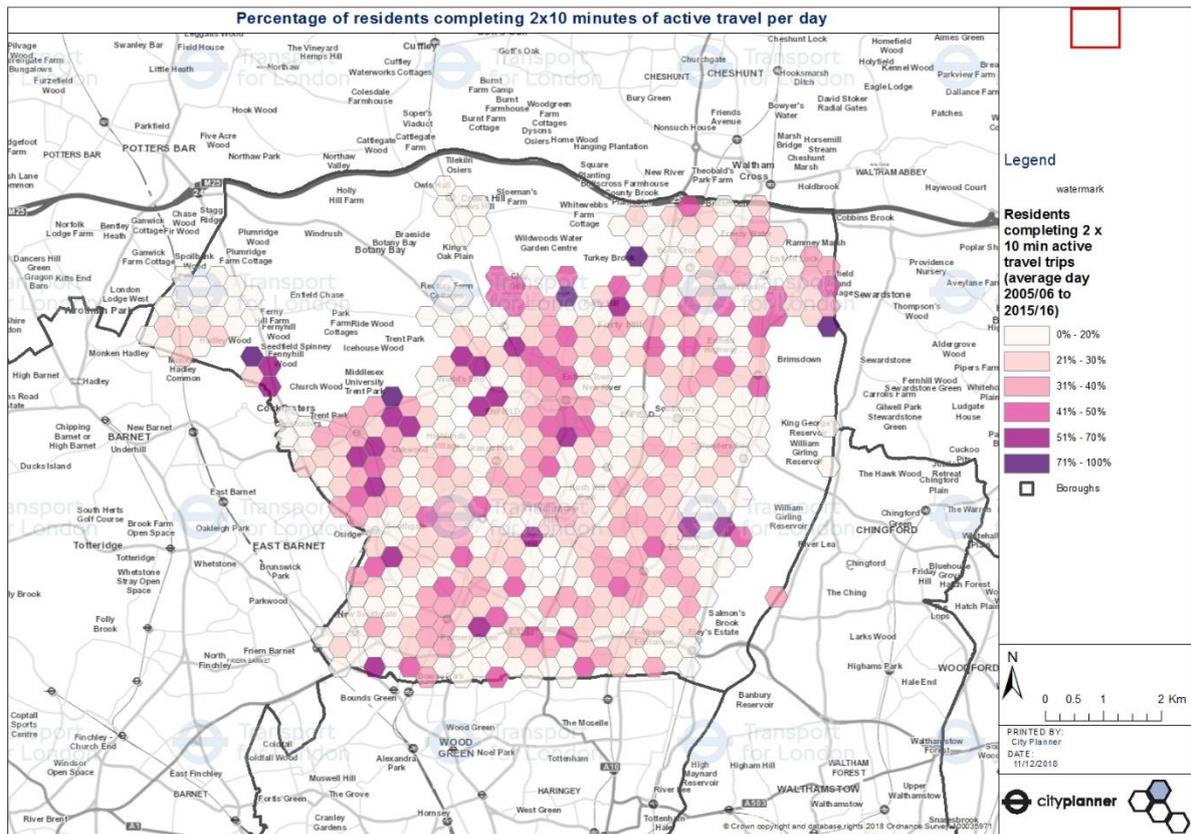
The A10 and A406 are our two busiest roads and the two biggest physical barriers to cycling within the borough. We recognise that although there is a heavy reliance on cars to make local trips and there are limited alternative travel options with lower density of public transport provision. Enfield is one of five Outer London boroughs identified as having the greatest number of potentially cyclable trips, nearly 80% of car trips in Enfield are of cyclable length.

The first step in developing our cycle network strategy was to examine current travel patterns, including the origin, destination and desire lines of short car trips, to gain a better understanding of the potential for cycling across the borough and to inform our cycle network. The data used was produced for Enfield by TfL using London Travel Demand Survey (LTDS) data. Using this data, we identified that potentially cyclable car trips predominantly start from or end around Enfield Town, Edmonton Green and Palmers Green. In addition, many east-west movements are made along the A110 (Southbury Road) and through Enfield Town. These are locations with significant traffic congestion and air pollution and increasing cycle use will help to reduce this.

Our Mini-Holland bid focuses on increasing cycling and walking levels and improving cycle safety, health, access to schools, social inclusion and access to employment. Our aim is to develop better town centres with good links between them and to adjacent boroughs. The project has full cross-party and stakeholder support, and has been carefully planned, assessed, programmed and costed and has a proper delivery plan. It is ambitious but deliverable and will transform the lives of thousands of Enfield residents, who we will continue to involve in the design and delivery of measures.

Walking as a mode share in Enfield has slightly increased from 28% in 2006, now up to 30% (TfL borough factsheet, July 2017). However, TfL City planning Strategic Analysis examined LTDS data for 2012/13 – 2014/15 and less than 25% of Enfield’s population is achieving two ten-minute periods of active travel a day. The below map shows where the highest levels and lowest levels of active travel are occurring within the borough.

Figure 4.5 – Percentage of residents completing 2 x 10 minutes of active travel per day



Source: TfL City Planner tool

4.5 Road traffic casualties

Within Enfield Council’s previous LIP, two targets and trajectories were set for reducing road traffic casualties. These targets and trajectories related to reducing:

- The total number of killed and seriously injured (KSI) casualties
- Total casualties

For KSI casualties, the average long term (14 year span) reduction attained was of the order of 28.7% with a maximum recorded value of 60%.

For Total casualties, the average long term (14 year span) reduction attained was of the order of 16.3% with a maximum recorded value of 50%.

Accordingly, it was considered prudent, yet adequately demanding, for Enfield to set two targets on the basis of a 30% reduction by 2020, relative to the baseline of the average for the five years 2004 to 2008 for KSI casualties and a corresponding 20% reduction by 2020 for total casualties. The trajectories were then generated by the requirement to reach those two targets by 2020, nominally starting from 2007, the TfL stipulated baseline. The below

table taken from Enfield's 2nd LIP has been populated with Stats 19 data to show how we have performed:

Table 4.5 – 2nd LIP casualty targets

Year	KSI Casualties		Total Casualties	
	Trajectory - 3 year moving average across year - not to be exceeded	3 year moving average across year - actual	Trajectory - 3 year moving average across year - not to be exceeded	3 year moving average across year - actual
2007	106	106	979	979
2008	104	93.3	972	969
2009	103	93.3	965	984
2010	101	97.7	959	1069
2011	99	94.0	952	1074
2012	98	85.3	945	1053
2013	96	70.0	939	1018
2014	95	64.7	932	1022
2020	86		894	

The targets contained within Enfield Council's last LIP were considered particularly ambitious for various reasons. Although the total casualties targets have not been met, we appear to be on track to meet the KSI target.

Table 4.6 – Number of casualties in Enfield by year

Year	Total casualties	Pedestrians	Pedal cyclists	Powered two-wheelers	Car occupants	Total vehicle occupants/riders
2017	1192	220	52	134	668	972
2016	995	175	53	98	555	820
2015	1051	170	51	98	636	881
2014	1003	177	76	91	540	826
2013	1012	156	49	115	601	856
2012	1038	157	55	78	669	881
2011	1109	183	67	101	665	926
2010	1075	170	55	85	644	905
2009	1022	171	38	72	671	851
2008	854	118	32	68	570	736

Source: 2008 – 2016 data presented is for personal injury road traffic collisions occurring on the public highway, and reported to the police, in accordance with the Stats 19 national reporting system. It must be noted that the Metropolitan Police Service introduced a new collision reporting system in November 2016 - the Case Overview and Preparation Application (COPA). COPA uses a new method of assessing the severity of injury sustained in collisions, as recommended by the DfT. The use of these systems aims to improve accuracy in the recording of injury type, with more injuries being classified as serious rather than slight. As a result, figures for 2017 should not be directly compared with previous data collected by the police using severity based reporting systems.

Table 4.7 – Number of casualties by severity

Year	Fatal	Serious	Slight	Total casualties
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2017	10	120	1062	1192
2016	4	69	922	995
2015	5	65	981	1051
2014	4	48	951	1003
2013	8	64	940	1012
2012	6	80	952	1038
2011	12	86	1011	1109
2010	7	91	977	1075
2009	9	88	925	1022
2008	6	79	769	854

Source: 2008 – 2016 data presented is for personal injury road traffic collisions occurring on the public highway, and reported to the police, in accordance with the Stats 19 national reporting system. It must be noted the Metropolitan Police Service introduced a new collision reporting system in November 2016 - the COPA. COPA uses a new method of assessing the severity of injury sustained in collisions, as recommended by the DfT. The use of these systems aims to improve accuracy in the recording of injury type, with more injuries being classified as serious rather than slight. As a result figures for 2017 should not be directly compared with previous data collected by the police using severity based reporting systems.

4.6 Air Quality

Road traffic accounts for 28% of London's total emissions of Carbon Dioxide (CO₂), 50% of London's total emission of nitrogen oxides (NO_x), and 50% of London's particulate matter (PM₁₀) emission. The trends affecting the different pollutants have varied over recent years. Emissions of CO₂ are decreasing as vehicles become more fuel-efficient. However, in 2016 the increase in levels of road traffic partly offset this on-going reduction, with a decrease of 0.7% in the year. This compared to a reduction of 2% in the previous year.

Emissions of NO_x are the most pressing problem for London's air quality, with ambient levels of Nitrogen Dioxide (NO₂) continuing to exceed European Union limit values across much of central and inner London – particularly close to busy roads. In 2016, NO_x emissions from road transport fell by 8%, following a 6.9% reduction the previous year.

Although London now complies with limit values for PM₁₀, continued reductions to ambient concentrations will bring further significant health benefits. Achieving this is however difficult, given that about 88% of London's road traffic emission now arises from vehicle brake and tyre wear and resuspension, with only limited technological options for improvement currently available. In 2016, London's road traffic PM₁₀ emission was effectively unchanged; some small reductions arising from the natural turnover of the vehicle fleet were offset by increased emissions reflecting the overall increase in road traffic levels.

In terms of ambient concentrations, NO₂ concentrations are now consistently improving year on year but remain above EU limit values across much of central and inner London, particularly at the roadside. PM₁₀ concentrations in London have reduced significantly over recent years; however, from 2015 onwards the average trends suggest that PM₁₀ concentrations in Inner London are increasing slightly. The reasons for these may be related to weather conditions but also may in part be due to increases in the use of solid fuel burning in some areas.

Air quality assessments undertaken by Enfield Council identified that the Government's air quality objective for annual mean NO₂ and daily mean PM₁₀ were not being met by the specified dates. Consequently, the Council designated an Air Quality Management Area (AQMA) across the whole of the Borough and produced an Air Quality Action Plan (AQAP) in

recognition of the legal requirement on the Council to work towards air quality objectives within the Borough; this is as required under Part IV of the Environment Act 1995 and the relevant air quality regulations.

The main source of pollution in the borough is road traffic. The AQAP reflects this by including measures to reduce the pollution emitted from vehicles on the roads.

Air pollution affects the quality of the air that we breathe and although air quality has improved in the UK in recent decades, evidence shows that invisible pollutants in the present day can still significantly harm human health and the environment. Exposure to poor air quality can have a long-term effect on health; this is associated with premature mortality due to cardiopulmonary (heart and lung) effects. In the shorter-term, high pollution episodes can trigger increased admissions to hospital and contribute to the premature death of those people that are more vulnerable to daily changes in levels of air pollutants.

Recent estimates indicate that poor air quality reduces the life expectancy of everyone in the UK by an average of seven to eight months. The House of Commons Environmental Audit Committee (EAC) further noted that the impact of air quality on life expectancy is considered greater than that from both road traffic accidents and passive smoking (EAC, 2010). The EAC also, in calling for more government action stated that “Four thousand people died as a result of the Great Smog of London in 1952 and this led to the introduction of the Clean Air Act in 1956. In 2008, 4,000 people died in London from air pollution and 30,000 died across the whole of the UK” (EAC, 2011).

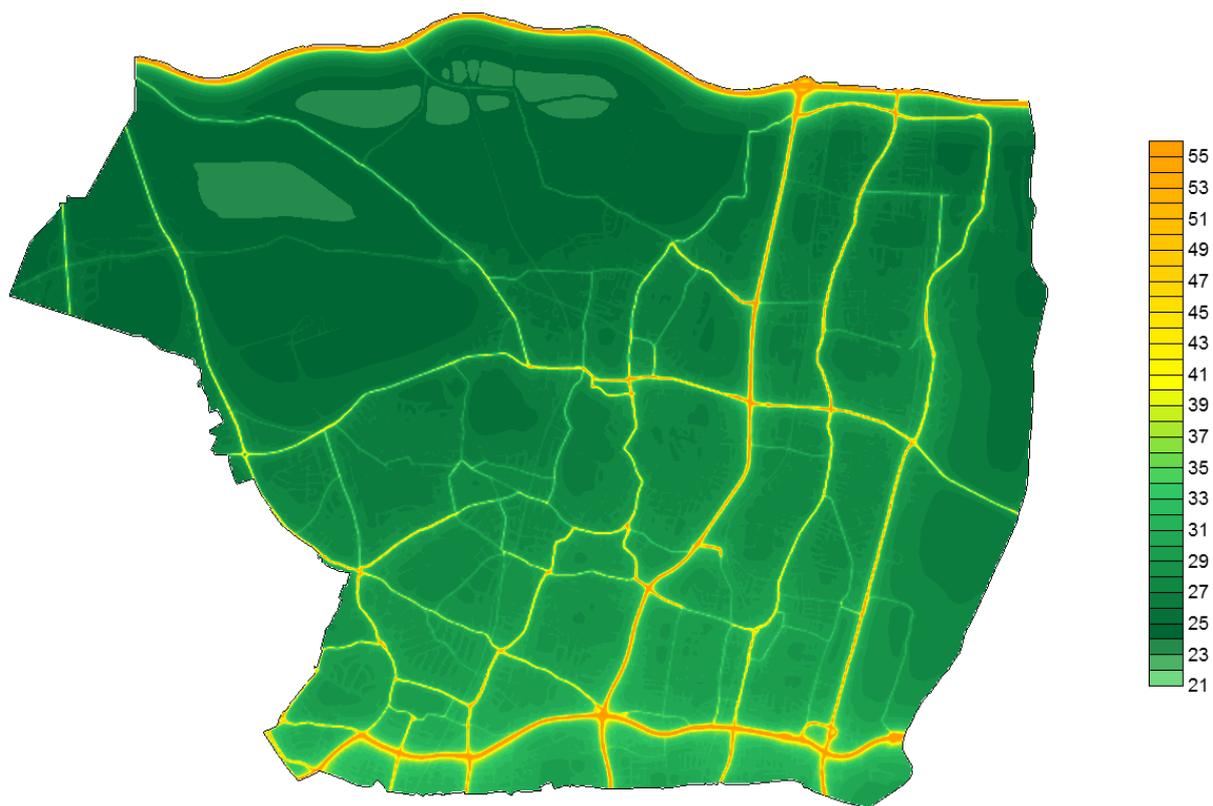
Most of the air pollution in the Enfield AQMA is caused by road traffic. Problems arise on roads which are heavily trafficked or have large amounts of congestion. For NO₂ there are widespread exceedances of the annual mean objective along main roads in the Borough; Typically, these are the major roads which form part of the TLRN or motorway (strategic road) network. The main centres within the Borough are also included, as well as the M25 sited at the northern boundary.

For PM₁₀ there are exceedances of the daily mean objective along parts of the busiest main roads in the Borough, including the M25, A406 North Circular Road and A10. The annual mean objective is exceeded in parts of the M25 and A406 North Circular Road only, very close to the centre of the roads.

Measurements from monitoring stations are only able to report air quality at that particular location. The most recent air quality modelling assessment of the borough use detailed models to show a prediction of what air quality is like across the whole of Enfield.

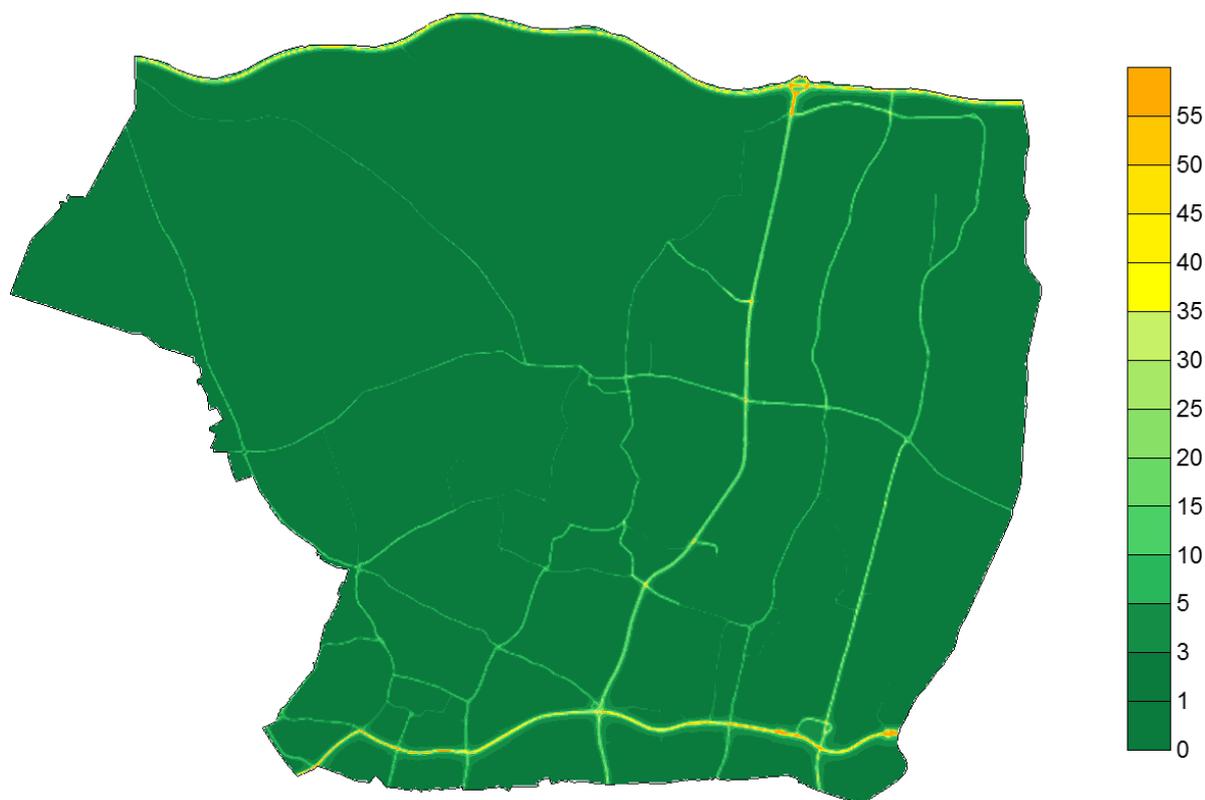
The below maps show predicted concentrations of annual mean NO₂ and PM₁₀ air pollution for 2012. Those areas that are shown yellow and orange exceed the government’s objective.

Figure 4.6 – 2012 model predictions of annual mean NO₂ (µg m⁻³) for the L.B of Enfield



Source: Air Quality Modelling Assessment of the London Borough of Enfield, Environmental Research Group, King's College London (June 2015)

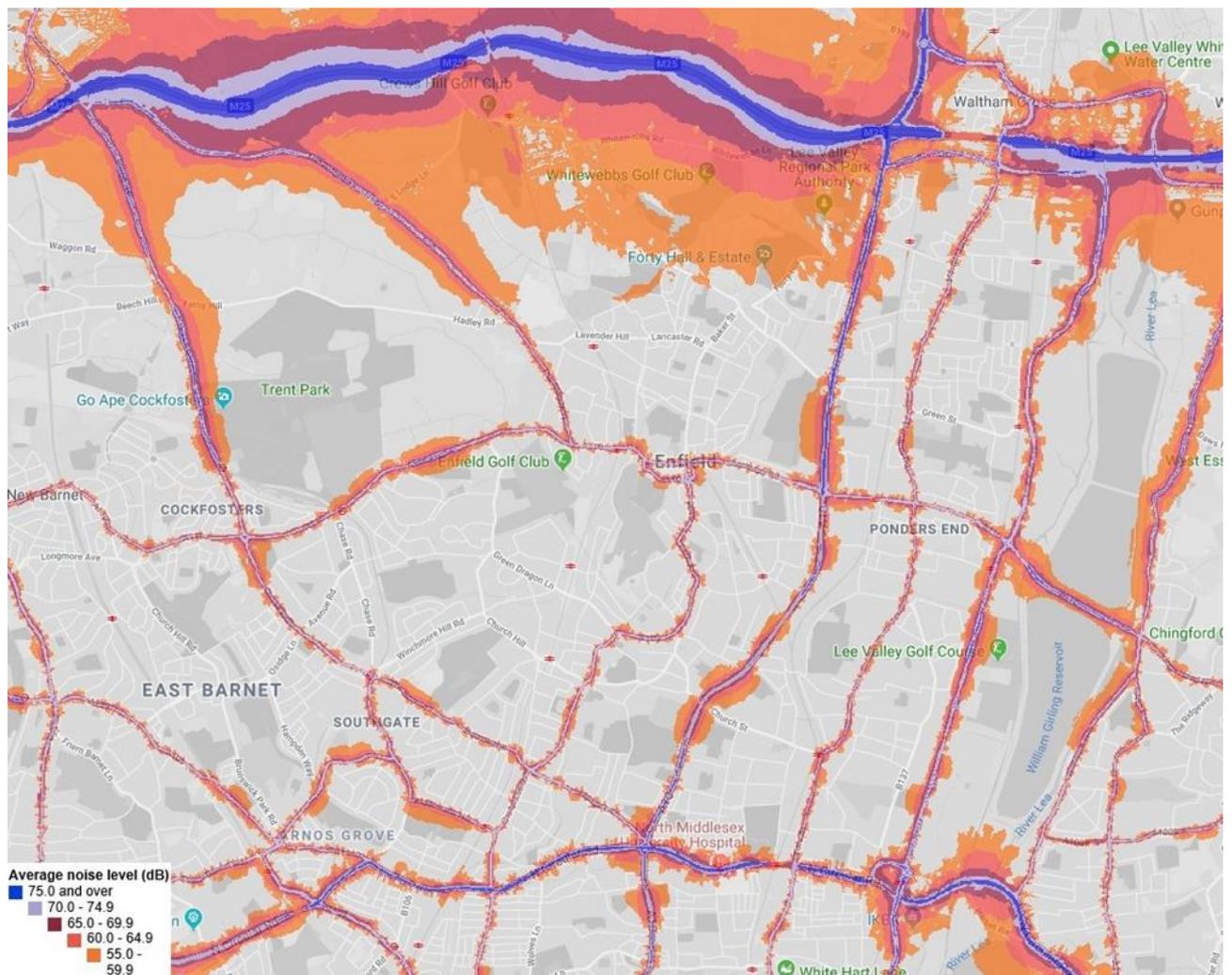
Figure 4.7 – 2012 base case model predictions of daily mean PM10 (number of days > 50µg m-3) for the L.B of Enfield



Source: Air Quality Modelling Assessment of the London Borough of Enfield, Environmental Research Group, King's College London (June 2015)

4.7 Noise and vibration

Little information is available on noise and vibration generally across the borough. It is likely that where air pollution is occurring noise pollution will also be prevalent as they are both closely linked to traffic volumes. The following figure shows estimated levels of road traffic noise, which is the primary noise source in most parts of the Borough. This is based on a strategic noise mapping exercise undertaken by the Government in 2012. Results are shown for LAeq, 16h, which is the annual average noise level (in dB) for the 16-hour period between 0700 - 2300.



Source: <http://extrium.co.uk/noiseviewer.html>

4.8 Transforming and improving transport provision

The Council and its partners are continuously working to provide transport services to meet the growing demand previously identified. The Council seeks major improvement to transport capacity as below, however, due to their complexity these projects and programmes have a long life and some of those detailed will extend beyond that of the plan period.

Table 4.8 - Major transport projects that impact on travel in Enfield

Project/ Programme	Details
New Trains for West Anglia services	Over £200 million will be spent on 31 brand new London Overground trains for services to Chingford, Cheshunt and Enfield Town (as well as Romford to Upminster). The new trains will feature walk-through carriages, air-conditioning, live network information and improved accessibility. Trains expected to be in service by 2018.
Devolution of London's rail franchises	<p>Since taking over the Liverpool Street to Enfield Town, Cheshunt and Chingford routes, TfL has:</p> <ul style="list-style-type: none"> • Staffed every station from first train to last • Equipped staff with devices to keep them up-to-date with the latest travel information • Integrated the lines into Journey Planner and Twitter • Carried out improvement works to platforms, stairs and station facilities to improve accessibility • Repainted stations and improved the shelters, benches, lighting and fencing to improve the look and feel of the station • Added additional ticket vending machines and improved facilities at some stations • Installed ticket gates to reduce fare evasion • Improved cycle parking at some stations • Improved safety and security at many stations by updating the digital CCTV, installing new help points and improving lighting <p>TfL has improved the reliability of the trains by 80% since June 2015 and punctuality has remained above 92% since November 2015.</p> <p>When the Mayor took over the London Overground in 2007 similar improvements led to a six-fold increase in passenger ridership and sky-high passenger satisfaction ratings. It is for these reasons that the Council enthusiastically supports further devolution of London's rail franchises to TfL with the aim of delivering improved reliability and capacity across London's suburban rail network.</p>
Cycle Enfield	A £42m programme which includes large scale physical works, starting with the A105 corridor, and a range of complementary measures (cycle training, cycle parking). Also includes cycle-ways and quieter neighbourhoods; an approach to residential areas which should align with the healthy streets initiative.
STAR	The Stratford, Tottenham, Angel Road rail enhancement programme (new track and a new station which will allow increased service frequencies) will unlock the full potential of the £2.5bn Meridian Water development site.
Deep Tube Upgrade Programme Piccadilly Line	Signal replacement and new rolling stock to provide increased frequencies and capacity. Works to increase capacity will begin on the Piccadilly line with the introduction of a new signalling system and a new fleet of trains. These trains will replace the current fleet from 2023 by which time they will be 50 years old.
Lea Valley mainline Four Tracking and Crossrail 2	Through four-tracking of the Lea Valley mainline and new link to central London, Crossrail 2 supports the long-term reconfiguration and regeneration of the eastern part of the borough. It also opens up opportunities in the west of the borough via the branch to New Southgate.
Station step-free access	Step-free schemes to be delivered as part of station capacity projects or Crossrail 2 construction. Work is scheduled to be undertaken, with Cockfosters Tube station to go step-free in the 2019/20 fiscal year.

Retrofitting buses and Low Emission Bus Zones	TfL to make sure the entire bus fleet meets the Euro VI emissions standard by September 2020. This will primarily be achieved through retrofitting enhanced Selective Catalytic Reduction systems on more than 4,500 vehicles. TfL will also introduce Low Emission Bus Zones in some of the worst pollution hotspots.
Ultra Low Emission Zone (ULEZ)	The Mayor, through TfL, will seek to introduce the central London Ultra Low Emission Zone standards and charges in 2019; the zone would be expanded London-wide for heavy vehicles by 2020 and to inner London for all other vehicles (except taxis) by 2021.

As part of the Cycle Enfield project, the Council working with TfL has identified key cycle routes to implement that have the most potential to increase cycle use, replacing car journeys. The borough will continue to support development and implementation of the major transport projects that we have identified and described in Table 4.8 as we recognise that these schemes offer great opportunities to shift trips to more sustainable modes contributing to the MTS overarching aim for 80% of trips in London as a whole to be made by active, efficient and sustainable modes by 2041. As these schemes develop we will identify supplementary measures that support and enhance these schemes to encourage and enable change to the transport mix within the borough.

4.9 Housing, Regeneration and Growth

Housing stock in the Borough was up by 8% between the years 2001 – 2011, however, it has failed to keep up with population growth and the average number of people per household has increased. The average household size in the Borough has increased markedly since 2001 from 2.45 to 2.59 persons per household at the last (2011) census. The supply of housing is failing to keep up with the rate of population growth.

Summary descriptions of Enfield's key regeneration areas as identified in the local development framework, and the evolving Local Plan, are contained under the below subheadings:

Edmonton Leaside including Meridian Water

Edmonton Leaside is in the south eastern corner of Enfield and includes the Meridian Water regeneration area, established employment estates, Lee Valley Regional Park, Picketts Lock and major infrastructure facilities such as the Edmonton Eco Park and Deephams Sewage Treatment Works.

Meridian Water is a major London regeneration programme bringing thousands of new homes and jobs to Enfield, north London, next door to the beautiful Lee Valley Regional Park. Alongside new public open spaces, shops and community facilities, the development will have its own new railway station, already funded and being delivered by Network Rail and will open in 2019.

This large scale regeneration programme is located next to Haringey's north-eastern boundary. We recognise these proposals will attract growth and investment both within Enfield and neighbouring areas of Haringey. The Council therefore recognises the importance of maximising the opportunities that this project brings by strengthening links between the areas, including better, and safer, use of the Lea Navigation Canal towpath.

More detailed information can be found in the Edmonton Leaside Area Action Plan and Master Plan for Meridian Water.

North Circular including New Southgate

This regeneration area covers the area between New Southgate on the west and the start of the Great Cambridge Road approach to the east incorporating established residential areas of New Southgate, Arnos Grove, Bounds Green, Bowes and the southern end of Palmers Green. The area is traversed along its length by the A406 North Circular Road. A length of Pymmes Brook, a minor tributary of the Lea River, forms part of the area's northern boundary, Bounds Green Brook runs north-south adjacent to the A406 for part of its length. The New River also passes north-south across the area.

By 2026 the North Circular area will be transformed from one disconnected by an unforgiving road corridor and dominated by poor housing stock to one characterised by strong and thriving local communities, high quality new and refurbished housing areas connected by streets better designed to meet the needs of all users and modes of transport. These local communities will be serviced by a network of vibrant local commercial centres and community facilities.

New Southgate has many strengths like great transport links to central London, green spaces, and well used local shops. Despite this, there are many things that need to be improved like better housing for residents, schools, shopping parades, community facilities, local training and job opportunities, and streets and green spaces to help create an attractive neighbourhood that can be enjoyed by everyone who lives there.

The area is included in the latest draft London Plan (December 2017) and is recognised as an opportunity area, the first stage in a plan-led approach to providing significant quantities of additional jobs (3,000) and homes (2,500), improvements to transport and other infrastructure, and better access to local services.

More detailed information can be found in the North Circular Area Action Plan and Master Plan for New Southgate.

North East Enfield

The North East Enfield area stretches from the M25 southwards to Ponders End. It includes the communities of Enfield Lock, Enfield Highway, Ponders End, Turkey Street, and Southbury.

At first glance the area has much to offer; its diverse neighbourhoods of Ponders End, Enfield Highway, Enfield Wash along the main spine of Hertford Road. The attractive conservation area at Enfield Lock, thriving industrial areas of Brimsdown and Innova Park, and an area of natural recreation in the Lee Valley Regional Park and Waterways.

This area is home to a diverse community of around 77,000 people and approximately 1,000+ businesses, many people travel to and through the area to work. However, despite the areas strengths, it is also home to some of London's poorest communities suffering from high unemployment, low skill base, low educational attainment and a higher than average level of benefit claimants. There is a need to regenerate the area, to make it a more attractive place to live and work, with the facilities and services to support its residents. The overall vision is to make North East Enfield a place where people aspire to live, work, visit and invest.

Access to the area is a key issue and a sequential approach has been identified to the selection of transport options. The Northern Gateway Access Package (NGAP) will start with measures to encourage a shift towards non-car modes, then local traffic measures, and finally upgrading the highway network. This approach would ensure that the Council would

only consider additional highway infrastructure if other more sustainable options were exhausted.

Regeneration in this area would support and be supported by the provision of new infrastructure in particular potential four-tracking of the West Anglia mainline and the arrival of Crossrail 2. Crossrail 2 would link Enfield to the wider south east significantly enhancing the frequency and quality of rail services, improving connectivity, reducing journey times, as well as supporting economic regeneration through the provision of new infrastructure.

The area is included in the latest draft London Plan (December 2017) and is recognised as an opportunity area, the first stage in a plan-led approach to providing significant quantities of additional jobs and homes, improvements to transport and other infrastructure, and better access to local services.

More detailed information can be found in the North East Enfield Area Action Plan.

Enfield Town

A masterplan framework for Enfield Town has recently been adopted. Its purpose is to preserve Enfield Town's historic market town identity while helping to develop a town centre that meets the future needs of a growing London borough. A distinguishable centre for residents across Enfield that can meet the demands of diverse employment, better connections, living spaces and cultural activities.

The Master Plan will progress as a Supplementary Planning Document and will form part of Enfield's Local Plan. More information can be found in the Local Plan area on the Council's website.

Upper Lee Valley Opportunity Area

As previously mentioned within this document, some areas in the east of the Borough fall within the Upper Lee Valley Opportunity Area, an area located within the London – Stansted – Cambridge Corridor. At over 3,000 hectares, the Upper Lee Valley Opportunity Area represents by far the largest Opportunity Area in the London Plan.

The Upper Lee Valley covers areas in the London boroughs of Enfield, Haringey, Waltham Forest and Hackney. Within Enfield the Upper Lee Valley Opportunity Area contains; a wealth of existing assets, such as the Lee Valley Regional Park, established residential communities and a large concentration of industrial land. With connections into central London via the A10 / A1010 corridor and the Anglia Main Line.

The hope for the area is to achieve significant growth optimising development and redevelopment opportunities. Over 15,000 new jobs and 20,100 new well-designed homes by 2031. The regeneration areas of Edmonton Leaside including Meridian Water and North East Enfield fall within the boundary of the Upper Lee Valley Opportunity Area, therefore these regeneration areas have local, regional and national importance.

The Upper Lee Valley Opportunity Area Planning Framework identifies the potential for Crossrail 2 to run through the Upper Lee Valley. This could transform public transport accessibility and the viable density of development in the corridor.

4.10 Mayor's Transport Strategy outcomes

Outcome 1: London's streets will be healthy and more Londoners will travel actively
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Enfield will improve and manage its streets to create a high-quality public realm that
--

encourages walking and cycling by all residents and visitors to the borough.

Nearly everyone walks. How much people walk is largely determined by how close they are to a range of destinations and whether they own a car.

The Council needs to work to increase the existing 30% walking and 1% cycle mode share of trips originating in Enfield, but we recognise that getting people to change their travel habits is difficult whilst the car remains a cheap and convenient option, people will continue to drive walkable and cyclable journeys.

If we don't get residents and visitors to the borough to change their travel habits, the forecast population growth discussed in section 4.1 will lead to rising levels of traffic. Rising traffic and falling road capacity for private vehicles means that congestion will rise for essential traffic.

Congestion causes stress and frustration and limits the amount people can travel because journeys are slow and unpredictable. For businesses, congestion costs money as workers spend time queuing in traffic, it is difficult to make deliveries on time, and an unreliable road network harms the reputation of the borough. Bus journeys become slower and less reliable.

Freight vehicles account for around a fifth of motorised vehicle kilometres travelled in London. Industry trends and economic growth will lead to more freight traffic, especially vans. Having one of the largest, if not the largest industrial area in London (the Brimsdown industrial area) within the northeast of the borough, Enfield is likely to be more affected than other London boroughs by the increased growth of van use.

For Healthy Streets, we need to achieve population and jobs growth without a matching rise in car travel. At present, 67.5% of households in Enfield own a car. Car ownership is the strongest determinant of inactivity – 70% of people without a car do some activity compared to 50% with one car.

The borough has substantial scope for reducing the number of trips made by car given that 30% of existing car journeys originating in the borough are less 2km (1.2mi) in length and nearly 60% are less than 5km (3.1mi). However, having an alternative available does not mean that people will switch. Delivering mode shift requires changes to people's preferences, and to the relative appeal of travel by car and the alternatives. In reality, this means that car travel would need to be less appealing, and the other modes more appealing, in order to realise the potential that has been identified.

The case for promoting cycling was made extensively in Enfield's Mini-Holland submission. The Cycle Enfield project enables the borough to improve and manage its streets to create a high-quality public realm that encourages walking and cycling by all.

The target for Cycle Enfield is to deliver an increase in cycling journeys from around 5,000 per day to 25,000 per day by 2021. In addition, the ambition is for 80% of residents to be within 400 metres (about 1 minutes by cycle) of a network of high quality cycling routes. The phased development of this network is illustrated below, utilising a phased approach to be delivered as a 2021, 2025 and 2030 Network.

Proposed 2021 Network

Objective: Connect major town centres and major transport hubs

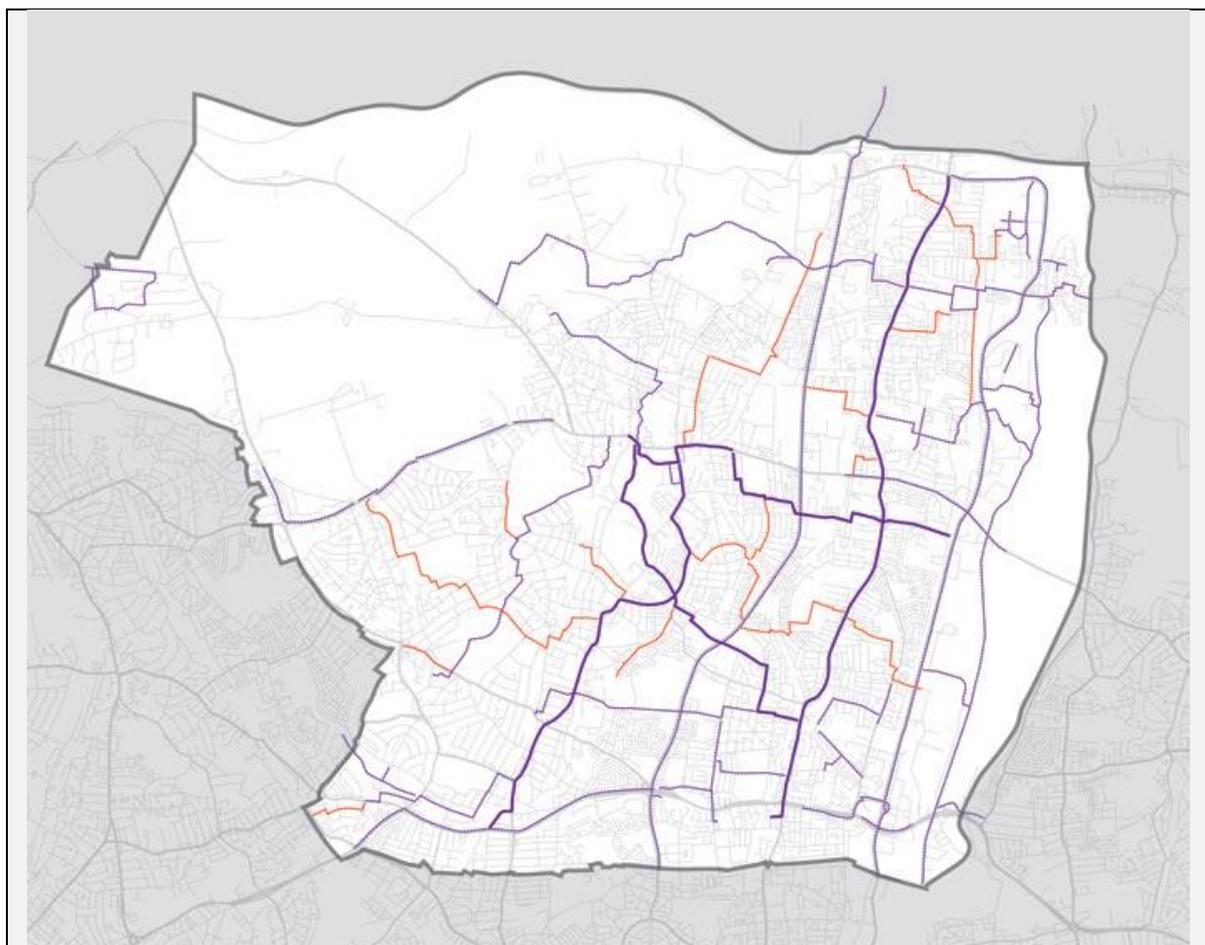


Source: Enfield Wayfinding Masterplan (November 2017)

Proposed 2025 Network

Objective: Connect all town centres and transport hubs

-  Quietway
-  Quietway Link
-  Added Link

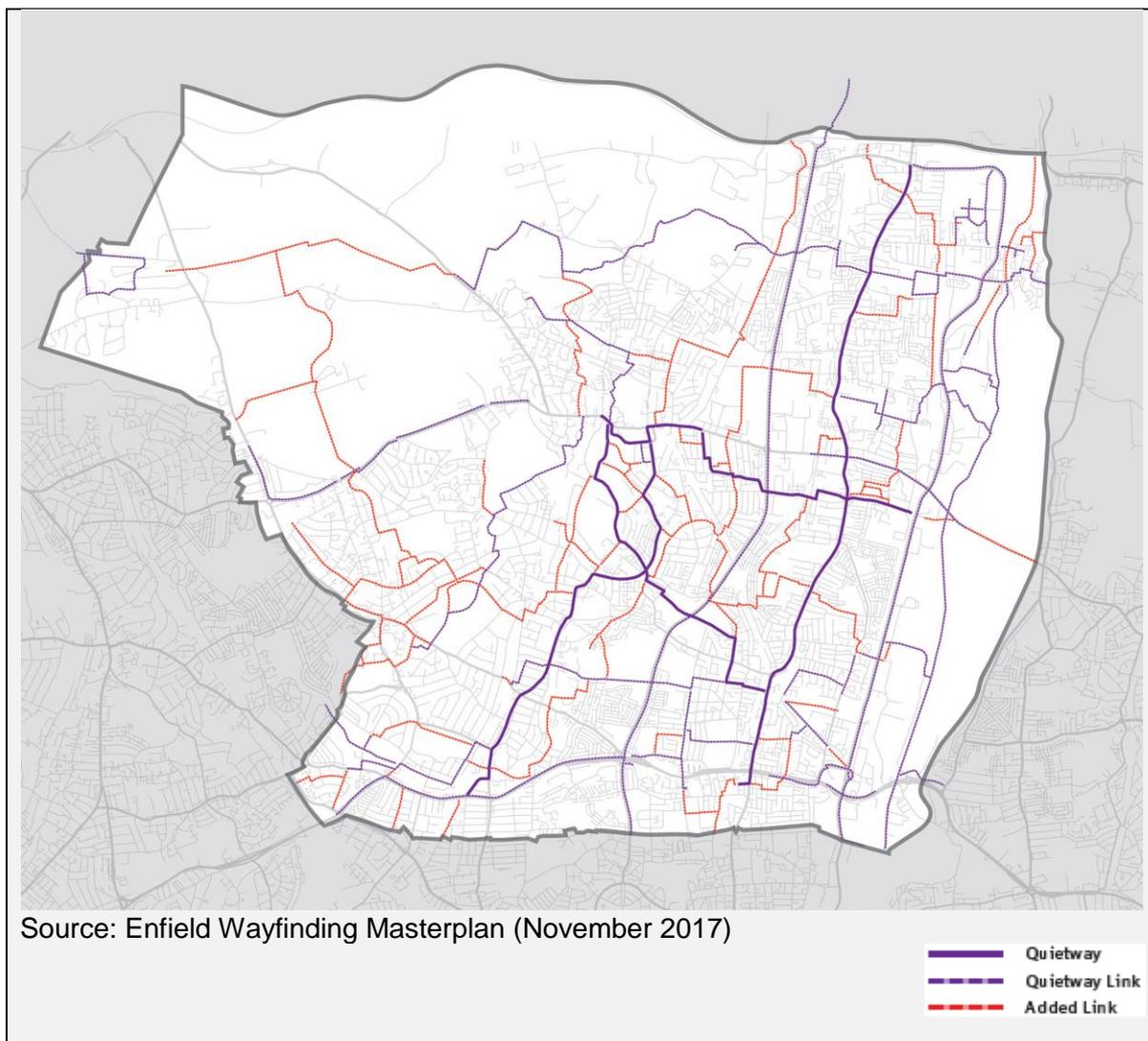


Source: Enfield Wayfinding Masterplan (November 2017)

-  Quietway
-  Quietway Link
-  Added Link

Proposed 2030 Network

Objective: Create a comprehensive, high-quality, safe network, connecting all schools, parks, retail areas and communities. Every resident of Enfield within 400m of a cycle route, to reflect the MTS goal to have 70% of Londoners within 400m of good quality cycle routes.



Outcome 2: London's streets will be safe and secure

Road safety has been a key theme of Enfield's LIP programme for a number of years with a mix of reactive infrastructure interventions, targeted at collision hot-spots and locations where excess speeds are recorded, and proactive initiatives including road safety education and the introduction of 20 mph measures in the vicinity of the borough's schools.

In working towards Vision Zero this approach will be maintained although, given limited resources, the focus will be on interventions which target locations with the highest number of serious collisions, as well as a coordinated offer to schools under the safe, sustainable and active school travel programme.

Alongside this, LIP funding will be used to develop a Vision Zero Action Plan, with a review of road safety data informing the identification of priority locations and user groups. As part of this we are considering adopting a predictive approach, where data on the most dangerous junction types and patterns of slight collisions are used to pinpoint locations where proactive interventions could reduce the likelihood of future serious collisions.

There will be ongoing highway maintenance and early interventions, as set out in the

Highway Asset Management and Highway Maintenance Plans, to reduce the risk to road users arising from highway infrastructure defects. This includes carriageway repairs and footway renewals to reduce the risk of trips and falls.

In terms of monitoring road collisions, the Metropolitan Police Service (MPS) introduced a new collision reporting system in November 2016 - the Case Overview and Preparation Application (COPA). The City of London Police also moved to the Collision Reporting And Sharing (CRASH) system in October 2015. This has had a number of impacts on the data that is available to TfL, and the London Boroughs in the ACCSTATS database for collision investigation.

Under the new systems officers use an 'injury-based assessment' in line with DfT STATS 20 guidance and online self reporting is available. Both of these changes are expected to provide a better assessment of injury occurrence and severity but have made data collected from November 2016 onwards difficult to compare with earlier data.

TfL commissioned the Transport Research Laboratory (TRL) to undertake a back-casting exercise to enable pre November 2016 data to be compared with post November 2016 data. These initial back cast estimates include the number of people KSI for each borough between 2005 and 2017 and this data has been used to update borough targets to align with those contained in the MTS, namely a 65 percent reduction in KSIs by 2022 against the 2005-09 baseline, a 70 percent reduction in KSIs by 2030 against the 2010-14 baseline and zero KSIs by 2041. The targets contained in this final version of the LIP have been set against Outcome 2 for Vision Zero to reflect the reporting changes. The level of ambition remains unchanged, despite these revised figures.

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

Outcome 8: Active, efficient and sustainable travel will be the best option in new developments

Enfield is committed to encouraging more people to walk and cycle which, as well as improving health incomes, will increase the number of trips made by sustainable modes and, over the long term, reduce traffic levels. There is also ongoing work to introduce bus priority measures to make bus journeys more reliable and faster.

There will be continued monitoring of air quality through fixed and mobile monitoring stations. This has identified the major road network as a priority so, given that the main arterial routes are the responsibility of Transport for London, we will work with them to bring forward mitigation measures.

Despite them still contributing to vehicle trips and collisions, the Council will support the uptake of electric vehicles by looking to install rapid and fast charging points on arterial routes and in locations with high numbers of visitors by car, such as town centres, retail sites and leisure centres. A trial of in lamp column charging will also be investigated, as will the increased provision of publicly available charging points on private sites. This will be alongside the requirements for electric vehicle charging for new developments as set out in the emerging London Plan.

At a strategic level, the draft Enfield Local Plan includes a policy objective to reduce the

impact of private cars on our streets by:

- Using the Healthy Streets approach to improve poor air quality and tackle climate change by reducing the reliance of private motor vehicles, easing levels of traffic and congestion and providing infrastructure to support alternative sustainable modes of transport to provide access to employment, schools and services;
- Ensuring quality public realm, safe road crossings, signage and greening to create healthy and attractive environments that support and encourage people to choose to cycle and walk;
- Promoting road safety and safer cycling and pedestrian movement around town centres and transport nodes;
- Support behavioural change by providing opportunity for car club development, establishing car clubs and promoting car sharing;
- Adopt maximum car parking standards and car-lite housing wherever feasible;
- Consider design and public realm measures to reduce the impact of expected changes in climate, including permeable surfaces; and
- Seek to mitigate the impact of road based freight and promote alternatives.

This will include managing street trees and introducing sustainable urban drainage schemes to make streets greener whilst also mitigating the impact of surface water runoff.

In line with the Mayor's Transport Strategy, there is also an opportunity to review our approach to on-street parking to make sure that scarce space is being used most effectively and, particularly in locations with access to public transport, that the use of sustainable modes becomes the norm.

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

Outcome 7: Journeys by public transport will be pleasant, fast and reliable

Outcome 9: Transport investment will unlock the delivery of new homes and jobs'

The Council will work with its partners to make the public transport network more accessible and the natural choice for longer trips. It will work with its partners, including rail and bus operators, to deliver key infrastructure to promote sustainable growth in Enfield, including Crossrail 2, Four-Tracking of the West Anglia Mainline as a stage of Crossrail 2, Strategic and Major network Enhancements, as well as East-West Rapid Transit.

New developments will be expected to contribute to these improvements in the following way:

- Safeguarding land where appropriate to enable these key infrastructure projects to progress. Proposals which are contrary to the safeguarding of strategic infrastructure improvement projects will be refused;
- Contribute financially towards bus network infrastructure improvements, including new and improved bus services promoting east – west routes and frequency upgrades to existing routes; and
- Access and interchange improvements to local rail and tube stations.

As for supporting housing growth, alongside Network Rail and the Greater London

Authority, the Council has already made a significant contribution to delivering improved public transport and the early delivery of 10,000 new homes and 6,000 new jobs by funding a new station at Meridian Water. The vision is for this major development to be low-car with a focus on sustainable transport modes and a vibrant, self-sufficient community.

There is also an update to the Upper Lea Valley Opportunity Area Planning Framework (OAPF) and the emerging New Southgate OAPF, which will identify transport interventions to support strategic employment and housing growth areas.

We also expect TfL to play its part by working with Enfield to develop and deliver a network of bus routes which meet current and future needs, as well as addressing gaps in London Overground provision, with a priority being a four trains per hour all day service on the Enfield Town and Southbury Loop lines.

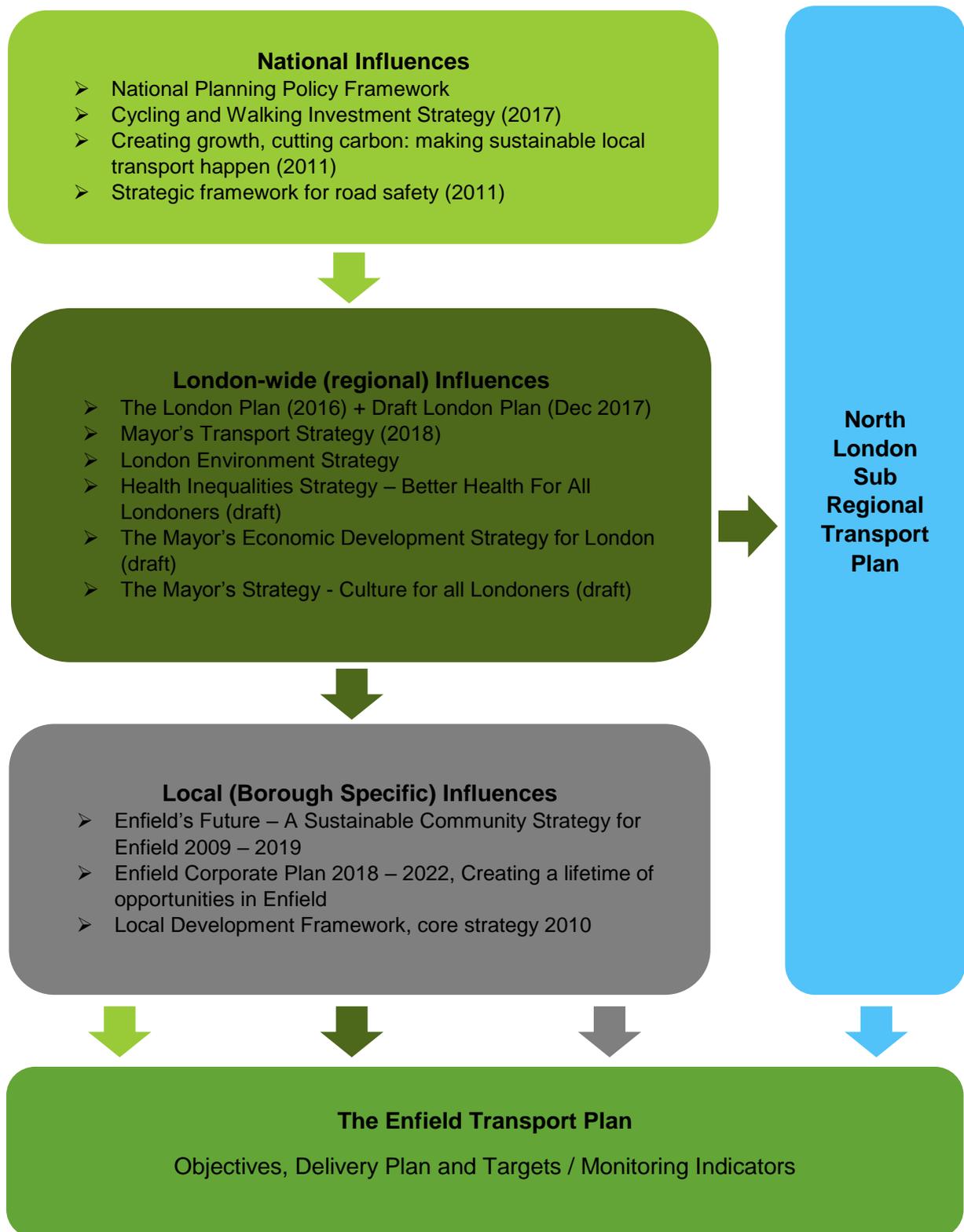
The Council remains committed to improving accessibility to the public transport network including through the delivery of ongoing bus stop accessibility projects, which aim to make 95% of our bus stops accessible compared to the current figure of 92%. We are also looking to identify priority locations for step-free access with a view to seeking funding through future tranches of the Access For All programme. There will also be work to identify other interchanges, such as bus to bus, where improvements could support more people to make sustainable journeys.

4.11 Policy context

National, regional and local documents relevant to the development of the Enfield Transport Plan are outlined in **Appendix D**, this includes other Mayoral strategies relevant to LIPs.

The following figure shows how both the regional and the Council's own policies have informed and influenced the development of the Transport Plan.

Figure 4.8 - Policy influences



5 Our strategy for Enfield and Borough transport objectives

Section five sets out the identified local priorities to be addressed through implementation of our ETP. This section sets out the relationship between local challenges and MTS challenges, how meeting these will satisfy the MTS vision and priorities.

5.1 Summary of challenges and goals for TfL and Enfield

Transport is for people and about supporting our community. It is a topic which many people feel passionately about, just ask the average commuter about their journey to work, or how accidents, incidents and congestion affect their trip and the importance of the need to travel becomes apparent.

The health benefits delivered by Enfield's streets go far beyond the physical activity that people get from walking and cycling in the borough, although this is the biggest benefit and has great potential for health improvements in the future. Increased walking and cycling offers many other advantages including cleaner air, less noise, more connected neighbourhoods, less stress and fear, and fewer road traffic injuries. These issues are all connected, and to deliver the biggest benefits from more walking and cycling we need to ensure our streets invite people to walk and cycle whenever possible.

We recognised this important role and seek to make travel within the Borough as convenient, pleasant, and as safe as it can be. The transport network is supported by many stakeholders, including public transport operators, the police, neighbouring authorities and TfL.

The central aim of the MTS is to create a future London that is not only home to more people, but also a better place for all those people to live in by adopting the Healthy Streets Approach. This means changing the transport mix and adopting a spatial approach to transforming the transport system.

Reducing Londoners' dependency on cars in favour of increased walking and cycling levels and greater public transport use will address health problems, make transport safer, reduce inequalities and limit environmental impact.

TfL, as the Mayor of London's transport body, sets the context for how travel and transport in London is developed and for managing the busier roads, typically the TLRN. Enfield in preparing its Transport Plan has considered how delivering our own objectives will support the delivery of the MTS whilst also delivering against local priorities. Within sections 3 and 4 of this document, we have considered the local context and local issues, challenges and opportunities faced by Enfield. Our identified priorities are:

- Making active travel the natural choice, particularly for those trips less than 2km (1.2mi) in length
- Making more school trips safe, sustainable and healthy
- Reducing the impact of private vehicles on our streets
- Making the public transport network more accessible and the natural choice for longer trips
- Maintaining our assets for the benefit of the public

Table 5.1 compares the MTS strategic drivers, outcomes and challenges against local challenges, opportunities and priorities.

Table 5.1 - Comparison of MTS outcomes, challenges and opportunities and local priorities

Strategic Drivers	MTS Outcome	MTS Challenges	Enfield Challenges and Opportunities	Enfield's Priorities				
				Active Travel	School Travel	Private Car Impact	Public Transport	Maintain Assets
Healthy streets and healthy people	Active "London's streets will be healthy and more Londoners will travel actively"	All Londoners to be doing a healthy level of activity through travel	<ul style="list-style-type: none"> Two thirds of adults (61.4%) are overweight or obese in Enfield 2 in 5 of 10 - 11 year olds (41.5%) are overweight or obese in Enfield Delivery of 'Cycle Enfield' Sustainable travel to and from schools, services and local amenities 					
		Walking or cycling will be the best choice for shorter journeys	<ul style="list-style-type: none"> Enfield's population is diverse, all ethnic groups and sexes need to be encouraged to walk and cycle 31% of the mode share of trips originating in Enfield are undertaken by walking and cycle Delivery of 'Cycle Enfield' Sustainable travel to and from schools, services and local amenities 					
	Safe "London's streets will be safe & secure"	Aim for there to be no deaths or serious injuries on London's streets	<ul style="list-style-type: none"> Enfield's age profile has a higher number of children and younger people compared to the rest of London averages Travel to and from school Population growth 					

Strategic Drivers	MTS Outcome	MTS Challenges	Enfield Challenges and Opportunities	Enfield's Priorities				
				Active Travel	School Travel	Private Car Impact	Public Transport	Maintain Assets
			<ul style="list-style-type: none"> Targeted Road Safety improvements within Enfield Road traffic casualty reduction 					
		Everyone will be able to feel safe and secure when travelling on the street	<ul style="list-style-type: none"> Enfield has a low overall crime rate when compared to neighbouring boroughs and London as a whole Calls concerning Anti-social Behaviour have increased in recent years 					
	Efficient "London's streets will be used more efficiently & have less traffic on them"	Falling car ownership and use	<ul style="list-style-type: none"> Population growth High car ownership levels within the borough Peak time traffic congestion on the strategic road network 					
		Traffic will fall and congestion kept in check, allowing more efficient operations	<ul style="list-style-type: none"> High car dependency 3 in 5 existing car journeys are less than 5km in length 3 in 10 existing car journeys are less than 2km in length 					
	Green "London's streets will be clean and green"	London's transport will be on track to be zero emission by 2050	<ul style="list-style-type: none"> High use of private car, transport emissions increasing Provide more electric vehicle charging points 					
		Streets will be greener and not too noisy	<ul style="list-style-type: none"> Rising levels of motor vehicle traffic 23,500 trees in the borough. increase biodiversity 					

Strategic Drivers	MTS Outcome	MTS Challenges	Enfield Challenges and Opportunities	Enfield's Priorities				
				Active Travel	School Travel	Private Car Impact	Public Transport	Maintain Assets
A good public transport experience	Connected "The public transport network will meet the needs of a growing London"	Between 14 and 15 million trips will be made by public transport every day	<ul style="list-style-type: none"> 1 in 5 trips originating in Enfield are undertaken by public transport Upgrades planned for London Underground Piccadilly line Enfield has a comprehensive rail network consisting of eighteen surface rail stations 					
		The public transport network will offer new connections and more frequent services	<ul style="list-style-type: none"> Support for Crossrail 2 Upgrades planned for London Underground Piccadilly line 					
	Accessible "Public transport will be safe, affordable and accessible to all"	Everyone will be able to travel safely throughout the entire transport system	<ul style="list-style-type: none"> Accessible bus stops Step-free stations 					
		The Mayor has frozen fares to make travel more affordable	-					
		Everyone will be able to travel spontaneously and independently	<ul style="list-style-type: none"> Accessible bus stops Step-free stations 					
	Quality "Journeys by public transport	Bus journeys will be quick and reliable – an	<ul style="list-style-type: none"> Bus priority Accessible bus stops 					

Strategic Drivers	MTS Outcome	MTS Challenges	Enfield Challenges and Opportunities	Enfield's Priorities				
				Active Travel	School Travel	Private Car Impact	Public Transport	Maintain Assets
	will be pleasant, fast and reliable”	attractive alternative to the car	<ul style="list-style-type: none"> Buses in Enfield are generally reliable, and rarely suffer significant delays 					
		Rail and Tube journeys will be less crowded, despite rising passenger volumes	<ul style="list-style-type: none"> Support for Crossrail 2, line and station upgrades Population growth Overcrowding occurs on parts of the rail and tube network at certain times of the day Increased passenger numbers using the tube in Enfield 					
New homes and jobs	Good Growth “Active, efficient and sustainable travel will be the best option in new developments”	Car dependency will be reduced and more people will live in well-connected areas	<ul style="list-style-type: none"> Regeneration and new development to be focused in areas with good access to sustainable modes of transport Support for Crossrail 2, line and station upgrades 					
		Across London, improved rail and bus services will improve connectivity	<ul style="list-style-type: none"> Accessible bus stops Step-free stations Support for Crossrail 2 					
	Unlocking “Transport investment will unlock the delivery of new homes & jobs”	Rail capacity to central London will increase by more than 80%, with new public transport services improving connectivity and	<ul style="list-style-type: none"> Support for Crossrail 2, line and station upgrades Development of the Upper Lee Valley Opportunity Area 					

Strategic Drivers	MTS Outcome	MTS Challenges	Enfield Challenges and Opportunities	Enfield's Priorities				
				Active Travel	School Travel	Private Car Impact	Public Transport	Maintain Assets
		reducing crowding, enabling the delivery of new homes across London						
		TfL land will, where possible, be brought forward for development	<ul style="list-style-type: none"> Need to increase borough's housing stock 					

5.2 Borough transport objectives

By considering the local context along with the local challenges, opportunities and priorities and their fit within the MTS framework of achieving more journeys made by walking, cycling and public transport and the nine MTS outcomes, this enables us to identify our local borough transport objectives to be delivered during the life of this plan to 2023 and beyond.

The local priorities are broad in nature and it is clear that, to address our priorities, we need to adopt a clear set of transport objectives over the period of the LIP. It is also vital that the adopted transport objectives are compatible with the aims and outcomes sought in the MTS, as the boroughs transport objectives will explicitly assist with meeting the MTS vision of increasing the sustainable travel mode share and reducing traffic.

These considerations are clear in Enfield's borough specific transport objectives:

Objective Ref.	Borough Transport Objective
O1	Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough.
O2	Promote safe, active and sustainable transport to and from schools.
O3	Monitor air quality and develop and deliver interventions which address local issues.
O4	Manage growing demand for on-street parking.
O5	Focus on and improve priority locations making them safer for vulnerable road users.
O6	Improve local reliability of and accessibility to the public transport network.
O7	Maintain and improve the transport network in Enfield including developing potential interventions.

Note: Objectives are listed in no particular order of priority.

Objective 1: Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough.

Context:

Enfield Council recognises that the borough has a particularly low cycle mode share and that there are real opportunities to increase the number of people cycling with great benefits to be gained.

In 2014 Enfield applied for additional funding from the Mayor's Mini-Holland fund. The Mini-Holland programme is part of the Mayor's Healthy Streets agenda to help Londoners use cars less and walk, cycle and use public transport more. It specifically addresses the demands of growth in outer London.

Enfield Council was one of three outer London boroughs awarded £30m. The Council identified a further £12m to support the project by aligning its LIP and other work programmes, securing third party contributions, and providing officer support and other benefits in kind. In total, £42m was therefore available to improve public health by delivering the Council's Cycle Enfield programme to transform cycling.

We have been delivering our works programme for the past 3 years and the following has been delivered:

- Construction of a high quality, segregated route along the A105 (Green Lanes) between Palmers Green and Enfield Town.

- Construction of the first sections of the A1010 South route between Ponders End and Park Road, with substantial completion scheduled for the end of 2018/19.
- Approval to undertake the detailed design of a scheme to continue the 4km (2.5mi) A1010 North segregated cycle route northward from Ponders End towards Bullsmoor Lane, with works scheduled to start in the summer of 2019/20.
- Approval to take detailed design of a scheme to radically improve Enfield Town centre, creating new cycle routes as well as pedestrian and public realm improvements.
- Construction of the quietway which connects the A105 and A1010 South major routes, along the Salmons Brook.
- The Quieter Neighbourhoods programme has been refocussed to follow the main road corridors, with flexibility where necessary to address local priorities. Engagement on the areas adjacent to the A105 corridor is underway, with schemes being implemented in the Wolves Lane, Connaught Gardens, Fernleigh Road and Fox Lane areas.
- Construction of cycle hubs at both Enfield Town and Edmonton Green and the rolling out of on-street cycle hangars.
- Developing an approach to dockless cycle hire including a trial.
- Organisation of events, activities and promotional campaigns to develop a borough-wide awareness of cycling, reinforced through a strong Cycle Enfield brand and an established website that forms the community focal point for the programme (including hosting engagement and consultation, activity & event booking, cycle parking requests, route planning and construction programme).

Enfield Council remains committed to the delivery of the strategy set out in our original Mini-Holland bid and summarised below. It is this comprehensive approach that will create the environment that enables cycling to become a realistic transport choice for all members of the diverse Enfield community.

Major Schemes – these form the backbone of the network, creating primary cycle routes that provide direct and convenient access to key locations. The routes along the A105, A1010 and in Enfield Town will incorporate both full and light segregation along their length. The east-west link between Enfield Town and Ponders End will incorporate elements of cycle track, light segregation and traffic calmed streets.

Secondary Cycle Routes – these routes serve to increase the density of the network, providing high quality secondary routes that connect to the primary routes.

Quieter Neighbourhoods – it is not feasible to provide direct access to a cycle route on every street. This initiative aims to create an environment that encourages more walking and cycling, creating residential streets that encourages people to connect to the secondary and primary cycle routes.

Cycle Hubs – these are proposed initially at the two major shopping centres in the borough, Enfield Town and Edmonton Green, providing key cycle parking facilities.

Severance sites – the A10 and A406 provide a barrier to active travel between the East and West of the borough. Improving the ability to cross these major roads will help provide a more cohesive network of routes.

Supportive measures – there are a range of additional measures including the delivery of behaviour change activities, provision of mini hubs and residential hangar cycle parking.

In addition to this ETP we intend to produce a series of associated Action Plans and guidance documents including a 'Cycling and Walking Strategy with Healthy Streets Action Plan'.	
Strategy	LIP objective supports
MTS outcome	<ul style="list-style-type: none"> ✓ London's streets will be healthy and more Londoners will travel actively ✓ London's streets will be safe and secure ✓ London's streets will be used more efficiently & have less traffic on them ✓ London's streets will be clean and green ✓ Active, efficient and sustainable travel will be the best option in new developments
S RTP challenges in every sub-region	<ul style="list-style-type: none"> ✓ Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners ✓ Transform the role of cycling and walking in the sub-region ✓ Meet CO² targets
S RTP North London-specific challenges	<ul style="list-style-type: none"> ✓ Facilitate and respond to growth, especially in Brent Cross/Cricklewood and the Upper Lee Valley ✓ Relieve crowding on the public transport network ✓ Manage highway congestion and make more efficient use of the road network ✓ Enhance connectivity and the attractiveness of orbital public transport ✓ Improve access to key locations and jobs and services
Enfield's Corporate Priorities (Enfield Council Corporate Plan 2018)	<ul style="list-style-type: none"> ✓ Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development. ✓ Support residents to take more responsibility and play a greater role in developing active and safe communities. ✓ Work with residents to reduce inequality across the borough and build settled communities. ✓ Build measures into all our strategies and projects that will help improve people's health. ✓ Protect and enhance the local environment, green spaces, parks and play areas and ensure that they are safe, well used and enjoyed.
Local Priorities	<ul style="list-style-type: none"> ✓ Making active travel the natural choice, particularly for those trips less than 2km in length ✓ Making more school trips safe, sustainable and healthy ✓ Reducing the impact of private vehicles on our streets

Objective 2: Promote safe, active and sustainable transport to and from schools.

Context:

For many years Enfield Council has worked with local schools and other bodies to reduce reliance on the car and to promote the healthier alternatives of walking and cycling, also promoting the use of the public transport. There are 106 schools in the borough, 70 primary schools, 6 SEN schools, 6 independent schools and 20 secondary schools generating significant levels of car based journeys at the start and end of the school day (the school run).

Nationally children's independent travel has declined over recent decades. This is partly

due to legitimate parental concerns over road danger as motor traffic is a primary cause of serious injuries and deaths among children. However, limiting children's independent travel impacts on their development and their mental and physical health, including their ability to maintain a healthy weight.

Obesity in childhood is a cause for concern to the Council. Data from Public Health England's annual National Child Measurement Programme for the school year 2015/16 estimate that in Enfield, 23.9% of Reception age children and 41% of Year 6 children are either overweight or obese. For Year 6 children, Enfield's prevalence of overweight or obesity is the sixth highest of all London boroughs.

Pedestrians and cyclists are vulnerable road users (VRUs) and have been identified as a key target group for road safety interventions. TfL analysis of collision and casualty data shows that pedestrians within the 0 - 11 and 12 - 19 age group are at high risk of being injured on London's Streets. Whereas for cyclists, risk is highest for the 12 - 19 age group. By targeting road safety interventions towards these groups at greatest risk, Enfield aims to achieve the greatest casualty reduction benefits.

The Council recognises that a holistic approach of further intervention is required. Transport improvements to support more healthy lifestyles concentrated on steps to encourage walking and cycling or the use of public transport as a mode of travel particularly to school are required to improve children's health and the environment around schools and further afield.

Enfield Council is seeking to foster increased joint working and the sharing of best practice ideas between schools as it looks to tackle the school run.

Strategy	LIP objective supports
MTS outcome	<ul style="list-style-type: none"> ✓ London's streets will be healthy and more Londoners will travel actively ✓ London's streets will be safe and secure ✓ London's streets will be used more efficiently & have less traffic on them ✓ London's streets will be clean and green ✓ Journeys by public transport will be pleasant, fast and reliable
SRTP challenges in every sub-region	<ul style="list-style-type: none"> ✓ Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners ✓ Transform the role of cycling and walking in the sub-region ✓ Meet CO² targets
SRTP North London-specific challenges	<ul style="list-style-type: none"> ✓ Manage highway congestion and make more efficient use of the road network
Enfield's Corporate Priorities (Enfield Council Corporate Plan 2018)	<ul style="list-style-type: none"> ✓ Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development. ✓ Support residents to take more responsibility and play a greater role in developing active and safe communities. ✓ Work with residents to reduce inequality across the borough and build settled communities. ✓ Build measures into all our strategies and projects that will help improve people's health. ✓ Enable people to reach their potential through access to high quality

	schools and learning; and create more opportunities for training and employment.
Local Priorities	<ul style="list-style-type: none"> ✓ Making active travel the natural choice, particularly for those trips less than 2km in length ✓ Making more school trips safe, sustainable and healthy ✓ Reducing the impact of private vehicles on our streets

Objective 3: Monitor air quality and develop and deliver interventions which address local issues.

Context:

Enfield has areas that exceed government objectives for nitrogen dioxide and PM₁₀ at busy roadside locations. As a result, we have declared the entire borough an air quality management area and are working towards meeting the government objectives.

In 2016, general motorised traffic on London's roads grew by 1.6%, with this growth largely focused on outer London where there is still available road capacity and where the public transport offer is less comprehensive. This again highlights the challenge ahead in improving air quality and achieving the Mayor's target for the active, efficient and sustainable mode share.

The only real way of reducing pollution from traffic is to reduce vehicle trips and improve the vehicle fleet to the most environmentally-friendly vehicles available. As well as modal shift, measures to reduce the number of vehicle trips include increasing the use of car clubs and car sharing.

The Council has an Air Quality Action Plan (AQAP) which sets-out the steps we are taking to improve air quality, the action plan is reviewed on a regular basis to ensure it is accurate and up-to-date.

We monitor, review and assess air quality in Enfield for pollutants known to damage health. Enfield Council is committed to reducing emissions, not just through the improvement measures set out in the AQAP and LIP, a very concerted effort is being applied across the Council's services with external partners right across the borough which will induce modal shift away from cars and reduce the need to travel.

The Mayor is developing an ambitious programme to enable London to be brought into compliance with European Union limit values at the earliest possible opportunity, with an ultra-low emission zone (ULEZ) due to be brought into operation in central London from April 2019. The Council supports the extension of the ULEZ to cover the whole of Enfield rather than just the section south of the North Circular Road.

Despite them still contributing to vehicle trips and collisions, the Council will support the uptake of electric vehicles, particularly licensed taxis and light goods vehicles, by looking to install rapid and fast charging points on arterial routes and in locations with high numbers of visitors by car, such as town centres, retail sites and leisure centres. A trial of in lamp column charging will also be investigated, as will the increased provision of publicly available charging points on private sites. This will be alongside the requirements for electric vehicle charging for new developments as set out in the emerging London Plan.

Strategy	LIP objective supports
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MTS outcome	<ul style="list-style-type: none"> ✓ London's streets will be healthy and more Londoners will travel actively ✓ London's streets will be used more efficiently & have less traffic on them ✓ London's streets will be clean and green ✓ The public transport network will meet the needs of a growing London ✓ Journeys by public transport will be pleasant, fast and reliable ✓ Active, efficient and sustainable travel will be the best option in new developments
SRTP challenges in every sub-region	<ul style="list-style-type: none"> ✓ Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners ✓ Transform the role of cycling and walking in the sub-region ✓ Meet CO² targets
SRTP North London-specific challenges	<ul style="list-style-type: none"> ✓ Manage highway congestion and make more efficient use of the road network
Enfield's Corporate Priorities (Enfield Council Corporate Plan 2018)	<ul style="list-style-type: none"> ✓ Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development. ✓ Support residents to take more responsibility and play a greater role in developing active and safe communities. ✓ Work with residents to reduce inequality across the borough and build settled communities. ✓ Build measures into all our strategies and projects that will help improve people's health. ✓ Protect and enhance the local environment, green spaces, parks and play areas and ensure that they are safe, well used and enjoyed.
Local Priorities	<ul style="list-style-type: none"> ✓ Making active travel the natural choice, particularly for those trips less than 2km in length ✓ Making more school trips safe, sustainable and healthy ✓ Reducing the impact of private vehicles on our streets ✓ Making the public transport network more accessible and the natural choice for longer trips

Objective 4: Manage growing demand for on-street parking.

Context:

Demand for travel is increasing as the numbers of residents in Enfield increases. As summarised in section 4.1 (Population and demographics) of this report there has been a population increase in recent years and this is predicted to continue. It is estimated that the projected population increase in Enfield will generate additional parking pressure and intensify the parking stress currently experienced. This needs to be effectively managed as there is simply not enough road space to safely and efficiently accommodate everyone who wishes to park or drive in Enfield today or in the future.

The Council must make complex choices about the allocation and management of on-street parking space. In making these choices, the Council must weigh up and balance the needs of different groups and on occasion, take actions that some groups do not support. The Council has a duty to promote equality for people with a disability. In terms of transport, the Council will continue to identify and act on the need for on-street disabled

parking spaces.

The Council's overall aim is to focus on mode shift and traffic reduction, making things better for the majority of people whilst minimising inconvenience to others.

In addition to this TP we intend to produce a series of associated Action Plans and guidance documents including a 'Parking Strategy and / or Action Plan'.

Strategy	LIP objective supports
MTS outcome	<ul style="list-style-type: none"> ✓ London's streets will be healthy and more Londoners will travel actively ✓ London's streets will be safe and secure ✓ London's streets will be used more efficiently & have less traffic on them ✓ London's streets will be clean and green ✓ Journeys by public transport will be pleasant, fast and reliable ✓ Active, efficient and sustainable travel will be the best option in new developments
S RTP challenges in every sub-region	<ul style="list-style-type: none"> ✓ Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners ✓ Transform the role of cycling and walking in the sub-region ✓ Meet CO² targets
S RTP North London-specific challenges	<ul style="list-style-type: none"> ✓ Manage highway congestion and make more efficient use of the road network ✓ Improve access to key locations and jobs and services
Enfield's Corporate Priorities (Enfield Council Corporate Plan 2018)	<ul style="list-style-type: none"> ✓ Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development. ✓ Support residents to take more responsibility and play a greater role in developing active and safe communities. ✓ Work with residents to reduce inequality across the borough and build settled communities. ✓ Build measures into all our strategies and projects that will help improve people's health. ✓ Protect and enhance the local environment, green spaces, parks and play areas and ensure that they are safe, well used and enjoyed.
Local Priorities	<ul style="list-style-type: none"> ✓ Making active travel the natural choice, particularly for those trips less than 2km in length ✓ Making more school trips safe, sustainable and healthy ✓ Reducing the impact of private vehicles on our streets

Objective 5: Focus on and improve priority locations making them safer for vulnerable road users.

Context:

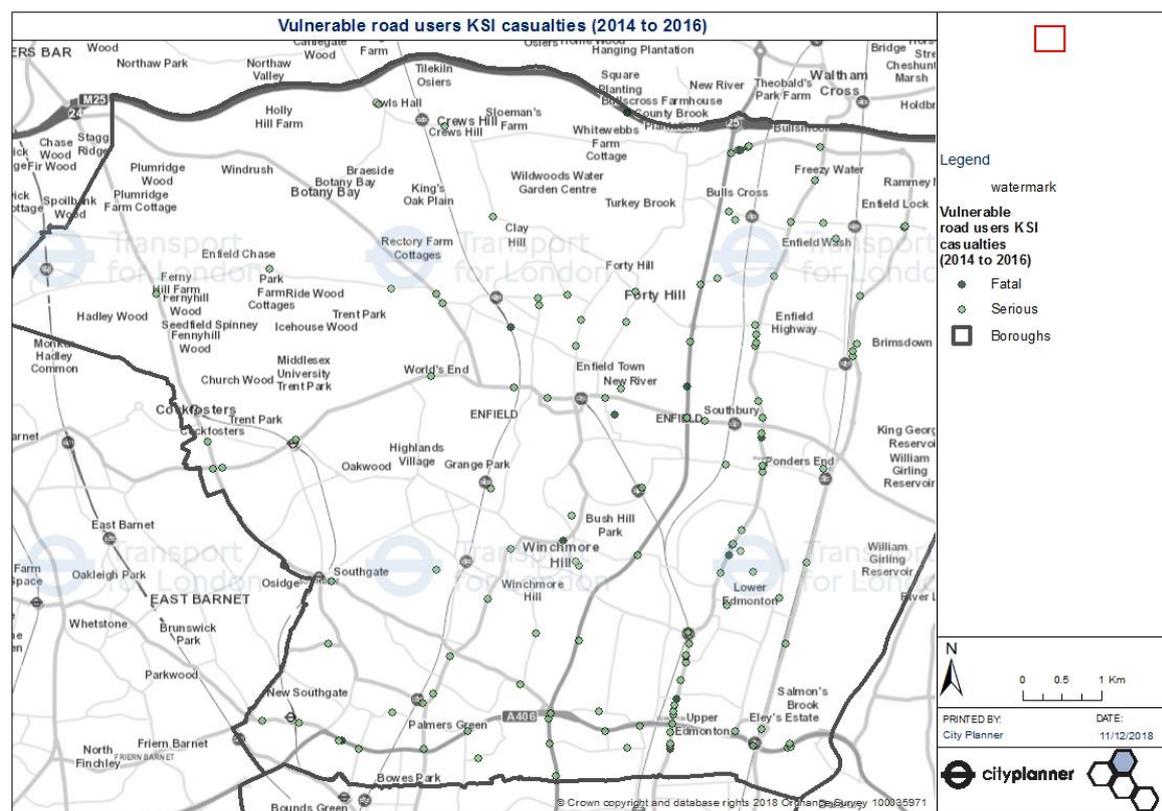
Enfield Council is continually looking to reduce the numbers of road traffic casualties that occur on the road network within the borough. We will continue to work with TfL and other partners to improve road safety delivery through the targeting of investment. As can be seen from section 4.4 (Road traffic casualties) of this report, we have done a good job in recent years of reducing the number of KSI casualties that occur within the borough. Table 4.7 shows the number of casualties that have occurred in Enfield over a ten year period

during the years 2007 – 2016. In 2007 there were 97 people killed or seriously injured on roads in Enfield. Ten years later in 2016 that number was down 25% to 73 people KSI on roads in Enfield.

Minimising road danger is a fundamental part of our TP and is required in order to create streets where everyone feels safe to walk, cycle and use public transport. Action must and will be taken to address speed/speeding, unsafe behaviour, vehicles and infrastructure.

The Mayor's Transport Strategy enshrines the ambition of Vision Zero where ultimately no one is killed or seriously injured on London's roads. The Mayor's aim is for no one to be killed in or by a London bus by 2030, and for all deaths and serious injuries from road collisions to be eliminated from London's streets by 2041.

Figure 5.1 – Vulnerable road users KSI casualties, 2014 - 2016



Source: TfL City Planner tool

Geographic analysis of collisions involving VRUs (pedestrians and cyclists) over the period 2014-2016 (shown in Figure 5.1) shows that the majority of collisions occurred on the boroughs primary and secondary road network. This is largely to be expected given the higher volumes of traffic that use these roads, greater vehicle speeds, and higher level of interaction between users. However, a number of the serious collisions involving pedestrians and cycles also occurred away from the primary and secondary road network, on what are traditionally considered to be lower volume and speed residential roads.

There are likely to be a number of factors leading to this including propensity for people to choose to walk and cycle on streets perceived to be quiet residential roads, an absence of formal controlled crossings and dedicated infrastructure for cycles, and drivers perceiving roads to be a low interaction low risk environment. These patterns highlight the need for both integrated corridor improvements on the primary and secondary road network along

with neighbourhood-based treatments to reduce the amount and speed of traffic using residential areas in the borough.

Physical transport projects are the subject of a safety audit to ensure that potential new risks are eliminated as far as practicable and existing risks reduced. In addition, the Council has several ongoing programmes which are specifically aimed at identifying the location and causes of road traffic accidents and implementing measures to reduce their frequency and severity.

Given the high percentage of KSIs in Enfield which occur on the Transport for London Road Network, we will also work with TfL to bring forward interventions, including the delivery of improved crossing facilities and the reinstatement of speed cameras on the A10.

It is envisaged that the activities covered by these programmes will continue into this delivery planning period and for the life of this LIP. However, as the number of casualties is successfully reduced, it is increasingly difficult to identify common causal factors which are susceptible to relatively simple engineering remedies. Therefore, the Council will continue to review the effectiveness of these programmes and as part of our borough programme of investment, will work to produce a new road safety Action Plan (Vision Zero Action Plan) that will look at how we can best target the resources we have available to reduce road danger, implementing Vision Zero.

Strategy	LIP objective supports
MTS outcome	<ul style="list-style-type: none"> ✓ London's streets will be healthy and more Londoners will travel actively ✓ London's streets will be safe and secure ✓ London's streets will be used more efficiently & have less traffic on them ✓ Public transport will be safe, affordable and accessible to all
SRTP challenges in every sub-region	<ul style="list-style-type: none"> ✓ Transform the role of cycling and walking in the sub-region
SRTP North London-specific challenges	<ul style="list-style-type: none"> ✓ Manage highway congestion and make more efficient use of the road network
Enfield's Corporate Priorities (Enfield Council Corporate Plan 2018)	<ul style="list-style-type: none"> ✓ Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development. ✓ Support residents to take more responsibility and play a greater role in developing active and safe communities. ✓ Work with residents to reduce inequality across the borough and build settled communities. ✓ Build measures into all our strategies and projects that will help improve people's health.
Local Priorities	<ul style="list-style-type: none"> ✓ Making active travel the natural choice, particularly for those trips less than 2km in length ✓ Making more school trips safe, sustainable and healthy ✓ Reducing the impact of private vehicles on our streets

Objective 6: Improve local reliability of and accessibility to the public transport network.

Context:

The borough is highly dependent on the public transport network. 43% of our employed residents travel to work by public transport.

At a local level Enfield will work with the bus operator and TfL to improve the reliability of services operating in Enfield.

Improving the accessibility of the public transport system is critical to delivering a better transport experience for all of our residents, including disabled people and growing numbers of older people. We aim to improve accessibility to the public transport network for all people and recognise that improvements are especially needed to enable people whose mobility is impaired for any reason to also be able to easily access the public transport network. The Council has a duty to promote equality for people with a disability. In terms of public transport, the Council will continue to engage with all residents when preparing schemes.

We will work closely with TfL to identify and implement more Bus Priority measures within the borough. We will also:

- Continue to improve access to bus services by ensuring that buses can approach the kerb closely enough to use their access ramps
- Work to improve or adapt conditions in the footway, and to ensure unobstructed level access to bus stops as our work programmes progress
- Work with the rail industry to co-ordinate improved access in the highway with improved access within the railway estate, for example when lifts or ramps are provided at stations
- Prioritise schemes to deliver a higher level of bus stop accessibility at key locations, such as major transport interchanges and key health and education hubs.

The aim being to increase the attractiveness of the public transport network, encouraging greater use of the public transport system through improving reliability and accessibility.

Strategy	LIP objective supports
MTS outcome	<ul style="list-style-type: none"> ✓ London's streets will be healthy and more Londoners will travel actively ✓ London's streets will be safe and secure ✓ London's streets will be used more efficiently & have less traffic on them ✓ London's streets will be clean and green ✓ Active, efficient and sustainable travel will be the best option in new developments
SRTP challenges in every sub-region	<ul style="list-style-type: none"> ✓ Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners ✓ Meet CO² targets
SRTP North London-specific	<ul style="list-style-type: none"> ✓ Manage highway congestion and make more efficient use of the road network ✓ Enhance connectivity and the attractiveness of orbital public

challenges	transport ✓ Improve access to key locations and jobs and services
Enfield's Corporate Priorities (Enfield Council Corporate Plan 2018)	<ul style="list-style-type: none"> ✓ Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development. ✓ Support residents to take more responsibility and play a greater role in developing active and safe communities. ✓ Work with residents to reduce inequality across the borough and build settled communities. ✓ Build measures into all our strategies and projects that will help improve people's health.
Local Priorities	<ul style="list-style-type: none"> ✓ Reducing the impact of private vehicles on our streets ✓ Making the public transport network more accessible and the natural choice for longer trips

Objective 7: Maintain and improve the transport network in Enfield including developing potential interventions.

Context:

The condition of Enfield's roads and pavements has been consistently identified by residents as a particularly important issue, and their maintenance continues to be a priority for the Council.

Everyone who travels in Enfield is affected by the condition of the highway network at some stage of their journey.

Enfield Council is the highway authority with responsibility for maintenance of most of the public highway within the borough. The exceptions are some roads and footways within private estates or parks, the M25 is maintained by Highways England and the A406 North Circular Road and A10 are both the responsibility of TfL.

We regularly inspect and maintain public roads and pavements in the borough. We also ask that resident or visitors to the borough report problems if they encounter something that is dangerous and may cause an accident. Problems such as:

- broken or loose paving stones
- damaged manhole covers
- potholes
- severe cracking
- uneven surfaces

The Council has several on-going programmes which aim to protect our transport assets and keep them available for safe and convenient use by the public. Individual projects are prioritised based on need and best practice.

The Council's Highway Infrastructure Asset Management Plan (HIAMP) explains our highway maintenance processes and procedures, policy and strategy for the period 2015 to 2020. The HIAMP ensure that the limited resources available can be used most effectively to keep our assets in a good state of repair and safe. The Highway Maintenance Plan provides information on routine, reactive and planned maintenance.

There is approximately 68km of principal roads and over 340 bridges and other structures in the borough. In previous LIP funding allocations, funding support has been provided for principal road maintenance and bridge assessment and strengthening, however, the

mayor through TfL has reduced this funding in the short term while they identify a new, long-term funding stream to support this important work. TfL has advised that they will work with London boroughs, through the London Technical Advisors Group (LoTAG), to agree a fair and transparent approach for allocating emergency funds.

In the short-term (2019/20) there is no specific funding for principal road maintenance and bridge assessment and strengthening. Routine maintenance is essential and it is hoped that TfL will act swiftly to identify a new funding stream to support this work.

We will continue our ongoing programmes of carriageway, footway and street lighting maintenance; enforcement activities to deal with unauthorised signs, highway obstructions and graffiti, as resources permit.

The Council will continue its programme of decluttering aimed at rationalising street furniture and signs in our town centres and local shopping parades.

In terms of personal security, we intend to continue our established street lighting programme and deliver many schemes to improve lighting.

Improving the quality of the road network, including the footways, is critical to ensuring the highway network in Enfield is safe, efficient and conducive to smoothing traffic flows.

By maintaining the transport network, we will be supporting objectives contained in the MTS, North London Sub Regional Transport Plan and Enfield's Corporate and local priorities.

Strategy	LIP objective supports
MTS outcome	<ul style="list-style-type: none"> ✓ London's streets will be healthy and more Londoners will travel actively ✓ London's streets will be safe and secure ✓ London's streets will be used more efficiently & have less traffic on them ✓ London's streets will be clean and green ✓ Journeys by public transport will be pleasant, fast and reliable
SRTP challenges in every sub-region	<ul style="list-style-type: none"> ✓ Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners ✓ Transform the role of cycling and walking in the sub-region ✓ Meet CO² targets
SRTP North London-specific challenges	<ul style="list-style-type: none"> ✓ Manage highway congestion and make more efficient use of the road network ✓ Enhance connectivity and the attractiveness of orbital public transport ✓ Improve access to key locations and jobs and services
Enfield's Corporate Priorities (Enfield Council Corporate Plan 2018)	<ul style="list-style-type: none"> ✓ Drive investment in rail, roads and cycling infrastructure to improve connectivity and support economic development. ✓ Support residents to take more responsibility and play a greater role in developing active and safe communities. ✓ Work with residents to reduce inequality across the borough and build settled communities. ✓ Build measures into all our strategies and projects that will help improve people's health.
Local Priorities	<ul style="list-style-type: none"> ✓ Making active travel the natural choice, particularly for those trips less than 2km in length ✓ Making more school trips safe, sustainable and healthy

	<ul style="list-style-type: none"> ✓ Reducing the impact of private vehicles on our streets ✓ Maintaining our assets for the benefit of the public
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By addressing these key local specific objectives, the ETP shows how it is also supporting the policies of the MTS, SRTP's and local priorities.

The Council is committed to supporting the Mayor of London in achieving an overarching target of 80% of trips to be made by active, efficient and sustainable modes by 2041. For Enfield this means meeting proportionate mode share targets:

Percentage of all trips to be on foot, by cycle or by public transport	Year(s)
52%	Average 2014 to 2017
55%	2021
69%	2041

In the near term, to 2021, the Council's target for increasing cycling trips from around 5,000 to 25,000, alongside improvements to the public transport network (including new rail carriages and buses), should achieve the target.

In the longer term, to 2041, it is anticipated that there will be a number of strategic interventions, including four tracking of the West Anglia Mainline, Crossrail 2 and rapid transit routes, which increase the provision of public transport in Enfield. These will be complemented by planning policies, as set out in the draft Enfield Local Plan, which promote sustainable development.

Strategic interventions should be supported by a long term programme of walking and cycling improvements as well as coordinated behaviour change initiatives which promote healthy lifestyle choices and improve local health outcomes.

6 Delivering change

This section sets out the delivery plan which outlines how the borough will achieve its LIP objectives. The centrepiece of the plan is a Programme of Investment that sets out the measures and projects designed to effect delivery of the borough's LIP objectives and the policies and proposals in the MTS. The programme will cover a period of investment and delivery that reflects the LIP funding settlement under TfL's Business Plan and will be reviewed and refreshed at three-yearly intervals.

This chapter sets out our Delivery Plan for achieving the objectives of this LIP. It includes:

- Summary of the mayor's commitments contained in the TfL Business Plan
- Project initiatives intended to be delivered over the plan period
- Linkages to Mayor's Transport Strategy priorities
- A list of potential funding sources for the period 2019/20 to 2021/22
- Long-term interventions
- Methodology for identifying new schemes
- Scheme prioritisation
- Programme consultation
- Three-year indicative Programme of Investment for period 2019/20 to 2021/22
- Risk assessment information
- Change management information
- A detailed annual programme for 2019/20

The London Borough of Enfield coordinates transport activities with neighbouring boroughs via:

- Specific initiatives such as the Mini-Holland programme.
- Spatial developments including Meridian Water, Tottenham Hotspur and Hale Village.
- Projects such as Low Emission Bus Corridors and bus priority.
- Partnerships including LoTAG and the North London Transport Partnership.

6.1 TfL Business Plan

The TfL Business Plan describes how the Mayor's programme of investment for the next five years (2018/19 to 2022/23) will begin to deliver the Mayor's commitments. The plan describes how, over the next five years, TfL will manage its resources to deliver the three core MTS themes:

Healthy Streets and healthy people

Investment will focus on improving the experience of being in the places where people live, work, go to school, spend time and travel. Reducing traffic dominance and prioritising walking, cycling and public transport use will help Londoners live active, healthy lives and help create a city that works well for its residents.

A good public transport experience

The right investment will ensure that public transport becomes an increasingly attractive alternative to using a car. Proper planning for the whole journey will help integrate public transport and street-level investment. Making sure the right services are available where people need them, reducing overcrowding and keeping fares affordable will help to reduce car dependency.

New homes and jobs

Transport improvements are vital to the creation of new homes and jobs, and can ensure that London's growth supports healthy lives. Our investment will help to create communities where local amenities are within walking and cycling distance and public transport is available for longer journeys, reducing car dependency and improving quality of life.

The Mayor's commitments contained within the Business Plan are included in Table 6.1.

Table 6.1 - Summary of Mayor's commitments as contained within TfL Business Plan 2018/19 to 2022/23

<p>Affordable transport</p> <ul style="list-style-type: none"> • Keep all TfL fares frozen until 2020 • Extend the Hopper fare • Protect all fares concessions 	<p>Making transport more accessible</p> <ul style="list-style-type: none"> • More than 40% of Tube stations step-free by 2021/22 • Improve bus stop and taxi rank accessibility • 100% step-free Elizabeth line 	<p>Safer London</p> <ul style="list-style-type: none"> • Vision Zero target for road safety • Improved safety standards for buses in London • More roads targeted in Safer Junctions programme • Improved safety standards for buses in London 	<p>Housing and regeneration</p> <ul style="list-style-type: none"> • Developing 10,000 homes on TfL land (50% affordable) • Lobby for powers to extend Bakerloo line • Crossrail 2 development • Silvertown tunnel
<p>Public transport, walking and cycling</p> <ul style="list-style-type: none"> • Better, more reliable bus journeys • Extra capacity on four Tube lines • Open Elizabeth line • More cycling and walking 	<p>Improving air quality</p> <ul style="list-style-type: none"> • ULEZ – Ultra Low Emission Zone launches • New licensing requirements for zero emission capable taxis • Purchase only green double-decker buses from 2018 	<p>Harnessing technology</p> <ul style="list-style-type: none"> • Concession products available through ticketing app • More automatic refunds for maximum fares • Oyster weekly capping 	<p>Raising commercial revenue</p> <ul style="list-style-type: none"> • More than £80m investment to upgrade our advertising estate • Build a commercial consulting business
<p>Creating attractive and iconic places</p> <ul style="list-style-type: none"> • Transform Oxford Street for pedestrians • Improve London's streets 	<p>Helping business</p> <ul style="list-style-type: none"> • More integrated deliveries • Retiming deliveries 	<p>Community/borough investment</p> <ul style="list-style-type: none"> • Significant levels of borough investment maintained 	<p>Diversity and inclusion</p> <ul style="list-style-type: none"> • A more representative workforce and senior management

6.2 Delivery of Transport Plan Objectives

Below various potential interventions are listed for each of Enfield's transport objectives. Deliverability and affordability will be key factors in determining which interventions to prioritise.

Delivering objective 1: Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough.

Initiatives to deliver this objective:

- Redesign streets to shift priority to active modes and public transport
- Improving cycle access to local facilities
- New/improved pedestrian and cycle crossings
- Overcoming severance (for example better crossings, improvements to subways or bridges, enabling cycle access)
- Additional cycle parking and seating
- Support 'Healthy Routes' through campaigns and promotional activities to encourage walking for short trips
- Cycle routes including Quietways and filtered permeability for cycling
- Adding local routes to the network
- Link or complete existing routes
- Ensure adequate width for larger cycles
- Provide parking for larger cycles
- Partner with dockless biking organisation
- Production and marketing of local mapping of walking and cycle routes
- Maximise take-up of adult cycle training
- Increase priority for sustainable modes in public places and near buildings/sites of interest (ie remove/ restrict vehicular traffic)
- Traffic calming to lower speed and reduce impact of hostile vehicles
- Improve quality and quantity of cycle parking at public transport interchanges and key local destinations

Delivering objective 2: Promote safe, active and sustainable transport to and from schools.

Actions to deliver this objective:

- Junction safety improvements (including measures to reduce speed on turning and promote pedestrian priority)
- Additional cycle parking in schools
- Provide a low-speed environment – normally 20mph on roads where children travel to school
- Communication and marketing of walking and cycling, supporting community-led schemes such as 'walking school buses'
- STARS school travel accreditation scheme: get more schools accredited and improve accreditation levels
- Work with TfL to ensure take-up of the Safety & Citizenship pre- transition safe and responsible behaviour sessions for Year 6 pupils
- Encourage secondary schools to take up the Youth Travel Ambassador programme of peer to peer campaigns to promote safe, active and responsible travel
- Maximise take-up of cycle training in schools

Delivering objective 3: Monitor air quality and develop and deliver interventions which address local issues.

Initiatives to deliver this objective:

- Engage with new businesses to encourage more commuter trips to be undertaken on foot or by bicycle
- Discourage the use of 'grey fleet' (private vehicles used for work purposes) and encourage walking, cycling and public transport as an alternative
- Work with TfL to develop plans for appropriate emergency measures to be undertaken to reduce or restrict vehicle use when forecast or actual periods of very high air pollution occur, for example, to tackle non-essential vehicle use or engine idling
- Use borough communication channels and networks to alert borough residents and visitors of high pollution events. Align messaging with TfL and Mayoral messaging
- Workplace travel plans to support employees travelling by the most sustainable modes possible (ie walking, cycling and using public transport)
- Reliable and resilient charging infrastructure to support uptake of electric vehicles with a focus on rapid and fast charging points in strategic locations
- Use the planning process and work with landowners to secure public charging provision on private land
- Reducing traffic volumes by encouraging mode shift from travelling by car to walking, cycling and public transport
- Work with TfL to promote sustainable methods of delivering construction material

Delivering objective 4: Manage growing demand for on-street parking.

Initiatives to deliver this objective:

- Reduce the impact of private cars on local streets with a focus on more effectively managing on-street parking provision
- Encourage new car-free developments in areas with good access to the public transport system, walking and cycle links
- Encourage replacement of the council 'grey fleets' with car clubs, and encourage residents and local businesses to reduce private car ownership and take up car club membership for occasional car journeys as an economical alternative to the private car where this will reduce car use and ownership
- Provide Blue Badge parking
- Managing kerbside space (such as parking and loading bays) to minimise delays to buses and remove conflict with people walking and cycling
- Ensure developments in the most accessible areas are car-free
- Ensure new developments contain high levels of access to cycle parking and storage
- Ensure developments contribute as appropriate to on-street cycle parking in town centres and other places of high demand

Delivering objective 5: Focus on and improve priority locations making them safer for vulnerable road users.

Initiatives to deliver this objective:

- Traffic management schemes and speed reduction
- Lowering speeds through street design
- Work with TfL to identify stretches of the TLRN where it may be appropriate to lower the speed limit to reduce road danger
- Prioritising road danger reduction measures at locations that pose the highest risk to vulnerable road users
- Road Safety Audits and monitoring and evaluating schemes with the use of a Traffic Accident Diary System
- Work in partnership within local communities to address the sources of danger posed by drivers/riders
- Introduce work-related road risk policies to ensure council vehicles and those driving

- on behalf of the council adhere to the highest safety standards
- Set new casualty reduction targets in line with the new target set by the Mayor
- Work with the police to help target enforcement effectively

Delivering objective 6: Improve local reliability of and accessibility to the public transport network.

Initiatives to deliver this objective:

- Ensure all bus stops are accessible
- Work with TfL to deliver improvements around stations
- Accessibility improvements (for example, dropped kerbs, tactile paving, tonal distinction between areas for pedestrians and areas for vehicles, upgrade of crossings, decluttering)
- Secure, through planning agreements, improvements to the accessibility of bus interchanges
- Places to sit for interchanges between rail and bus
- Seek contributions from new development for step-free access
- Improve visibility and signage for active, efficient and sustainable transport users
- Improve/increase seating
- Identify suitable location for different types of bus priority
- Ensure that street designs integrate well with the public transport network
- Work with TfL to deliver improvements around future Crossrail 2 stations
- Work with TfL and Network Rail to deliver improvements around Lee Valley stations
- Work with TfL to identify potential locations for demand-responsive bus services

Delivering objective 7: Maintain and improve the transport network in Enfield including developing potential interventions.

Initiatives to deliver this objective:

- Public realm improvements
- Continue to make the pedestrian environment more accessible to people with buggies, pushchairs and those using wheelchairs
- Improvements against the ten Healthy Streets Indicators
- Maximise benefits of green infrastructure by designing them to be able to accept surface water run-off from adjacent impermeable paved areas. Ensure topography of impermeable surfaces and drain levels allows maximum area to drain into SuDS feature with appropriate overflow provision
- Where possible retrofit rain gardens and other sustainable drainage features in highway improvement schemes
- Lighting improvements
- Improve access to paths
- Provide a low speed environment
- Planting and street greening for shade, shelter and more attractive environs
- Design 'in passing' surveillance and clear exit routes for public places
- Improved/increased wayfinding
- Existing trees should be retained where possible. Where tree removal is required, a suitable replanting strategy must be agreed with the appropriate arboricultural expert based on the size, condition and value of the trees removed
- New tree planting must be considered wherever possible and appropriate. Locations, pit design and tree species and specification to be agreed with the appropriate arboricultural expert
- Measures that deliver net gain in green infrastructure
- Measures that deliver a net gain in biodiversity

- Raise awareness among residents about the planning requirements around paving over front gardens and opportunities to use permeable surfacing
- Section 106 and other contributions for bus and cycling infrastructure (including street improvements)
- Capital programme for planned maintenance scheme of roads and pavements
- Reactive repairs of highway defects including potholes
- Routine maintenance for example refreshing road markings and gully cleaning

The above initiatives support delivery of local objectives, MTS proposals and policies. Most of the listed initiatives deliver more than one objective, however, they have not been duplicated. These initiatives will be incorporated within our projects to be delivered under the relevant programme throughout the period 2019/20 – 2021/22.

6.3 Linkages to the Mayor’s Transport Strategy priorities

The delivery plan was developed to align the borough’s projects and programmes with the policy framework of the MTS, the overarching mode share aim, each of the nine outcomes, and the relevant policies and proposals. Table 6.2 shows the Linkages between LIP projects and programmes and the MTS outcomes.

Table 6.2 - Linkages between LIP projects and programmes and the MTS outcomes.

Project / Programme		MTS mode share	MTS outcomes							
			Improving active, efficient and sustainable mode share	No. 1:- Active	No. 2:- Safe	No. 3:- Efficient	No. 4:- Clean & Green	No. 5:- Connected	No. 6:- Accessible	No. 7:- Quality
	Accessibility	✓	✓	✓	✓	✓	✓	✓	✓	✓
1	Bus Stop Accessibility	✓	✓	✓	✓		✓	✓	✓	✓
2	Reducing Signage Clutter			✓		✓				
3	Bus Priority	✓			✓	✓		✓		
	Air Quality	✓	✓	✓	✓	✓				
4	Delivering Air Quality Improvements	✓	✓	✓	✓	✓				
5	Air Quality Monitoring	✓				✓				
	Cycling and Walking	✓	✓	✓	✓	✓				✓
6	Cycle Enfield Quietways	✓	✓	✓	✓	✓				✓
7	Cycle Enfield Quieter Neighbourhoods	✓	✓	✓	✓	✓				✓
8	Cycle Enfield Supporting Measures	✓	✓	✓	✓	✓				✓

9	Cycle Parking	✓	✓	✓	✓	✓				✓
10	Cycle Training	✓	✓	✓	✓	✓				
11	Cycling Promotion	✓	✓	✓	✓	✓				
12	Cycling Support Activities	✓	✓	✓	✓	✓				✓
13	Rights of Way Improvements	✓	✓	✓	✓	✓				✓
14	Safer Freight			✓						
	Road Safety	✓		✓					✓	
15	Road Safety Schemes	✓		✓					✓	
16	Road Safety Engagement	✓		✓						
17	Junction Protection	✓		✓			✓	✓	✓	
	Scheme Development	✓	✓	✓	✓	✓	✓	✓	✓	✓
18	Bus Hubs and inter-bus interchange	✓	✓	✓	✓	✓	✓	✓	✓	✓
19	Bus service improvements and demand responsive services pilot	✓								
20	Car clubs				✓					
21	Controlled parking zones	✓	✓		✓	✓				✓
22	Delivering Healthy Streets	✓	✓	✓	✓	✓				✓
	Safe and Sustainable School Travel	✓	✓	✓	✓	✓				✓
23	Safe and Sustainable School Travel Projects	✓	✓		✓	✓				
24	School Travel Plans	✓	✓	✓	✓	✓				✓

25	Sustainable School Travel Measures	✓	✓	✓	✓	✓				✓
	Principal Road Maintenance			✓	✓				✓	
26	Undertake high priority principal road maintenance			✓	✓				✓	

6.4 Funding the Transport Plan

Enfield's key source of funding for the ETP is from TfL for implementation of the LIP, this currently totals nearly £10 million across the three years (2019/20 through to 2021/22). This does not include any additional funding for major schemes or other programmes such as the Mini-Holland programme from which Enfield's successful bid ('Cycle Enfield') secured £30 million over 4 years from the Mayor's cycling budget. Funding is also provided via contributions from the council's own resources and funding anticipated from other sources including Section 106 agreements and the Community Infrastructure Levy (CIL). Section 106 agreements (also known as planning contributions) are in place alongside CIL, but are limited to; site specific financial contributions required to mitigate the impact of development, affordable housing, and those items of infrastructure that fall outside of the CIL Regulation 123 list (the list specifies what Enfield's CIL will be spent on). CIL allows local authorities and the Mayor of London to charge a levy on new development in their area. Funds raised from the Levy are used to provide essential infrastructure required to support growth.

Table 6.3 identifies potential funding sources for implementation of the LIP, including our three-year (2019/20 to 2021/22) LIP funding allocation from TfL.

Table 6.3 – Potential funding for MTS delivery

Funding Source	Year			Total £k
	2019/20 £k	2020/21 £k	2021/22 £k	
Council Cycle Enfield Support	307	307	0	614
Council Highway Maintenance and Street Scene Improvements (Indicative Budget)	6,450	6,450	6,450	19,350
Developer (S106, CIL)	200	200	400	800
TfL - LIP (Corridors, Neighbourhood and Supporting Measures)	2,684	2,684	2,684	8,052
TfL – LIP (Major Schemes / Liveable Neighbourhoods)	TBC	TBC	TBC	TBC
TfL – LIP (Maintenance and Bridge Strengthening)	Funding support to be allocated based on need as informed by condition surveys			
TfL – LIP (Principal Road Maintenance)	0	1,086	1,086	2,172
TfL – Mini Holland (Mayor's cycling budget)	6,411	1,981	0	8,392
Total (£k)*	16,052	12,708	10,620	39,380

Note: TBC – To be confirmed, subject to competitive bidding process * - Funding subject to change depending on funding decisions and TfL allocation, still to be determined

The proposed levels of spend should be viewed as indicative only as the Council confirms the programme annually when further details will be provided.

6.5 Long-term interventions to 2041

In the medium to long-term the Council believes that a number of significant, but currently unfunded, investments will be required to ensure the economic and social vitality of the borough. These are shown in Table 6.4 below with indicative funding and indicative but uncommitted timescales.

Table 6.4 – Long-term interventions up to 2041

Project	Approx. date	Indicative cost	Likely funding source	Comments
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Crossrail 2	2033	£30bn	National, regional and local government, business	Crossrail through four-tracking of the Lea Valley mainline and new link to central London, Crossrail 2 supports the long-term reconfiguration and regeneration of the eastern part of the borough. It also opens up opportunities in the west of the borough via the branch to New Southgate.
Step-free Station access	TBC	TBC	The Access for All Programme, development contributions as well as contributions from CIL	Working with TfL and Network Rail, the Borough aims to deliver step-free access at all stations within the borough, our top three priority stations are: Enfield Chase, Silver Street and New Southgate.
Northern Access	TBC	TBC	TBC	TBC
Bus Rapid Transit	TBC	TBC	TBC	TBC

Note: TBC – To be confirmed

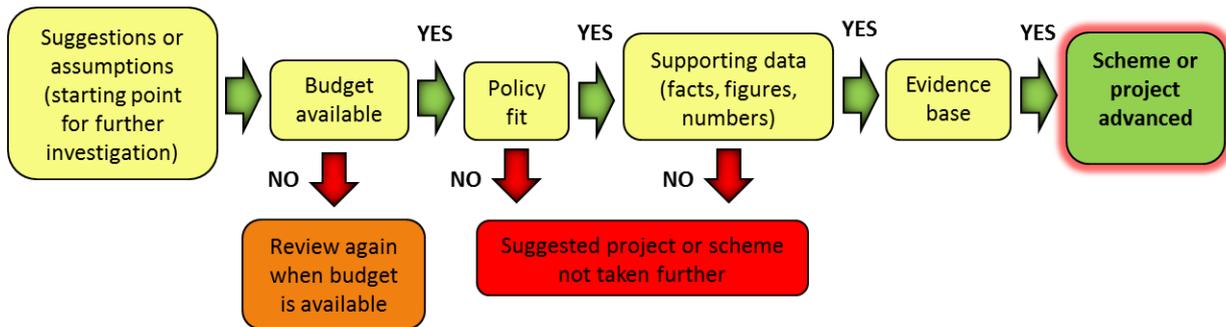
TfL manages a number of roads and services within the Borough and the Borough's improvement programme is mindful of works proposed by TfL. When we develop our investment programme we work with TfL to explore opportunities for joint working. As an example, the Borough will be continuing delivery of its Cycle Enfield project, constructing various cycle routes and cycle improvements across the Borough. We will continue to work with TfL to address severance at traffic signal sites and where new/proposed cycle routes pass through or across the TLRN. Through joint working and understanding, the Borough and TfL can work together to deliver the ETP.

Table 4.8 within Section 4 of this document provides details on a number of major transport projects that impact on travel in Enfield. Many of these projects are being delivered by TfL or has their input/involvement. Enfield recognises that these schemes will contribute to achieving the MTS outcomes to enhance transport capacity and connectivity. As part of our transport investment programme we have considered local complementary initiatives where appropriate.

6.6 Methodology for identifying new schemes

We have developed a method for identifying new schemes and determining their priority to ensure that the funding provided for transport schemes is spent wisely. Our approach helps us to decide what to spend and where to spend in order to deliver the ETP. It ensures that expenditure is prioritised on schemes which will achieve our objectives and ultimately the MTS aims, priorities and outcomes.

Scheme identification method:



We have developed and implemented an evidence based approach to scheme identification. The evidence base brings together information from different sources such as concerns raised by the community, parking hotspots, collision data, traffic speed and volume data, accessibility levels and other previous proposals. This information is then reviewed and used to identify potential transport projects. For example, if an area is shown to have high speeds (as identified by traffic speed data), speed related collisions and correspondence relating to speed, then this area would be identified for further investigation.

This data led approach is complemented by discussions across the Council and with other transport bodies, including TfL, rail operators, neighbouring boroughs, etc. to identify opportunities for joint working.

A feasibility assessment is undertaken, supported by site visits. Options are identified, scoped and priced, enabling the prioritisation process to begin.

Whole life costs are considered at this stage, so future maintenance requirements for the scheme are factored in for use during the prioritisation process.

TfL's City Planner tool has been used to display spatial statistics within this document. We intend to use this tool to assist with the identification of appropriate schemes, we plan on integrating its use into our scheme identification and decision-making process.

6.7 Scheme prioritisation

Prioritisation is a valuable, transparent process which can ensure delivery of our transport objectives in a cost effective and efficient manner. Prioritisation is essential in ensuring that limited resources are focussed on areas with the greatest need and where there is an opportunity to achieve the most.

Our approach is transparent and demonstrates why some schemes have been included in the Programme of Investment and why others have not. It gives weight to Enfield's adopted policies as well as issues identified by the public, councillors and local stakeholders. It considers the potential impact of a scheme by assessing current and likely future conditions if the scheme goes ahead. The scale of this impact is compared to scheme cost to determine value for money.

Consideration is also given to potential complementary schemes or match funding opportunities and delivery risk is assessed. All of these factors are taken into consideration enabling us to determine the best schemes to include in our programme.

The Mini-Holland programme is important to Enfield, we have some of the worst inequalities in health in the whole of the UK and spend over £80 million per year treating the consequences of obesity. The whole Borough is also an Air Quality Management Zone and motorised traffic is a major factor in those parts of the Borough with poor air quality. No other

intervention can deliver the range of outcomes and benefits that we will achieve through our Cycle Enfield Mini-Holland programme.

We need to ensure our routes connect the places that people want to travel to on a daily basis (shops, train stations, etc) and they should be accessible and feel safe at all times of day and night. Other quieter routes are also part of the overall Cycle Enfield network. Like any transport system, the network should be made up of quieter smaller routes, connecting to major routes that enable direct and convenient travel. The New River route was investigated as an option and whilst some areas could be suitable for leisure routes, it would not provide a consistent route to help people get to our town centres (there would also be a range of land ownership and access issues with a New River route).

6.8 Programme consultation

Regular and detailed meetings with the Cabinet Member for the Environment to discuss scheme priorities, progress and programme approval take place. Once all schemes have been prioritised a report is produced and the ETP (including the Programme of Investment) is taken to Cabinet for approval. Following this Cabinet agree the Programme of Investment for submission to TfL and key stakeholders for their consideration.

Enfield Council is committed to listening to what local people have to say about what they want to see happen in their area. Timescales for delivery allow sufficient time to develop a detailed design, undertake any consultation required, and address any identified issues. Consultation with statutory undertakers is undertaken at the earliest possible stage. Early liaison with the Council's legal department ensures that all required notices and orders are built into the programme.

6.9 Three-year indicative Programme of Investment

The three-year indicative Programme of Investment has been completed in Table 6.5 below. The table summarises, at a programme level, the borough's proposals for the use of TfL borough funding in the period 2019/20 – 2021/22. Depending on funding availability, their effectiveness and fit with the outcomes of the MTS, the scheme areas identified in the annual programme for 2019/20 (see 6.12) will continue until 2021/22.

Table 6.5 - Borough Programme of Investment (period 2019/20 – 2021/22).

London Borough of Enfield TfL BOROUGH FUNDING 2019/20 TO 2021/22	Programme budget		
	Allocated 2019/20	Indicative 2020/21	Indicative 2021/22
Local transport initiatives	£100k	£100k	£100k
CORRIDOR, NEIGHBOURHOODS & SUPPORTING MEASURES	£k	£k	£k
Accessibility	80	80	80
Air Quality	56	56	56
Cycling and Walking	2,006	2,006	2,006
Road Safety	210	210	210
Scheme Development	138	138	138
Safe and Sustainable School Travel	94	94	94
Principal Road Maintenance	0	1,086	1,086
Sub-total	£2,684k	£3,770k	£3,770k

DISCRETIONARY FUNDING	£k	£k	£k
Liveable Neighbourhoods	TBC	TBC	TBC
Major Schemes	0	0	0
Principal road renewal	0	0	0
Bridge strengthening	0	0	0
Traffic signal modernisation	TBC	TBC	TBC
Sub-total*	£2,684k	£3,770k	£3,770k
STRATEGIC FUNDING*	£2,684k	£3,770k	£3,770k
Bus Priority	TBC	TBC	TBC
London cycle grid	0	0	0
Crossrail complementary works	0	0	0
Mayor's Air Quality Fund	TBC	TBC	TBC
Low Emission Neighbourhoods	0	0	0
Sub-total*	£2,684k	£3,770k	£3,770k
All TfL borough funding*	£2,684k	£3,770k	£3,770k

Note: TBC – To be confirmed, * - Funding subject to change depending on funding decisions and TfL allocation, still to be determined

6.10 Risk assessment

In implementing this plan there are risks which we must be aware of and plan for. At the strategic level the drive and support for the Programme of Investment must be maintained but it is also essential to consider variations in funding availability.

Table 6.6 identifies a range of risks and mitigation measures relating to the delivery of the overall Programme of Investment (LIP programme), and the achievement of outcomes.

As part of our risk assessment process, programme delivery will be monitored at bi-monthly meetings in order to identify and resolve any problems as soon as they occur. If it is apparent that there are significant risks to timescales and / or costs, it is possible to re-prioritise design work so that abortive costs are minimised.

Table 6.6 - Programme Risks and Mitigation Measures

Risk	Mitigation Method / Measure
Policy compatibility, alignment and scrutiny	<p>Regular and detailed meetings with the Cabinet Member for the Environment to discuss scheme priorities, progress and programme approval.</p> <p>Regular engagement with internal stakeholders including those working in highways, public health, policy development, strategic planning and regeneration.</p> <p>Programme and scheme level engagement including with elected members and residents.</p> <p>Discussions with the Public Transport Consultative Group (PTCG); that includes elected members from two political parties (Labour and Conservative).</p> <p>Together these mitigations should ensure a spread of schemes across policy areas and will ensure that we are delivering across the full range of intended targets and outcomes with an equitable distribution of investment across the different areas of the borough. There is a risk that a scheme may not meet its initial objectives as it could be changed through the delivery process.</p>

Risk	Mitigation Method / Measure
	Our change management process will mitigate this risk.
Resource to plan, design and implement the programme	Identification of a reserve/ contingency list of schemes in order to ensure efficient use of funding and resources if initially prioritised schemes cannot proceed or are delayed.
Delays to progress of work	Timescales for delivery should allow sufficient time to develop a detailed design, undertake consultation and to address any identified issues. Consultation with statutory undertakers is undertaken at the earliest possible stage. Early liaison with the Council's legal department ensures that all required notices and Orders are built into the programme.
Cost increases/ budget reductions	<p>Scheme budgets are set before detailed design, therefore scheme costs can vary as the schemes are developed, even though contingencies are included.</p> <p>Scheme costs are reviewed internally on a bimonthly basis and any variations in cost are reported to the Capital Programme Manager and the relevant Director. Any variations must go through our change management process. Permission may then be given to transfer funds from one budget to another to ensure the highest priority projects are completed, while staying within the overall budget.</p> <p>Where a scheme experiences delays, funding may be transferred to the next highest priority scheme.</p> <p>Progress in managing risks will be monitored and reported as part of a continuous cycle so that losses are minimised and intended actions are achieved.</p> <p>Directors and key staff will review their risks at least quarterly at their Departmental Management Team meetings so that the whole management team is aware of the key risks faced by the service/ department and the mitigations in place to control them.</p> <p>The Corporate Management Board will review the Corporate Risk Register on a quarterly basis.</p>
Political	Each scheme feasibility design is approved by the portfolio holder for the Environment before going out for consultation.
Stakeholder support	<p>A percentage of our Programme of Investment budget will be based on contributions from partner organisations.</p> <p>Early consultation is undertaken in advance of detailed design, so that any fundamental issues are addresses as early as possible.</p>
Traffic signals	Schemes that involve making changes to traffic signals (TfL controlled) require forward planning and have long lead in times for changes.
Works that impact on the Strategic Road Network	<p>Works on the Strategic Road Network (SRN) require approval from Network Assurance (TfL). It may be that their aspirations are different from ours.</p> <p>Schemes located on the SRN will be programmed over a longer time period to ensure there is sufficient time to gain the appropriate approvals to deliver the scheme.</p>

6.11 Change management

The importance of effective change management should not be underestimated as funding for the programme of investment is fixed. This means that any overspend on a particular project in a given year will directly affect the ability of the Council to deliver the other agreed projects in the programme scheduled for the same or future years.

Changes to a scheme, its allocation or works, can sometimes be necessary. The delivery programme may change due to a variety of factors and require schemes to be redefined, rescheduled, or removed from the programme. Should this occur, there may be an opportunity to introduce 'substitute' schemes to fill any resulting gaps in the programme. In order to anticipate and manage potential changes to the programme a formal review meeting with the Cabinet Member for the Environment would be held.

Where a 'gap' in the programme arises, the scheme with the next highest priority in the delivery programme should be brought forward as a matter of course. However, this will be subject to deliverability factors and it may be necessary to go further down the list to find a project that can be delivered within the available budget, to the required timescales and in an efficient manner. Any scheme changes will have to meet our transport objectives and the Cabinet Member for the Environment has the authority to approve changes to the programme of investment.

6.12 Annual programme of schemes and initiatives

The annual programme of schemes (Proforma A) has been completed and submitted to TfL via the Borough Portal. A copy of the submitted programme for 2019/20 is included in **Appendix E**. The programme of schemes will be updated annually.

The programme includes a range of proposals in each area:

Scheme Area	Proposals	Current Allocation (£,000s)
Bus Stop Accessibility	Highway works to provide level access to bus stops.	50
Signage Decluttering	Removal of street furniture and signs which obstruct pedestrians and cyclists, distract road users or use non-essential lit elements.	30
Delivering Air Quality Improvements	Delivery of the statutory Air Quality Action Plan and Mayor's Air Quality Fund projects.	41
Air Quality Monitoring	Support for 3 static air quality monitoring stations and mobile monitoring.	15
Cycle Enfield Quieter Neighbourhoods and Quietways	Delivery of Quieter Neighbourhoods and Quietway with the current programme being: <ul style="list-style-type: none"> • Quietway Links 3, 5 and 7. • Work on 6 Quieter Neighbourhoods. • School Streets. 	1,560

	<ul style="list-style-type: none"> • Neighbourhood connectors. 	
Cycle Enfield Supporting Measures	<p>Programme made up of:</p> <ul style="list-style-type: none"> • Supporting measures including cycle parking mini-hubs, festivals and community events and cycling events for specific target groups, e.g. over 50s. • Monitoring of uptake of cycling. • Delivery of the Cycle Enfield wayfinding strategy. 	140
Cycle Parking	Installation of cycle hangars and Sheffield stands or equivalent.	54
Cycle Training	Provision of Bikeability nationally accredited cycle training to adults and children.	175
Cycling Promotion	Promotion and marketing activities to highlight ongoing cycling support activities (as distinct from Cycle Enfield specific activities).	27
Cycling Support Activities	<p>Projects which support people to cycle:</p> <ul style="list-style-type: none"> • Dr Bike sessions. • Cycle maintenance classes. • Guided rides. 	50
Safer Freight	<p>Implementing the Enfield Safer Freight & Fleet Action Plan including:</p> <ul style="list-style-type: none"> • Promotion of the Freight Operator Recognition Scheme. • Exchanging Places events. • CPC Safe Urban Driver Training. 	10
Road Safety Schemes	Schemes will be identified following work in 2018/19 to identify priority interventions.	150
Junction Protection	Design and delivery of schemes which ensure emergency access is unobstructed.	50

Programme, Project and Scheme Development	Areas of work identified include: <ul style="list-style-type: none"> • Delivering Healthy Streets at a local level. • Design and implementation of parking controls to make most efficient use of limited kerbside space. • Developing an approach to car clubs. • Electric vehicle charging infrastructure. 	138
Safe and Sustainable School Travel	School travel planning, in school road safety activities and the identification of physical measures to support modal shift and reduce the highway impact of schools on local areas.	60
School Travel Measures	Design and delivery of physical measures around schools to encourage walking and cycling.	34

Supporting commentary for the annual programme

The main elements by value (£1,560k) of the Annual Programme of Investment (API) relate to the delivery of Cycle Enfield infrastructure in the form of Quieter Neighbourhoods and Quietways. These schemes have been subject to a separate identification and prioritisation process as part of the refreshed Cycle Enfield Business Case which was published in late 2017. Given the breadth of the programme there is some flexibility with regard to timescales and capacity so that delivery can be matched to available funding each year. Consultation is undertaken on a scheme by scheme basis.

These interventions are complemented by the £140k Cycle Enfield Supporting Measures programme which includes a range of activities which spread the sustainable and active travel message so that people are encouraged to walk and cycle:

- Marketing of services available
- Stakeholder engagement
- Bike markets
- Wayfinding improvements

Alongside this there is a budget of £306k for ongoing activities which have, for a number of years, supported people to cycle:

- Cycle training
- Cycle parking
- Cycle maintenance sessions
- Promotion

These supporting measures have been developed as part of the overarching Cycle Enfield strategy. They are cost-effective and allow a broad reach with the potential to target them to specific groups and support other Council initiatives.

School travel has been identified as an area where there are significant opportunities for achieving mode shift away from private car use. To support this the £94k School Travel programme includes funding to support schools with STARS accreditation, deliver practical improvements such as new cycle parking, and promote road safety through national and regional campaigns.

There is also an ongoing commitment to improving road safety across the borough, in line with Vision Zero aspirations, with £150k for schemes which address locations with high levels of KSIs. With this there is funding for Safer Freight initiatives, which include events and training targeted at reducing the number of collisions involving vulnerable road users. There is also funding to improve road signage and remove clutter, which is not only unsightly but also causes confusion and distraction for drivers. Finally, junction protection works are an important local priority with small schemes ensuring that emergency services can get access as demand for kerb space intensifies.

Dedicated funding for improving the accessibility of bus stops has been maintained so that the most accessible mode is within the reach of more users of the network. This long-term programme has seen over 90% of all bus stops being made accessible.

Reductions in car use arising from the overall LIP programme will see improvements in air quality. However, funding is still retained to support specific initiatives, such as green walls at schools, and ongoing monitoring. Better air quality is a growing priority for residents and, given the role of transport, it is appropriate for some LIP funding to be used quantifying and address existing issues.

Finally, to make sure that the Council is in a position to respond to the challenges and opportunities identified in both the MTS and this LIP, there is £138k for developing new interventions including undertaking feasibility work, conducting pilots and supporting early delivery. Areas of work will include parking interventions, electric vehicle charging, locally Healthy Streets and better interchanges.

Given that the interventions for 2019/20 form part of a longer-term programme of investment the role of revenue-based investment, policy decisions, and third-party actions (including commitments outlined in TfL's Business Plan and Investment Programme) in delivering the borough's LIP objectives, as well as how the Mayor's priorities will be supported at a local level, are covered elsewhere in the ETP.

Risk assessment for the annual programme

Table 6.7 below shows the principal risks associated with delivery of the ETP together with possible mitigation actions for the annual programme. The risk register summarises the strategic risks identified that could impact on the annual programme of schemes / initiatives.

Table 6.7 – Risk Assessment for annual programme – 2019/20

Risk	Likelihood			Potential mitigation measures	Impact if not mitigated
	H	M	L		
Financial					
Further reduction in general funding levels available from TfL, the Council's own resources, or from third parties.		✓		Consider re-prioritisation of remaining funding and/or lower cost solutions where possible. Consider extending planned delivery period for LIP programme as a whole.	Mitigation may have limited effect as some aspects of LIP programme may well not proceed if reprioritisation is necessary.

Increases in programme or individual project costs.		✓	Use effective project management techniques to keep control of project costs. Where costs are unavoidable, reduce project scope or reprioritise funding from other projects or programmes.	Project or programme may not fully meet objectives. Some aspects of the LIP programme may well not proceed if re-prioritisation is necessary.
Statutory / Legal				
Council is required to “implement” its LIP under s151 of the GLA Act without sufficient external funding support.		✓	Explore possibility for legal challenge, if possible jointly with other affected bodies.	Unknown, as this provision has never been challenged. In the worst case there could be a severe impact on other Council services.
Third Party				
Partners or stakeholders do not implement projects for which they hold the lead responsibility.		✓	Engage in lobbying activity, jointly with other local authorities and others. Consider re-prioritisation of borough funding to support lower cost projects.	LIP and Mayoral objectives may not be achieved, with potential adverse impact on economic vitality, road congestion, public transport overcrowding etc.
Public / Political				
Individual schemes do not receive public support at the consultation stage.		✓	Ensure adequate engagement at the earliest possible stage. Consider scheme redesign to overcome objections.	Scheme may not proceed. Impact will depend on original objectives of scheme.
Individual schemes do not get political or senior management approval.		✓	Ensure adequate engagement at the earliest possible stage. Elected members are closely involved, through the Public Transport Consultative Group (PTCG). Consider scheme redesign to overcome objections.	Scheme may not proceed. Impact will depend on original objectives of scheme.
Programme & Delivery				
Reduction in staff resources to plan and deliver the LIP programme.	✓		Possibly use agency staff, charged direct to individual projects.	Delivery period for the LIP programme may be extended, or projects may not proceed.
Projects and programmes do not deliver expected outputs.		✓	Scheme benefits need to be reviewed and confirmed at each stage of project. Consider scheme or programme modifications if there is “early warning” of failure to deliver outputs.	LIP or Mayoral objectives may not be achieved.
Delays to individual projects caused by political and senior	✓		Amend scheme design. Reprogram expenditure to bring forward other LIP	Depending on length of delay, programmes may still be achieved within the

<p>management sign-off which impacts upon the delivery of the programme, can add considerable staff cost and affect morale.</p>			<p>projects to fill the “gap”.</p>	<p>LIP period. Delivery period for the LIP programme may be extended, or projects may not proceed.</p>
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7 Performance monitoring

Monitoring is an essential element of the ETP and the LIP process. Delivery indicators are set by TfL but monitored by the boroughs. Enfield is required to collect this information and submit it to TfL (using pro forma C) on an annual basis. The delivery indicators provide a reference for the delivery of the MTS at a local level and the information is used to provide responses to questions from Members of the London Assembly, the public and special interest groups concerning London-wide delivery.

It is recognised that individual boroughs will contribute to the Mayor's aspiration in different ways and the monitoring of strategic data is essential to measure the success of progress throughout the plan period. As detailed in this chapter, the monitoring process consists of two parts:

- Outcome Indicators - Boroughs are required to set targets against the overarching mode share aim and outcome indicators set out in the MTS.
- Delivery Indicators - are set by TfL, but monitored by the boroughs. Boroughs are required to collect this information and submit it to TfL on a quarterly basis using a specific pro forma.

The SEA recommended that monitor of the environmental effects of the final Transport Plan and LIP be undertaken, therefore, we will look to undertake monitoring of a range of indicators including the London Sustainable Development Commission Quality of Life indicators which relate to transport. We will also consider programme and scheme specific indicators where clearly identified non-transport outcomes are being pursued.

7.1 Outcome indicator

TfL will collect strategic data on behalf of the borough for 13 indicators for the overarching mode share aim and 9 outcomes. This information is set out below in Table 7.1.

The targets that we have set are in line with the requirements identified by TfL for Enfield. We accept that these targets are ambitious for the borough, but believe that through the implementation of this plan, delivery of the transport improvements and major infrastructure mentioned herein, through sustainable land use planning and with the help and assistance of, and good partnership working with TfL, transport operators, neighbouring boroughs and other key stakeholders these targets can be achieved. We will check our trajectory year on year and amend the programme if required in order to positively alter our path and hopefully get us back on track.

Table 7.1 – Borough outcome indicator targets

Objective	Metric	Borough target	Target year	Additional commentary
Overarching mode share aim – changing the transport mix				
Londoners' trips to be on foot, by cycle or by public transport	Active, efficient and sustainable (walking, cycling and public transport) mode share (by borough resident) based on average daily trips. Base period 2013/14 - 2015/16.	(55%) 69%	(2021) 2041	Measure: LTDS borough residents mode share
Healthy Streets and healthy people				
Outcome 1: London's streets will be healthy and more Londoners will travel actively				
All Londoners to be doing a healthy level of activity through travel	Londoners to do at least the 20 minutes of active travel they need to stay healthy each day by 2041.	(35%) 70%	(2021) 2041	Measure: LTDS borough residents. Proportion (%) of Enfield residents doing at least two x 10 minutes of active travel a day (or a single block of 20 minutes or more)
Londoners have access to a safe and pleasant cycle network. Walking or cycling will be the best choice for shorter journeys	Proportion of Londoners living within 400m of the London-wide strategic cycle network.	(30%) 61%	(2021) 2041	% of Enfield residents. GIS analysis and Strategic Cycling Analysis
Outcome 2: London's streets will be safe and secure				
Deaths and serious injuries from all road collisions to be eliminated from our	65% reduction in KSIs by 2022 on the 2005-09 baseline.	68	2022	Measure: 65% reduction in KSIs by 2022 on the 2005-09 baseline. Casualties KSIs according to

Objective	Metric	Borough target	Target year	Additional commentary
streets				STATS19 data
	70% reduction in KSIs by 2030 on the 2010-14 baseline.	45	2030	Measure: 70% reduction in KSIs by 2030 on the 2010-14 baseline. Casualties KSIs according to STATS19 data
	0 KSIs by 2041.	0	2041	Measure: Casualties KSIs according to STATS19 data
Outcome 3: London's streets will be used more efficiently and have less traffic on them				
Reduce the volume of traffic in London.	Vehicle kilometres in given year. Base year 2015. Reduce overall traffic levels by 10-15 per cent.	(-5% = 1,640 -10% = 1,640) -5% = 1,558 -10% = 1,476	(2021) 2041	Measure: DfT road traffic statistics
Reduce the number of freight trips in the central London morning peak.	10 per cent reduction in number of freight vehicles crossing into central London in the morning peak period (07:00am - 10:00am) by 2026.	N/A	N/A	N/A

Objective	Metric	Borough target	Target year	Additional commentary
Reduce car ownership in London.	Total cars owned and car ownership per household, borough residents. Quarter of a million fewer cars owned in London. Base period 2013/14 - 2015/16.	(124,200) 122,800	(2021) 2041	Measure: Household car ownership, number of licensed vehicles by borough
Outcome 4: London's streets will be clean and green				
Reduced CO ₂ emissions.	CO ₂ emissions (in tonnes) from road transport within the borough. Base year 2015/16.	(335,100) 153,900	(2021) 2041	A 72 per cent reduction in carbon dioxide (CO ₂) emissions from transport (excluding aviation) by 2041
Reduced NO _x emissions.	NO _x emissions (in tonnes) from road transport within the borough. Base year 2013.	(510) 110	(2021) 2041	A 94% reduction in road transport NO _x emissions by 2041
Reduced particulate emissions.	PM ₁₀ and PM _{2.5} emissions (in tonnes) from road transport within borough. Base year 2013.	(PM ₁₀ 103) PM ₁₀ 67 (PM _{2.5} 50) PM _{2.5} 34	(2021) 2041	A 45% reduction in road transport PM ₁₀ emissions by 2041. A 53% reduction in road transport PM _{2.5} emissions by 2041
A good public transport experience				
Outcome 5: The public transport network will meet the needs of a growing London				
More trips by public transport - 14-15 million trips will be made by public transport every day by 2041.	Trips per day by trip origin. Reported as 3yr moving average. Base year 2013/14 - 2015/16.	(181) 256	(2012) 2041	Measure: Increased number of trips per day by public transport.

Objective	Metric	Borough target	Target year	Additional commentary
Outcome 6: Public transport will be safe, affordable and accessible to all				
Everyone will be able to travel spontaneously and independently.	Reduce the difference between total public transport network journey time and total step-free public transport network	Full network – 76 Step-free network - 82	2041	Measure: Reduce on average, the difference between total network and step-free network journey times by 50% by 2041. Average journey time using the full and step-free network (minutes)
Outcome 7: Journeys by public transport will be pleasant, fast and reliable				
Bus journeys will be quick and reliable, an attractive alternative to the car	Annualised average bus speeds, base year 2015/16	(5%: 10.4 15%: 10.7) 5%:10.8 15%: 11.9	(2021) 2041	Measure: Bus speeds will improve by approximately 5 % to 15% London-wide by 2041, with particular improvements expected in inner London. Average bus speeds from ibus in mph
New homes and jobs				
Outcome 8: Active, efficient and sustainable travel will be the best options in new developments				
Outcome 9: Transport investment will unlock the delivery of new homes and jobs				

Data will be provided on a borough basis to monitor progress against the achievement of the MTS outcomes. The data will be published annually in a series of Travel in London reports.

7.2 Delivery indicator

Delivery indicators are set by TfL, and monitored by TfL, GLA or the boroughs. Boroughs are required to collect information and submit it to TfL on a quarterly basis using a specific pro forma. The purpose of the pro forma (form) is to capture and report the details of various measures and interventions delivered through LIP-funded projects in the previous year. Delivery indicator information to be gathered is contained in the below table.

Objective	Metric	Data provider
MTS Priority: Healthy Streets and healthy people		
Outcome 1: London's streets will be healthy and more Londoners will travel actively		
Increase in cycle parking facilities <ul style="list-style-type: none"> on-street off-street 	Number of spaces added in given year - differentiate between on-street and off-street spaces added. Note that a single stand (e.g. Sheffield) counts as 2 spaces	Borough
Improved facilities for walking and cycling	Number of new or upgraded pedestrian / cycle crossing facilities provided	Borough
Outcome 2: London's streets will be safe and secure		
Lower speed limits	% of borough road network with 20mph limit	Borough
Deliver danger reduction improvements to the highway network and ensure robust monitoring of road safety infrastructure schemes	Number of completed infrastructure schemes and % entered into Traffic Accident Diary System (TADS)	Borough
Deliver a programme of training and education to improve the safety of vulnerable road users	Number of people delivered training (e.g. BikeSafe-London, 121 Motorcycle skills)	Borough
Deliver a programme of training and education to improve the safety of vulnerable road users	Number of adults receiving cycle training: <ul style="list-style-type: none"> Trained to Basic cycle skills level Trained to Urban cycle skills level Trained to Advanced cycle skill level 	Borough
Deliver a programme of training and education to improve the safety of vulnerable road users	Number of children receiving cycle training: <ul style="list-style-type: none"> Trained to Bikeability level 1 Trained to Bikeability level 2 Trained to Bikeability level 3 	Borough
Deliver a programme of training and education to improve the safety of vulnerable road users	Number of children receiving pedestrian skills training	Borough
Deliver a programme of training and education to improve the safety of vulnerable road users	Number and proportion of STARS schools – bronze, silver and gold	Borough
Outcome 3: London's streets will be used more efficiently & have less traffic on them		
Support the provision of car clubs, where it reduces car use and ownership	Number of car club bays provided or secured by the borough	Borough

Deliver a London-wide strategic cycle network, with new, high-quality, safe routes and improved infrastructure	Kilometres of new or upgraded cycle routes	Borough
Outcome 4: London's streets will be clean and green		
Increase number of publicly accessible electric vehicle charging points	Number implemented	Borough
Incorporate sustainable drainage infrastructure into schemes	The effective area (m ²) of impermeable surface (carriageway/footway/cycle lane/car park, etc) that drains into the SuDS feature	Borough
MTS Theme: A good public transport Experience		
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		
Upgrade and maintain network of accessible bus stops	% of stops accessible in borough	Borough
Outcome 7: Journeys by public transport will be pleasant, fast and reliable		
Improve bus journey time reliability with bus priority improvement projects	Number completed Minutes saved by schemes completed	TfL
MTS Theme: New homes and jobs		
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		
Proportion of housing units in areas within PTALs 3-6 or within 800m of a Tube station, rail station or town centre boundary: <ul style="list-style-type: none"> • Approved • Started on-site • Completed 	Number of units	GLA
Proportion of new A1, A2 and B1 development in areas within PTALs 3-6 or within 800m of a Tube station or town centre boundary: <ul style="list-style-type: none"> • Approved • Started on-site • Completed 	Gross floor area m ²	GLA
Proportion of referred applications: <ul style="list-style-type: none"> • Above London Plan car parking standard • At London Plan car parking standard • Below London Plan car parking standard 	% of referred applications in each category (at Stage 2 or 3)	GLA
Proportion of referred applications: <ul style="list-style-type: none"> • Above London Plan parking standard • At London Plan parking standard • Below London Plan parking standard 	% of referred applications in each category (at Stage 2 or 3)	TfL / GLA

The Performance Monitoring chapter sets out how the borough intends to monitor the effectiveness of the ETP and delivery of the LIP. Setting and monitoring key targets and indicators will guide the Council and TfL in determining whether the LIP Policies and Programme of Investment are effective in attaining the Borough Transport Objectives and the Mayor's Transport Strategy aspirations. If the annual report on interventions and outputs reveals underperformance against the targets, a number of steps can be taken; these could include review of policies and the Programme of Investment and/or restructuring of perspectives and aspirations.

Appendix A

Transport Plan Consultation

The Borough undertook a public consultation exercise between 30/07/2018 and 30/09/2018. The consultation appeared on the borough's website and was available for any member of the public to respond to.

E-mails advising that the consultation was being undertaken were also specifically sent to various voluntary and community sector organisations on our database, working with and representing groups with protected characteristics:

- People with physical/mental disabilities
- Learning difficulties
- BAME
- Young and Old people
- Over 50's Forums
- Chronic obstructive pulmonary disease (COPD)
- LGBT (lesbian, gay, bisexual, and transgender)
- Enfield Youth Parliament (EYP)

The following nine neighbouring Local Authorities including three London Boroughs were sent draft copies of this document:

- Barnet Council
- Broxbourne District Council
- Epping Forest District Council
- Essex County Council
- Haringey Council
- Hertfordshire County Council
- Hertsmere Borough Council
- Waltham Forest Council
- Welwyn Hatfield Borough

Early engagement took place with TfL, several meetings were held at Enfield Council offices and initial views were provided by staff working for TfL.

In total 15 responses were received at this stage. Where relevant the document was amended and a final draft version of the ETP including LIP was sent out to TfL, the Police Commissioner and neighbouring local authorities (statutory consultees) on 02/11/2018. A further 2 responses were received following statutory consultation. After receipt of TfL's response on the adequacy of the LIP and other statutory requirements, the Council duly amended the LIP in response to the consultation, including additionally providing information as suggested in TfL's response.

The Borough has taken into account all the statutory duties and processes as set out in the requirements in the GLA Act in the preparation of this LIP.

The borough has met its statutory duty by conducting a Strategic Environmental Assessment (SEA) and, as recommended, an Equality Impact Assessment (EqIA) on the proposals contained in this LIP. The LIP Outcomes and programmes has been assessed for both purposes.

Appendix B

Equalities Impact Assessment

7th September 2018

Report for – London Borough of Enfield
Local Implementation Plan
Equalities Impact Assessment Report

Final



Document version control

Version	Date	Author	Reviewed by	Reviewed and approved by
0.1	30/8/2108	Jonathan Say	David Sutano	Chris Ferrary
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1.0 Introduction

1.1 Overview of the Local Implementation Plan (LIP)

The London Borough of Enfield's third Local Implementation Plan 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 Strategy² 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.
- **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), Enfield's Local Plan 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 Enfield Transport Plan (ETP), which incorporates the next LIP, 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

² Mayor of London (2018) – **Mayor's Transport Strategy** - Greater London Authority, March 2018

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.

The assessment presented in this report is based on the draft of the LIP that was received by Temple and Steer on 24th July 2018. It should be noted that the EqIA is not based on detailed proposals for schemes and actions, as these will be developed as they come forward for implementation in coming years. As such, this document contains more of an aggregate analysis, and Enfield Council will need to continue to have regard to the duties place on them by the Equalities Act 2010 as they bring forward specific proposals for implementation (See also **Section 1.3** following).

1.2 Summary of the LIP

The plan identifies the following seven transport objectives, that will be the focus of the London Borough of Enfield LIP:

1. **Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough:** Enfield Council recognises there are real opportunities to increase the number of people cycling in the borough. In 2014 Enfield applied for additional funding from the Mayor's Mini-Holland fund, part of the Mayor's Healthy Streets agenda to help Londoners use cars less and walk, cycle and use public transport more. It specifically addresses the demands of growth in outer London. Enfield Council remains committed to the delivery of the strategy set out in its Mini-Holland bid. This comprehensive approach will create the environment that enables cycling to become a realistic transport choice for all members of the diverse Enfield community.
2. **Promote safe, active and sustainable transport to and from schools:** For many years Enfield Council has worked with local schools and other bodies to reduce reliance on the car and to promote the healthier alternatives of walking and cycling, also promoting the use of the public transport. There are 102 schools in the borough, 70 primary schools, 6 SEN schools, 6 independent and 20 secondary schools generating significant levels of car-based journeys at the start and end of the school day.
3. **Monitor air quality and develop and deliver interventions which address local issues:** Enfield has areas that exceed government objectives for nitrogen dioxide and PM₁₀ at busy roadside locations. As a result, the council declared the entire borough an air quality management area and is working towards meeting Government objectives. The only real way of reducing pollution from traffic is to reduce vehicle numbers and improve the vehicle fleet to the most environmentally-friendly vehicles available. The council monitors, reviews and assesses air quality in Enfield for pollutants known to damage health and is committed to reducing emissions.
4. **Manage growing demand for on-street parking:** Demand for travel is increasing as the numbers of residents in Enfield increases. It is estimated that the projected population increase in Enfield will generate additional parking pressure and intensify the parking stress currently experienced. This needs to be effectively managed as there is simply not enough road space to safely and efficiently accommodate everyone who wishes to park or drive in Enfield today or in the future.
5. **Focus on and improve priority locations making them safer for vulnerable road users:** Enfield Council is continually looking to reduce the numbers of road traffic casualties that occur

on the road network within the borough. The council will continue to work with TfL and other partners to improve road safety delivery through the targeting of investment. Minimising road danger is a fundamental part of the plan and is required to create streets where everyone feels safe to walk, cycle and use public transport. Actions will be taken to address speed/speeding, unsafe behaviour, vehicles and infrastructure.

6. **Improve local reliability of and accessibility to the public transport network:** Enfield is highly dependent on the public transport network. 43% of employed residents in the borough travel to work by public transport. Improving the accessibility of the public transport system is critical to delivering a better transport experience for all Enfield's residents, including disabled people and growing numbers of older people. Enfield Council aims to improve accessibility to the public transport network for all people. At a local level the council will work with bus operators and TfL to improve the reliability of services operating in Enfield.
7. **Maintain and improve the transport network in Enfield including developing potential interventions:** The condition of Enfield's roads and pavements has been consistently identified by residents as a particularly important issue, and their maintenance continues to be a priority for the council. Everyone who travels in Enfield is affected by the condition of the highway network at some stage of their journey. Enfield Council will continue their ongoing programmes of carriageway, footway and street lighting maintenance; enforcement activities to deal with unauthorised signs, highway obstructions and graffiti, as resources permit. The council will continue its programme of decluttering aimed at rationalising street furniture and signs in our town centres and local shopping parades. In terms of personal security, Enfield Council intend to continue their established street lighting programme and deliver many schemes to improve lighting. Improving the quality of the road network, including the footways, is critical to ensuring the highway network in Enfield is safe, efficient and conducive to smoothing traffic flows.

1.3 Purpose of this report

This report details the methodology and findings of an Equality Impact Assessment (EqIA) of the London Borough of Enfield's LIP.

Enfield Council has "general public body duties" under equalities legislation and statutory duties to promote equality arising from the Equality Act 2010.

The purpose of undertaking an EqIA is to help ensure the strategy does not discriminate against any individual or community and to promote equality for all, where possible. The EqIA identifies the potential impacts and any disproportionate effects on Target Equalities Groups because of the implemented strategy and reports committed mitigation measures to reduce negative impacts and increase benefits to maximise positive equality outcomes.

Under the 2010 Act, the council's duties apply to groups with protected characteristics as the grounds upon which discrimination is unlawful. The protected characteristics are age; disability; gender; gender reassignment; marriage and civil partnership; pregnancy and maternity; race/ethnicity/ nationality; religion/belief; and sexual orientation.

The public sector equality duty placed on Enfield Council by §149 of the 2010 Act requires that:

- *"A public authority must, in the exercise of its functions, have due regard to the need to—*
 - *eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act;*

- *advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and*
- *foster good relations between persons who share a relevant protected characteristic and persons who do not share it.*
- *Having due regard to the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to—*
 - *remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic;*
 - *take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it; and*
 - *encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.*
- *The steps involved in meeting the needs of disabled persons that are different from the needs of persons who are not disabled include, in particular, steps to take account of disabled persons' disabilities.*
- *Having due regard to the need to foster good relations between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to—*
 - *tackle prejudice, and*
 - *promote understanding.*
- *Compliance with the duties in this section may involve treating some persons more favourably than others; but that is not to be taken as permitting conduct that would otherwise be prohibited by or under this Act.”*

The 2010 Act identifies a number of Protected Characteristics Groups (PCG) for consideration within EqIAs, as follows:

- **Age:** A person of a particular age or persons of the same age group, i.e. children (0-4); younger people (aged 18-24); older people (aged 60 and over);
- **Disability:** A person with physical or mental impairment which has a substantial and long-term adverse effect on that person's ability to carry out normal day-to-day activities, i.e. disabled people;
- **Gender reassignment:** A person in the process of transitioning from one gender to another;
- **Marriage & civil partnership:** A person in a civil partnership or marriage between same sex or opposite sex.
- **Pregnancy & maternity:** A person who is pregnant or expecting a baby and a person who has recently given birth;

- Race: A person defined by their race, colour and nationality (including citizenship) ethnic or national origins, i.e. Black, Asian and minority ethnic (BAME) groups;
- Religion & belief: A person with religious and philosophical beliefs including lack of belief
- Sex: A man or a woman, recognising that women are more frequently disadvantaged; and
- Sexual orientation: A person's sexual orientation towards persons of the same sex, persons of the opposite sex or persons of either sex.

Transport for London (TfL) in other studies has more specifically identified seven Target Equalities Groups of Londoners³ which relate to these categories in the 2010 Act, i.e.:

- Older Londoners (aged 65 and over) covered under Age;
- Younger Londoners (aged 24 and under) also covered under Age;
- Disabled Londoners covered under Disability;
- Black, Asian and minority ethnic groups covered under Race/ethnicity/nationality and Religion/belief in the Act;
- Women covered under Gender and Pregnancy and maternity in the Act;
- Lesbian, gay, bisexual and transgender Londoners covered under Sexual orientation and Gender reassignment; and
- Londoners on lower incomes (with household income of less than £20,000 pa), not identified as a PCG in the Act, but included in this assessment

In addition to promoting equality, an effective EqIA assists in achieving a more cohesive relationship and increased transparency between policy makers and Londoners. It means that equality issues are considered in policy development, contributing to better access, safety, security and health, as well as promoting greater equality of opportunity and assisting in improving quality of life for residents and communities in line with legislation and policies.

1.4 Report Structure

The method for completing the EqIA has been defined by three key steps:

- Scoping and defining – the assessment area is defined, and Equalities Groups that may be impacted by the scheme are identified, along with the equalities determinants most relevant for each group;
- Information gathering – socio-demographic profiling is undertaken and scheme proposals and consultation findings are summarised to provide a knowledge base for the analysis; and
- Assessment and action planning – potential impacts during implementation of the strategy are identified, and findings from other assessments pulled together to determine the scale of impact on specific vulnerable groups. Mitigation measures are suggested, where necessary.

³ Transport for London (2015) – **Travel in London: Understanding Our Diverse Communities** – A Summary of Existing Research –pp.5.

The outcomes of each step are reported within the following sections of this EqIA report:

- **Section 2:** Scoping and defining the EqIA;
- **Section 3:** Information gathering; and
- **Section 4:** Assessment and Action Planning.

The overall conclusions of the assessment are summarised in **Section 5:** EqIA Conclusions and findings.

2.0 Scoping and defining

2.1 Introduction

This section defines the scope of the EqIA by identifying Equalities Groups relevant to the assessment, identifying equalities determinants and defining the geographical areas that will be affected by the LIP.

This first stage of the EqIA considered the Equalities Groups for their relevance in relation to the LIP, by identifying how each Equalities Group may be affected, based on professional judgement and widely available evidence on the issues faced by Equalities Groups.

Next, a range of issues (equality determinants) that may arise as a result of the project for Equalities Groups were identified. The equality determinants were categorised in relation to transport issues.

The assessment area was then defined, so that the relevant socio-demographic data for the area can be reported.

Equalities Groups are considered in terms of how they may be impacted by the strategy, on the basis of professional judgement and published evidence on the issues faced by specific Equalities Groups. The issues (equality determinants) that may affect these groups because of the LIP also are identified for the policy areas considered in it, i.e.:

- Encouraging more cycling and walking;
- Promoting safe, active and sustainable transport to and from schools;
- Monitoring air quality and deliver interventions which address local air pollution from transport;
- Managing growing demand for on-street parking;
- Improving priority locations to make them safer for vulnerable road users;
- Improving local reliability of and accessibility to public transport; and
- Maintaining and improving roads in Enfield.

2.2 Protected Characteristic Groups (Target Equalities Groups)

The groups considered in the EqIA have been identified on the basis of guidance set out in the Equality Act (2010). This requires the Council generally in developing the LIP to consider whether it is likely to result in impacts on the groups with Protected Characteristics as set out in the 2010 Act. In addition, the assessment includes one additional group from the TfL Equalities Groups.

Table 2.1 following sets out why each group has been considered in this EqIA.

Table 2.1 Relevance of Equalities Groups in the London Borough of Enfield LIP EqIA

Equalities Group	Relevant equalities determinant themes	Considerations
Age	Safety Infrastructure Transport Access Environment	Travel needs, behaviour and barriers faced differ between age groups. This assessment focuses on those most vulnerable to discrimination, i.e. children under 16 and older people over 65. Children focus on accessing education and recreational facilities. They are particularly vulnerable to accidents, and need special consideration when designing schemes / access diversions etc. They tend to be inexperienced, unconfident with change and need special consideration in information provision. They also are prone to loss of concentration because of noise. Older people focus on accessing services such as healthcare, while also wishing to retain independence and/or social interaction. Older people often face barriers to access, including perceived safety and confidence issues. They often have specific travel requirements due to limited mobility. Travel information needs specifically to consider the needs of this group in terms of access to new technologies, which is significantly lower than the population at large, and increasing overlap with the needs of people with disabilities.
Disability	Safety Infrastructure Transport Access Environment	The Disability Equality Duty in the Disability Discrimination Act (DDA) continues to apply under the Equality Act 2010. Under this, disabled people have rights of access to public transport, as well as a right to information about transport in formats accessible to them. This EqIA will consider the range of likely barriers faced and requirements of disabled people compared with able-bodied people (e.g. requiring access to medical facilities more frequently; reliance on specific local community facilities for social interaction). Disabled people may be deterred from travelling due to difficulties with physical access to the transport system, understanding public transport information if visually or hearing impaired, perceived safety issues, and a lack of confidence using transport services. The provision of accessible information (i.e. in large font text, Braille), ramps, guard railing, textured paving and removal of street clutter will be particularly important design considerations. 90% of disabled Londoners report that their disability limits their ability to travel and disabled Londoners travel less often than non-disabled Londoners as a result.
Marriage and civil partnership	Safety Infrastructure Transport Access	Issues relating to this group may include fair employment practices, access to specific services and safety and security issues due to hate crimes.

Equalities Group	Relevant equalities determinant themes	Considerations
Pregnancy and maternity	Safety Infrastructure Transport Access Environment	Pregnant women and mothers may be affected by employment practices, temporary disability whilst pregnant, specific travel requirements (i.e. travelling whilst pregnant or with children and prams), needing more frequent and regular access to medical and childcare facilities. Also, due to greater time spent at home during the working day undertaking caring duties can result in disproportionate impacts of policies, for example noise and vibration.
Ethnicity and/or nationality	Safety Infrastructure Transport Access	The needs and impacts felt by different ethnic groups vary significantly. Black and Minority Ethnic (BME) groups and immigrants may experience difficulties in accessing information if English is not their first language. They may require access to specific educational establishments or language schools. Public transport is also frequently relied upon by BME groups to access essential services. Personal safety and security issues are a specific concern for this group due to the perceived threat of racist attacks or hate crime.
Faith	Safety Infrastructure Transport Access Environment	The religion/faith of an individual may impact on their needs and access requirements. This may include accessing several different religious establishments or specialist food stores on different days of the week and times of day. In addition, actual or perceived safety relating to prevalence of hate crimes in an area can be an issue for this group. Some faith groups have specific travel requirements, e.g. the need to walk to places of worship rather than used motorised travel modes. Places of worship may also be particularly sensitive receptors for noise impacts.
Gender	Safety Infrastructure Transport Access	The different issues, barriers and priorities for women and men may include not discriminating against employees because of their gender, ensuring both men and women have the same access to educational facilities, and considering safety and security issues for travelling as research has shown that women experience more perceived safety issues when travelling alone than men.
Sexual orientation	Safety Infrastructure Transport Access Environment	Issues relating to this group may include fair employment practices, access to specific services and safety and security issues due to hate crimes.

Equalities Group	Relevant equalities determinant themes	Considerations
Gender reassignment	Safety Infrastructure Transport Access	Issues relating to this group may include fair employment practices, access to specific services and safety and security issues due to hate crimes.
Londoners on lower incomes	Safety Infrastructure Transport Access Environment	People with low incomes travel less frequently than other Londoners. When they do travel, they are more likely to walk or use buses. They are more concerned about anti-social behaviour on public transport than the average Londoner and are less likely to have access to the internet or feel comfortable using a smartphone, making it harder to obtain travel information. The cost of travel is more likely to be a barrier for working people in this group. However, the TfL definition of low income households includes higher income older people and disabled people who can use the Freedom Pass for free travel, as well as other people eligible for travel discounts (e.g. job seekers), who will be less affected by fare changes. Research has also indicated that people on low incomes can be disproportionately exposed to environmental effects such as poor air quality and excessive noise levels depending on where they live and work.

2.3 Equalities determinants

A range of potential equalities issues (“Equalities Determinants”) in relation to the LIP, and taking account of regulatory and policy requirements, have been identified. **Table 2.2** following sets out the equalities determinants relevant to the LIP and the six key themes identified in **Paragraph 2.1.2** above.

Table 2.2: Equalities Determinants

Theme	Determinant	Equalities Groups										
		Age	Disability	Marriage/ civil partnership	Pregnancy/ maternity	Race/ ethnicity/ nationality	Faith	Gender	Sexual Orientation	Gender reassignment	Low Income	
Access	Access to key services including:											
	• Employment;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Education;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Health care;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Open spaces;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Food and other shopping;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Social and community facilities;	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• Places of worship;						✓					
	• Child care; and	✓		✓	✓			✓				
	• Transport (all modes).	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Language services		✓			✓	✓					
	Access to information on public transport and highway construction/maintenance activities:	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• In a variety of languages;		✓			✓						
	• In easy to read formats / large print/ Braille etc.	✓	✓			✓						✓
	• In hard copy as well as online.	✓	✓			✓						✓
	Severance (design of the scheme, traffic diversions, construction activities etc.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Severance between communities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reducing physical and perceived environmental impacts.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

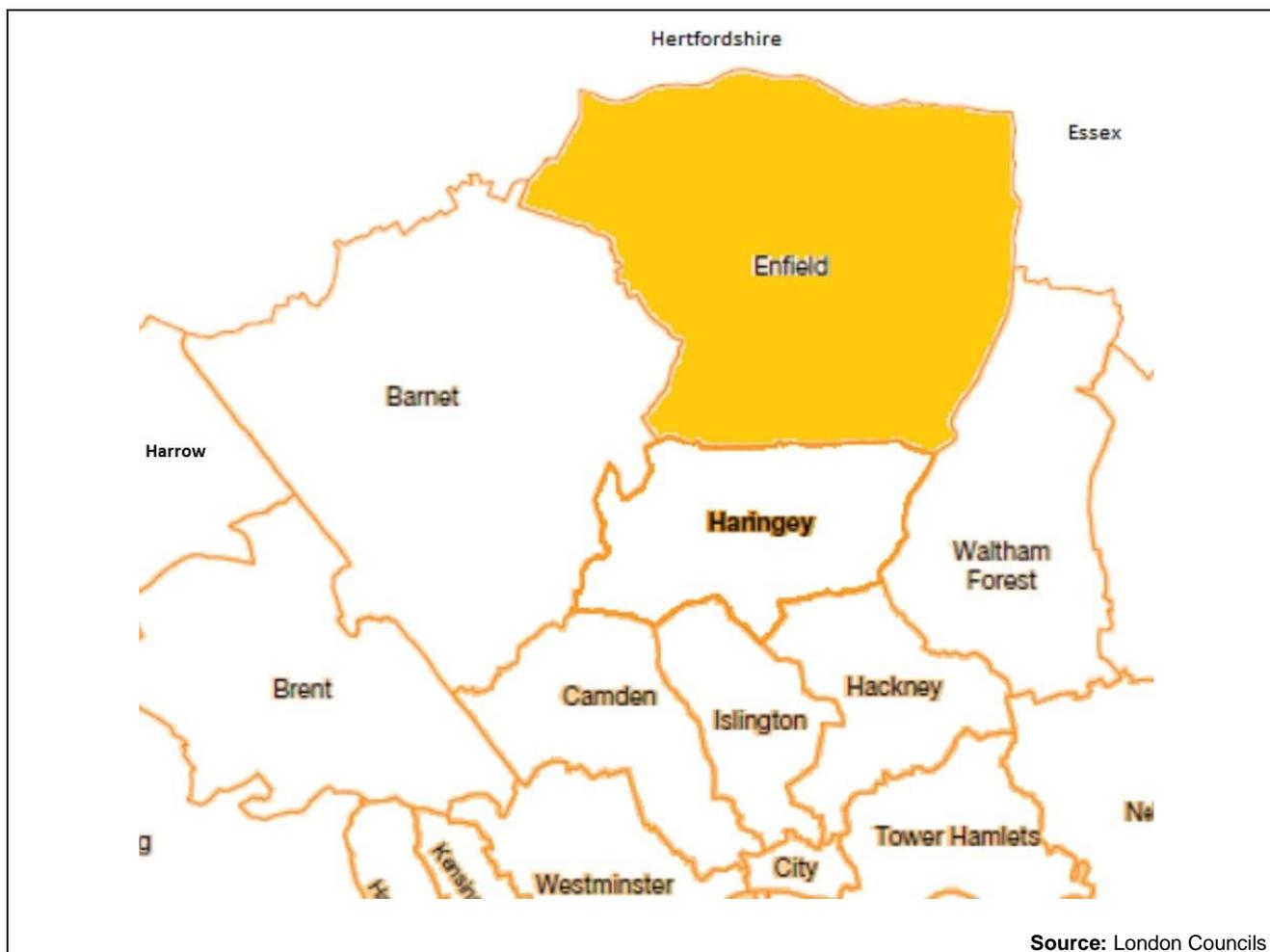
Theme	Determinant	Equalities Groups									
		Age	Disability	Marriage/ civil partnership	Pregnancy/ maternity	Race/ ethnicity/ nationality	Faith	Gender	Sexual Orientation	Gender reassignment	Low Income
Economy	Creation of employment opportunities/improved access to jobs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environment	Noise effects from transport:										
	• At all times	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	• During the daytime	✓	✓		✓		✓				
	Air quality effects during construction and operation	✓	✓		✓						✓
	Townscape and visual effects	✓	✓			✓	✓				
	Water resources and flood risk during construction, transport operation and maintenance works	✓	✓		✓						✓
Safety and Security	Archaeology and historic environment during construction, transport operation and maintenance works.					✓	✓				
	Need for physically safe access routes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Need for access routes that improved perceived safety and security	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Effect on safety and security associated with changes in transport provision, particularly for vulnerable users	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Theme	Determinant	Equalities Groups									
		Age	Disability	Marriage/ civil partnership	Pregnancy/ maternity	Race/ ethnicity/ nationality	Faith	Gender	Sexual Orientation	Gender reassignment	Low Income
Infrastructure	Accessible design requirements, particularly at stations, bus stops and on vehicles.	✓	✓		✓	✓					

2.4 Defining the assessment area

The spatial scope for the EqlA is the London Borough of Enfield area. The EqlA also takes account of potential impacts on adjoining boroughs and counties as appropriate. **Figure 2.1** following shows a map of the London Borough of Enfield area.

Figure 2.1: London Borough of Enfield Area and adjoining areas



Source: London Councils

The LIP includes policies that cover the period up to 2023. This is therefore also the timeframe for the EqlA.

3.0 Information gathering

3.1 Overview

The population of the London Borough of Enfield was just over 314,000 at the 2011 Census. This is estimated to have risen to 337,698 at mid-2018, an increase of over 7.5%, making Enfield the 5th largest amongst the 33 London boroughs.

3.2 Age

The age profile of people living in Enfield is shown in **Table 3.1** and illustrated in **Figure 3.1** following:

Table 3.1: Age Group Breakdown for Enfield compared with London as a Whole

Age group	% of Population	
	Enfield	Greater London
0 to 4	7.4	6.9
5 to 9	7.5	6.8
10 to 14	6.8	5.8
15 to 19	6	5.2
20 to 24	5.9	6.4
25 to 29	7.4	9.1
30 to 34	7.8	9.7
35 to 39	7.6	8.8
40 to 44	6.8	7.2
45 to 49	6.8	6.6
50 to 54	6.9	6.2
55 to 59	5.8	5.3
60 to 64	4.4	4.2
65 to 69	3.6	3.4
70 to 74	3.2	3
75 to 79	2.5	2.1
80 to 84	1.9	1.6
85 and over	1.8	1.6

Source: Greater London Authority

Figure 3.1 Age Group breakdown projections for Enfield



As can be seen, Enfield has slightly higher proportions in younger and older age groups, and fewer people in working-age groups when compared with London as a whole. The fastest growing population locally is typically among working age people aged between 30 and 50. The number of people aged 65 and over has typically been declining. Although future population trends are highly uncertain, population growth locally seems mostly due to an increase life expectancy and net gain from international migration, principally from EU states in Eastern and Southern Europe.

3.3 Disability

The 2011 Census indicated that in Enfield, there were 29,312 households where at least one person had a long-term health problem or disability, representing 24.4% of the total. Health and well-being in Enfield typically are higher than the London average. Life expectancy rates in Enfield are increasing and are expected to improve further. Health inequalities are most evident in the more deprived areas in the east of the Borough where people tend to experience the poorest health. Mental illness, levels of physical activity and obesity are a greater concern in more deprived parts of the borough. Men who live in the most deprived areas in the borough die on average 5 years younger than those in more affluent areas. Also, health inequalities are more prevalent among groups with protected characteristics.

3.4 Race, ethnicity and nationality

The population of Enfield is very diverse, with almost two-thirds of people living in the borough from ethnic minority backgrounds. Many of those identifying in the 'other white' category living the

borough are from the Greek, Turkish or Cypriot communities, which make up around 15% of the population. The School Census results indicate Enfield pupils recorded themselves under 95 different ethnic codes making the area one of the most ethnically diverse places in the country. The breakdown of Enfield's population by ethnicity is indicated in **Table 3.2** following:

Table 3.2: Ethnic makeup of London Borough of Enfield 2018

Ethnicity	Number	%
White - British	113,898	33.7
White - Irish	6,750	2.0
Other White	70,841	21.0
White and Black Caribbean	6,078	1.8
White and Black African	3,345	1.0
White and Asian	5,244	1.6
Other Mixed	7,377	2.2
Indian	12,376	3.7
Pakistani	2,967	0.9
Bangladeshi	6,526	1.9
Chinese	2,918	0.9
Other Asian	15,040	4.5
Black African	33,197	9.8
Black Caribbean	18,897	5.6
Other Black	11,025	3.3
Arab	2,415	0.7
Other ethnic groups	18,804	5.6
<i>Total</i>	<i>337,698</i>	<i>100</i>

Source: London Datastore

3.5 Gender, pregnancy and maternity

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

The number of births, fertility rates and comparisons are shown in Table 3.3 following. From this, it can be seen that fertility rates are notably higher than those for Greater London and nationally.

Table 3.3: Live births, General Fertility Rates⁴ and Total Fertility Rates⁵ 2017

Area	Live Births	GFR	TFR
Enfield	4,778	68.3	1.93
Greater London	126,308	62.9	1.70
England and Wales	646,794	61.2	1.76

Source: ONS

3.6 Sexual orientation and gender reassignment

Table 3.4 following sets out the recorded information available at the Greater London and UK levels:

Table 3.4: Representation of LGBT (%)

LGBT	Greater London	UK
Heterosexual	89.9	93.5
Lesbian/gay/bisexual	2.5	1.5
Other	0.4	0.3
Don't know/refusal/non-response	7.2	4.7

Source: ONS - Integrated Household Survey 2012

No reliable data on the number of transgender people at local or national level are currently available. However, the EqIA has considered representation of this group within the assessment to ensure any likely impacts arising because of the LIP are considered.

3.7 Religion and belief

Table 3.5 sets out the breakdown of religious belief among people living in Enfield.

Table 3.5: Population by Religion 2016

Religion	Enfield		Greater London		Great Britain	
	Number	%	Number	%	Number	%
Christian	157,800	48.3%	4,057,000	46.8%	34,328,800	54.7%
Buddhist	In 'other religion' below	In 'other religion' below	99,100	1.1%	281,000	0.4%
Hindu	12,200	3.7%	446,000	5.1%	960,100	1.5%
Jewish	5,500	1.7%	178,300	2.1%	298,700	0.5%
Muslim	55,100	16.9%	1,246,300	14.4%	3,292,300	5.2%
Sikh	In 'other religion' below	In 'other religion' below	127,400	1.5%	411,500	0.7%

⁴ GFR = Live births per 1,000 women aged 15-44.

⁵ TFR = Average number of children born if women experience age-specific fertility rates in 2017.

Other religion	23,600	7.2%	189,000	2.2%	1,029,100	1.6%
No religion	72,500	22.2%	2,328,700	26.9%	22,136,700	35.3%
Total	326,800	100%	8,671,700	100.0%	62,738,100	100.0%

Source: ONS Annual Population Survey

As can be seen, the Borough has a greater proportion of people expressing religious belief than London as a whole and at national level. There is a greater proportion of Christians than at the London level, but less than the national level. The proportion of Muslims is higher than both London-wide and national levels.

3.8 People on Lower Incomes

The London Borough of Enfield ranks as one of the most deprived local authorities in the country with pockets of extreme deprivation in the east of the area, where the Lower Super Output Areas (LSOA) are among the 10% most deprived in England. Enfield is the 64th most deprived borough in England and the 12th most deprived in London.

4.0 Assessment and Action Planning (Mitigation)

4.1 Assessment

In this section, the likely impacts of the strategy are considered in the light of the baseline data described in **Section 3** above to provide an assessment of its effects on the various equalities groups as set out in **Table 4.1** on the following pages.

The EqIA recognises that the impacts of the strategy will be experienced by all sections of the population living and working in the areas within the London Borough of Enfield and beyond that are affected by the strategy. However, the requirements of the EqIA focus only on the equalities groups identified in the 2012 Act, and people on low incomes, as identified in **Section 1.2** above.

The assessment considers the overall impact of the policy for the Public Sector Equality Duty for the council in terms of whether proposals of the LIP:

- Could result in any direct/indirect discrimination for any group that shares the relevant protected characteristics;
- Help to advance equality of opportunity between groups who share a relevant protected characteristic and those who do not. This includes:
 - Removing or minimising disadvantage suffered by persons protected under the Equality Act;
 - Taking steps to meet the needs of persons protected under the Equality Act that are different from the needs of other groups; and
 - Encouraging people protected under the Equality Act to participate in public life or in any other activity in which participation by such persons is disproportionately low.
- Help foster good relations between groups who share a relevant protected characteristic and those who do not.

4.2 Action Planning (Mitigation)

Action planning in this context means the development of measures to mitigate and/or manage any identified discriminatory effects of the proposed scheme, so that these can be avoided or reduced to acceptable levels. Also, this provides an opportunity to identify positive effects of the scheme, so that these can be actively promoted. Changes recommended to the LIP because of the EqIA may be made in terms of:

- **No major change to the proposal:** the EqIA demonstrates the proposal is robust and there is no potential for discrimination or adverse impact. All opportunities to promote equality have been taken.
- **Adjust the proposal:** the EqIA identifies potential problems or missed opportunities. In this case, the it may be recommended the policy or proposal is adjusted to remove barriers or better promote equality.

- **Stop and remove the proposal:** the proposal shows actual or potential avoidable adverse impacts on different protected characteristics. The decision maker must not make this decision.

These actions are identified in the 'Approach and Mitigation' column in **Table 4.1** following.

Table 4.1: EqlA Summary Table

Issue	Potential Impacts	Equalities Groups Affected	Proportionality	Impact* (+ / -)	Approach and Mitigation
Encouraging more cycling and walking	Less traffic congestion Safer roads Less air pollution and noise Greater participation in physical exercise	Older Londoners	Disproportionate	+	The potential impacts of these policies are likely to benefit people in many of the protected groups, e.g. the health benefits to many older and/or disabled people with respiratory illnesses will be greater than for the general population. No mitigation measures required as no adverse or discriminatory impacts identified.
		Children and younger people	Disproportionate	+	
		People with disabilities	Disproportionate	+	
		Pregnant women and parents	Disproportionate	+	
		People from BAME groups	Proportionate	+	
		Faith groups	Proportionate	N	
		Women, people identifying as LGBT	Proportionate	+	
		Londoners on lower incomes	Proportionate	+	
Promoting safe, active and sustainable transport to and from schools	Less traffic congestion Safer roads Less air pollution and noise Greater participation in physical exercise	Older Londoners	Proportionate	+	The potential impacts of these policies are likely to benefit people in many of the protected groups, e.g. the health benefits for children from greater participation in active travel will be greater than for the general population. No mitigation measures required as no adverse or discriminatory impacts identified.
		Children and younger people	Disproportionate	+	
		People with disabilities	Proportionate	+	
		Pregnant women and parents	Proportionate	+	
		People from BAME groups	Proportionate	N	
		Faith groups	Proportionate	N	

		Women, people identifying as LGBT	Proportionate	+	
		Londoners on lower incomes	Proportionate	+	
Monitoring air quality and deliver interventions which address local air pollution from transport	Less air pollution	Older Londoners	Disproportionate	+	The potential impacts of these policies are likely to benefit people in many of the protected groups, e.g. the health benefits to many older and/or disabled people with respiratory illnesses will be greater than for the general population. No mitigation measures required as no adverse or discriminatory impacts identified.
		Children and younger people	Disproportionate	+	
		People with disabilities	Disproportionate	+	
		Pregnant women and parents	Disproportionate	+	
		People from BAME groups	Proportionate	+	
		Faith groups	Proportionate	N	
		Women, people identifying as LGBT	Proportionate	+	
		Londoners on lower incomes	Proportionate	+	
Managing growing demand for on-street parking	Less congestion Urban realm improvements	Older Londoners	Disproportionate	+	The potential impacts of these policies may benefit some of the protected groups, e.g. older and/or disabled people may be afforded greater priority in parking allocations. There may be an adverse impact on car owners in Enfield with lower incomes due to increases in parking charges. The impact of this should be examined in more detail before any scheme is implemented, to ensure that any
		Children and younger people	Proportionate	N	
		People with disabilities	Disproportionate	+	
		Pregnant women and parents	Disproportionate	+	
		People from BAME groups	Proportionate	N	
		Faith groups	Proportionate	+	

		Women, people identifying as LGBT	Proportionate	+	disproportionate adverse impacts is outweighed by the benefits of any proposal.
		Londoners on lower incomes	Proportionate	-	
Improving priority locations to make them safer for vulnerable road users	Improved road safety	Older Londoners	Disproportionate	+	Some protected groups, i.e. older people, children and disabled people are more vulnerable road users, and will disproportionately benefit from improvements in road safety. No mitigation measures required as no adverse or discriminatory impacts identified.
		Children and younger people	Disproportionate	+	
		People with disabilities	Disproportionate	+	
		Pregnant women and parents	Disproportionate	+	
		People from BAME groups	Proportionate	+	
		Faith groups	Proportionate	+	
		Women, people identifying as LGBT	Proportionate	+	
		Londoners on lower incomes	Proportionate	+	
Improving local reliability of and accessibility to public transport	Improved and more reliable access to facilities.	Older Londoners	Disproportionate	+	These policies will benefit protected groups with a greater reliance on public transport than the public at large to a disproportionate extent. No mitigation measures required as no adverse or discriminatory impacts identified.
		Children and younger people	Disproportionate	+	
		People with disabilities	Disproportionate	+	
		Pregnant women and parents	Proportionate	+	
		People from BAME groups	Proportionate	+	
		Faith groups	Proportionate	+	

		Women, people identifying as LGBT	Proportionate	+	
		Londoners on lower incomes	Disproportionate	+	
Maintaining and improving roads in Enfield	Fewer delays and less congestion	Older Londoners	Proportionate	+	No mitigation measures required as no adverse or discriminatory impacts identified.
		Children and younger people	Proportionate	+	
		People with disabilities	Proportionate	+	
		Pregnant women and parents	Proportionate	+	
		People from BAME groups	Proportionate	+	
		Faith groups	Proportionate	+	
		Women, people identifying as LGBT	Proportionate	+	
		Londoners on lower incomes	Proportionate	+	
* Impacts are summarised in terms of Positive (+), Negative (-), Neutral (N) or Unknown (U)					

5.0 Conclusions and Findings

5.1 Introduction

5.1.1. The EqIA has investigated the potential impact of the LIP on affected equality groups. This section summarises the findings and provides recommendations as to how equalities issues can be monitored, and impacts reviewed throughout the delivery of the LIP.

5.2 EqIA findings

The EqIA has examined the proposed strategy, socio-demographic data gathered in relation to the LIP and the available information on the outcomes of the policies. Based on this, and using professional judgement, we have identified several disproportionate impacts that may occur on Equalities Groups because of the implementation of the proposed strategy.

The key beneficial impacts relate to:

- Measures to encourage active travel, particularly to and from schools, will benefit people in many of the protected groups. The health benefits to many older and/or disabled people with respiratory illnesses will be greater than for the general population. Similarly, children and young people are particularly vulnerable to air pollution as their respiratory systems are still developing, and therefore also will benefit disproportionately. The health benefits for children from greater participation in active travel also will be greater than for the general population.
- Actions to improve air quality are likely to benefit older and/or disabled people with respiratory illnesses more than for the general population. Similarly, children and young people also will benefit disproportionately.
- Managing growing demand for on-street parking may benefit some of the protected groups, especially where they are afforded greater priority in parking allocations.
- Older people, children and disabled people are more vulnerable road users, and will disproportionately benefit from improvements in road safety.
- Policies to improve the reliability and accessibility of public transport will benefit protected groups with a greater reliance on public transport than the public at large to a disproportionate extent.

However, there may be an adverse impact on people on lower income due to increases in parking charges as part of policies to manage on-street parking. This may be mitigated by concessions being made available based on income. However, this will need to be assessed further to understand the actual impact (including whether proposed charges are significant in terms of the overall running costs of a private car), particularly given that low income groups are less likely to own a car and balance any potential mitigation against the wider aims of the LIP3 including the intention to reduce health inequalities.

Appendix C

Glossary of terms and abbreviations

AA – Appropriate Assessment
AAP – Area Action Plan
API - Annual Programme of Investment
AQAP - Air Quality Action Plan
AQMA - Air Quality Management Area
BAME – Black, Asian and minority ethnic
BME - Black Minority Ethnic
BMI - body mass index
CIL - Community Infrastructure Levy
COPA - Case Overview and Preparation Application.
CO² - Carbon Dioxide
dB – decibel
DDA – Disability Discrimination Act
DfT – Department for Transport
EAC - The House of Commons Environmental Audit Committee
EqIA – Equality Impact Assessment
ETP – Enfield Transport Plan
EWT – Excess Waiting Time
GLA - Greater London Authority
HIAMP – Highway Infrastructure Asset Management Plan
HiAP - Wellbeing Board’s priority to embed Health in All Policies
HRA – Habitats Regulations Assessment
iBus - Automatic Vehicle Location system to improve London's buses using technology
km -Kilometres
Kpa – kilotonnes per annum
KSI - Killed or Seriously Injured
Ktoe – tonnes of oil equivalent
LAeq – A-weighted, equivalent sound level
LIP – Local Implementation Plan
LoTAG - London Technical Advisors Group
LSOA – Lower Super Output Areas
LTDS - London Travel Demand Survey
m – metre
mi - Miles
mph – Miles Per Hour
MTS – Mayor’s Transport Strategy
NGAP - Northern Gateway Access Package
NGAR - Northern Gateway Access Road
NO₂ - Nitrogen Dioxide

NO_x - Nitrogen Oxides

OAPF - Opportunity Area Planning Framework

ONS - Office for National Statistics

PCG – Protected Characteristics Groups

PTALs - Public Transport Accessibility Level

PTCG – Public Transport Consultative Group

PM₁₀ - Particulate matter that is 10 microns or less in diameter

PM_{2.5} - Particulate matter that is 2.5 microns or less in diameter

SAC – Special Area of Conservation

SEA – Strategic Environmental Assessment

SEN school – special educational needs school

SPA – Special Protection Area

SRN – Strategic Road Network

SSSIs – Sites of Special Scientific Interest

STARS – Sustainable Travel: Active, Responsible, Safe. TfL's accreditation scheme for London schools and nurseries.

Stats 19 – Road accidents and safety statistics dataset

SuDS - Sustainable Drainage System

TADS – Traffic Accident Diary System

TBC – To be confirmed

TfL – Transport for London

TLRN - Transport for London Road Network

TP – Transport Plan

UK – United Kingdom

ULEZ - Ultra-low emission zone

VRUs - vulnerable road users (A group of road users can be defined as vulnerable in a number of ways, such as by the amount of protection in traffic (e.g. pedestrians, cyclists and motorcyclists) or by task capability (e.g. the young and the elderly)).

yr - Year

Appendix D

All published by DfT unless otherwise stated;

Cycling and Walking Investment Strategy (2017)

The strategy outlines the government's ambition to make cycling and walking a natural choice for shorter journeys, or as part of longer journeys by 2040. It sets out the governance arrangements that will be put in place and outlines actions that have already been taken, as well as actions planned for the future.

Creating growth, cutting carbon: making sustainable local transport happen (2011)

The local transport white paper sets out the government's vision for a sustainable local transport system that supports the economy and reduces carbon emissions. It explains how the government is placing localism at the heart of the transport agenda, taking measures to empower local authorities when it comes to tackling these issues in their areas. This details the government's intention to promote sustainable transport solutions. The white paper was published under the 2010 to 2015 Conservative and Liberal Democrat coalition government.

Strategic framework for road safety (2011)

The strategic framework for road safety sets out the government's approach to continuing to reduce killed and seriously injured casualties on Britain's roads. Its focus is on increasing the range of educational options for the drivers who make genuine mistakes and can be helped to improve while improving enforcement against the most dangerous and deliberate offenders. The policy paper was published under the 2010 to 2015 Conservative and Liberal Democrat coalition government.

National Planning Policy Framework (2018)

The revised National Planning Policy Framework (NPPF) was published on 24 July 2018 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in March 2012.

The Government's National Planning Policy Framework recognises that transport policies have an important role to play in facilitating sustainable development and places emphasis on developments being encouraged in areas served by high quality sustainable transport. Patterns of growth should be managed to make the fullest possible use of passenger transport, walking and cycling, and focus significant development in locations which are or can be made sustainable. Higher development densities and a mix of land uses can encourage more local travel patterns and reduce journey lengths.

The importance of developing infrastructure to widen transport choice and minimise journey lengths for employment, shopping, leisure, education and other activities is highlighted within the guidance and these principles are at the heart of this Transport Plan.

Regional guidance

All published by the Greater London Authority/ Transport for London unless otherwise stated;

The London Plan (including alterations) (2016) whilst being mindful of the Draft London Plan for consultation December 2017

The London Plan is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next

20–25 years. The document that brings together the geographic and locational (although not site specific) aspects of the Mayor's other strategies – including those dealing with:

- Transport
- Economic Development
- Housing
- Culture
- a range of social issues such as children and young people, health inequalities and food
- a range of environmental issues such as climate change (adaptation and mitigation), air quality, noise and waste

The London Plan sets out the framework for the development and use of land in London, linking in improvements to infrastructure (especially transport); setting out proposals for implementation, coordination and resourcing; and helping to ensure joined up policy delivery by the GLA Group of organisations (including Transport for London). It sets out the strategic, London-wide policy context within which boroughs should set their detailed local planning policies. The policy framework for the Mayor's own decisions on the strategic planning applications referred to him. It forms an essential part of achieving sustainable development, a healthy economy and a more inclusive society in London.

The final version of the new London Plan is expected to be published in late 2019.

More information can be found at: <https://www.london.gov.uk/what-we-do/planning/london-plan>

Mayor's Transport Strategy (2018)

In March 2018 the Mayor published his Transport Strategy. It sets out the vision for transport in the Capital covering the period 2019 - 2040 and beyond. It prepares for London's forecast growth. With a population of 8.7 million, the city is now larger than it has ever been, and it is forecast to grow to 10.8 million by 2041. The strategy supports the growth of London's economy, new homes and jobs and supports sustainable growth across central, inner and outer London.

The central aim of the Mayor's Transport Strategy is to create a future London that is not only home to more people, but also a better place for all those people to live in. Fundamentally, this means reducing Londoners' dependency on cars in favour of walking, cycling and public transport use.

Reducing Londoners' dependency on cars in favour of increased walking and cycling levels and greater public transport use will address health problems, make transport safer, reduce inequalities and limit environmental impact.

MTS content and structure

VISION and aims Changing the transport mix 80% of all trips in London to be made on foot, by cycle or using public transport by 2041		
Healthy Streets and healthy people	A good public transport experience	New homes and jobs
<ul style="list-style-type: none"> ➤ All Londoners to do at least 20 minutes of active travel a day by 2041 ➤ 70% of Londoners live within 400m of London-wide strategic cycle network by 2041 ➤ 65% reduction in KSIs by 2022 compared to a 2005-9 baseline ➤ 70% reduction in KSIs by 2030 compared to a 2010-14 baseline ➤ Zero deaths and zero injuries from road collisions by 2041 ➤ 10-15% reduction in volume of traffic by 2041 ➤ 10% reduction in freight trips in Central London by 2026 in morning peak ➤ 250,000 fewer cars owned by 2041 ➤ 72% reduction in CO₂ emissions from transport (excluding aviation) by 2041 ➤ 94% reduction in road transport NO_x emissions by 2041 ➤ Reduction of 53% in PM_{2.5} & 45% in PM₁₀ from road transport emissions by 2041 	<ul style="list-style-type: none"> ➤ Public transport network can accommodate 14 – 15 million trips daily by 2041 ➤ Reduce travel time difference between total and step free network by 50% by 2041 ➤ 5 – 15% improvement in bus speeds by 2041 London - wide 	<ul style="list-style-type: none"> ➤ Good access to public to public transport ➤ High-density, mixed- use developments ➤ People choose to walk and cycle ➤ Car-free and car-light places ➤ Inclusive, accessible design ➤ Carbon-free travel ➤ Efficient freight
Transforming the transport system – a spatial approach for central, inner, outer		
THE HEALTHY STREETS APPROACH Priorities, policies and proposals		
Healthy Streets and healthy people	A good public transport experience	New homes and jobs
<ul style="list-style-type: none"> a) Active, inclusive and safe travel b) Making more efficient use of the street network c) Improving air quality and the environment 	<ul style="list-style-type: none"> a) Improving safety, affordability and customer service b) Improving public transport accessibility and inclusivity c) Shaping and growing the bus network d) Improving rail services and tackling crowding 	<ul style="list-style-type: none"> a) Shaping the type of growth: creating high density, mixed-places b) Shaping the city: using transport to support and direct good growth

MTS Outcomes

MTS								
Healthy streets and healthy people				A good public transport experience			New homes and jobs	
Active	Safe	Efficient	Green	Connected	Accessible	Quality	Good Growth	Unlocking
London's streets will be healthy and more Londoners will travel actively	London's streets will be safe & secure	London's streets will be used more efficiently & have less traffic on them	London's streets will be clean and green	The public transport network will meet the needs of a growing London	Public transport will be safe, affordable and accessible to all	Journeys by public transport will be pleasant, fast and reliable	Active, efficient and sustainable travel will be the best option in new developments	Transport investment will unlock the delivery of new homes & jobs

Outcomes should not be viewed in isolation, schemes and programmes should seek to deliver improvements against multiple outcomes wherever possible.

A new type of thinking is required to put into practice the theory of reducing car dependency and increasing active, efficient and sustainable travel. It requires an understanding of how Londoners interact with their city and what defines their quality of life, with particular attention to the streets where daily life plays out.

Whatever mode of transport Londoners use, the quality of the experience of using London's streets helps to define the quality of their journey. Eighty percent of Londoners' trips are entirely on streets, and all Tube and rail journeys rely on good street access to stations. A good street experience is therefore key to providing attractive public transport options of whatever mode.

The Healthy Streets Approach provides the framework for putting human health and experience at the heart of planning the city. It uses ten evidence-based indicators:

Healthy Streets Indicators



Source: Lucy Saunders

- Pedestrians from all walks of life**
 London's streets should be welcoming places for everyone to walk, spend time in and engage in community life.
- People choose to walk, cycle and use public transport**
 Walking and cycling are the healthiest and most sustainable ways to travel, either for whole trips or as part of longer journeys on public transport. A successful transport system encourages and enables more people to walk and cycle more often. This will only happen if we reduce the volume and dominance of motor traffic and improve the experience of being on our streets.
- Clean air**

Improving air quality delivers benefits for everyone and reduces unfair health inequalities.

- **People feel safe**

The whole community should feel comfortable and safe on our streets at all times. People should not feel worried about road danger or experience threats to their personal safety.

- **Not too noisy**

Reducing the noise impacts of motor traffic will directly benefit health, improve the ambience of street environments and encourage active travel and human interaction.

- **Easy to cross**

Making streets easier to cross is important to encourage more walking and to connect communities. People prefer direct routes and being able to cross streets at their convenience. Physical barriers and fast moving or heavy traffic can make streets difficult to cross.

- **Places to stop and rest**

A lack of resting places can limit mobility for certain groups of people. Ensuring there are places to stop and rest benefits everyone, including local businesses, as people will be more willing to visit, spend time in, or meet other people on our streets.

- **Shade and shelter**

Providing shade and shelter from high winds, heavy rain and direct sun enables everybody to use our streets, whatever the weather.

- **People feel relaxed**

A wider range of people will choose to walk or cycle if our streets are not dominated by motorised traffic, and if pavements and cycle paths are not overcrowded, dirty, cluttered or in disrepair.

- **Things to see and do**

People are more likely to use our streets when their journey is interesting and stimulating, with attractive views, buildings, planting and street art and where other people are using the street. They will be less dependent on cars if the shops and services they need are within short distances, so they do not need to drive to get to them.

Improvements against all the indicators across the city's streets will radically transform the day-to-day experience of living in London, helping to fulfil the strategy's overall aim of creating a better city for more people to live and work in.

More information can be found at: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/the-mayors-transport-strategy>

London Environment Strategy (2018)

The Mayor is taking a range of actions to improve the environment. The state of London's environment affects everyone who lives in and visits the city – it helps Londoners to stay healthy, makes London a good place to work and keeps the city functioning from day to day.

London is facing a host of environmental challenges. Toxic air, noise pollution, the threat to green spaces, and the adverse effects of climate change, all pose major risks to the health and wellbeing of Londoners.

We need to act now to tackle the most urgent environmental challenges facing London as well as safeguard the environment over the longer term. We need to ensure that London is greener, cleaner and ready for the future.

This is the first strategy to bring together approaches to every aspect of London's environment. It is divided into the following areas:

- Air quality
- Green infrastructure
- Climate change mitigation and energy
- Waste
- Adapting to climate change
- Ambient noise

More information can be found at: <https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/draft-london-environment-strategy>

Health Inequalities Strategy - Better Health For All Londoners (2018 draft)

It describes some of the main issues which lead to inequalities in the health of different groups of Londoners, and proposes a set of aims for reducing them. It explains what the Mayor sees as his role in meeting these aims. Finally, it invites others to get involved, the Mayor recognises he cannot act alone. This means that the final strategy will be supported by partnership work with people and organisations from across London, both within and beyond the public sector. The document recognises that that building activity into the daily routine is the best way to stay active throughout life. Many more Londoners could be more active every day by walking or cycling as part of their journeys or using streets for leisure and outdoor play. To enable this, we must make walking, cycling and public transport the most attractive transport options. We must also create street environments that are inviting spaces to use.

More information can be found at: <https://www.london.gov.uk/what-we-do/health/have-your-say-better-health-all-londoners>

London Housing Strategy (2018 draft)

The Mayor's draft London Housing Strategy sets out his vision for housing in the capital, alongside policies and proposals to achieve it. It provides a framework for what the Mayor will do over several years, including over £3.15 billion of affordable housing investment through to 2021, as well as a host of other programmes and services provided by the Mayor and his partners, and his longer-term ambitions for the future. It is a call to action for all organisations that have a role to play in addressing London's housing crisis to work with him toward this goal.

The five priorities of the Mayor's draft London Housing Strategy are:

- 1) Building homes for Londoners
 - a) Increasing the supply of land for new homes, including through greater intensification, higher densities, co-location of different uses and through the Mayor's proactive intervention in the land market
 - b) Investment to support housing delivery and infrastructure

- c) Diversifying the homebuilding industry to increase capacity and speed up delivery
- d) Increasing the capacity of the industry, including by addressing the construction skills gap and modernising construction methods
- 2) Delivering genuinely affordable homes
 - a) The Mayor's definition of genuinely affordable homes
 - b) Increasing delivery of affordable homes in order to achieve the Mayor's long term strategic target for half of new homes built in London to be affordable
 - c) Protecting London's existing affordable homes
- 3) High quality homes and inclusive neighbourhoods
 - a) Delivering well-designed, safe and good quality and environmentally sustainable homes
 - b) Meeting London's diverse housing need
 - c) Working with partners to encourage new housing delivery that involves Londoners and earns their support
- 4) A fairer deal for private renters and leaseholders
 - a) Improving standards for private renters
 - b) Improving affordability and security for private renters
 - c) Reforming and improving the leasehold sector
- 5) Tackling homelessness and helping rough sleepers
 - a) Preventing homelessness in all its forms, and supporting those who become homeless into sustainable accommodation
 - b) Supporting rough sleepers off the streets as quickly and sustainably as possible

More information can be found at: <https://www.london.gov.uk/what-we-do/housing-and-land/tackling-londons-housing-crisis>

The Mayor's Economic Development Strategy for London (2018 draft)

More people live and work in London than ever before and the economy is growing. New businesses and jobs are being created on an unprecedented scale, despite economic shocks like the financial crisis in 2008 and growing global competition.

The Mayor has launched his draft Economic Development strategy. It sets out his plans to grow London's economy, support businesses, boost innovation and create a city that works for all.

The draft Economic Development strategy has three main goals:

- Opening-up opportunities – everyone should be able to benefit from all our city offers
- Growth – ensuring our economy will continue to thrive and is open to business
- Innovation – to make London a world leader in technology and a hub of new ideas and creativity

The document recognises that transport action is required to help support and stimulate economic development. A summary of actions included in the draft document states the Mayor will:

- 1) Implement the Healthy Streets Approach to create a healthy street environment, where people choose to walk, cycle and use public transport
- 2) Help to make more efficient use of London's streets by reducing car dependency and tackling congestion
- 3) Invest in London's public transport capacity with TfL and make the case to government for the transport investment needed to enable economic growth, such as Crossrail 2

- 4) Use new transport schemes to unlock homes and jobs across London, with developments planned around walking and cycling for local trips and public transport use for longer journeys

The Mayor asks that:

- Government works with the Mayor and Transport for London to secure the necessary powers to deliver Crossrail 2, opening the scheme in 2033.
- Government ensures further rail franchises across the South East are devolved to the Mayor to provide improved service and better accountability. Government develops aviation capacity in the South East without severe environmental impacts, notably through a second runway at Gatwick.

More information can be found at: <https://www.london.gov.uk/what-we-do/business-and-economy/have-your-say-economy-works-all-londoners>

Culture for all Londoners, Mayor of London's Draft Culture Strategy (2018)

Alongside the Mayor's other strategies and plans, the draft Culture Strategy outlines an ambitious vision to sustain a city that works for everyone. A city that is built on the principle of culture for all Londoners.

The strategy has four priorities:

1. Love London - more people experiencing and creating culture on their doorstep
2. Culture and Good Growth - supporting, saving and sustaining cultural places
3. Creative Londoners - investing in a diverse creative workforce for the future
4. World City - maintaining a global powerhouse in a post-Brexit world

More information can be found at: <https://www.london.gov.uk/get-involved/draft-culture-strategy-london>

Sub regional transport plans

In order to develop an integrated approach to sub regional transport development and land use planning, London has been split in to five sub regions (central, north, south, east and west). SRTPs translate the MTS to the sub-regional level identifying sub regional characteristics, challenges, opportunities and priorities and forms a bridge between Mayoral policies and those of the encompassed boroughs. It is recognised that while all MTS challenges must be considered across London, and addressed locally through Local Implementation Plans, there are some challenges which would benefit from having a concerted effort at a sub-regional level. The SRTP has evolved since 2010 when it was first developed, the region has seen significant change since then. As we now have a new MTS, with a new set of objectives and priorities we will need to revisit and review the SRTP and identify and agree revised north London-specific challenges.

The below figure shows Sub regional boundaries (North area: Barnet, Enfield, Haringey and Waltham Forest).

In 2007, we launched our first Sustainable Community Strategy, which set out our ten-year vision for the future of Enfield, describing how it would look and feel for all Enfield's communities by 2017. As a partnership, it is our main ambition that Enfield has:

"A healthy, prosperous, cohesive community living in a borough that is safe, clean and green."

The Strategy was drawn up by the Enfield Strategic Partnership in order to demonstrate how local organisations are working together to make a difference and improve the quality of life in the borough by addressing important issues such as safety, health, education, housing, economic prosperity, transport and environmental sustainability.

In 2009, after consulting with key stakeholders and partners, we updated the strategy to ensure that it remained current and covers the period 2009 – 2019. This is an important document for the council and the ambitions contained within it should be reflected in all council policies and plans.

Sustainable Communities Strategy themes, priorities and objectives

Theme	Community Priorities	Objectives
Children and Young People	<ul style="list-style-type: none"> • Improved education • Better youth facilities 	<ul style="list-style-type: none"> • To reduce the number of families with children living in poverty • To improve outcomes for all children and narrow the gap in outcomes between those who do well and those who do not • To improve young people's sexual health and reduce teenage pregnancy rates • To safeguard children and young people from maltreatment, neglect, violence and sexual exploitation • To reduce the number of young people involved in crime, disorder and anti-social behaviour • To improve educational achievement at all key stages and increase school attendance • To improve the range, quality and provision of accessible and affordable recreational and leisure activities for young people • To increase opportunities for children and young people to influence local decision making • To promote safer travel in Enfield
Safer and Stronger Communities	<ul style="list-style-type: none"> • Reduction in crime and anti-social behaviour • Improved community cohesion • Improving communities confidence through better engagement 	<ul style="list-style-type: none"> • To reduce burglary and damage to dwellings • To reduce vehicle crime • To tackle violence and street crime • To tackle gangs and weapon enabled crime • To reduce anti-social behaviour • To improve community cohesion and tackle extremism • To improve opportunities for young people • To reduce the harms caused by alcohol and illegal drugs • To engage better with communities and

		<ul style="list-style-type: none"> • improve confidence
Healthier Communities	<ul style="list-style-type: none"> • Improved health and life expectancy 	<ul style="list-style-type: none"> • To improve life expectancy across the borough • To improve life chances by reducing mortality rates from heart disease, stroke and related diseases • To reduce the number of people who smoke or whose health is affected by second-hand smoke • To reduce the harm caused by drugs and alcohol • To improve access to sexual health screening services and reduce teenage pregnancy • To increase residents' participation in regular physical activity • To increase the number of people participating in healthy lifestyles across the borough • To encourage the use of public transport, walking and cycling • To enable more people to access improved diet and nutrition • To ensure that the wider determinants of health play a more active part in partner decision-making
Older People	<ul style="list-style-type: none"> • Active citizenship and involvement in decision making • Promotion of positive attitudes to ageing across different generations 	<ul style="list-style-type: none"> • To promote active citizenship and involvement in decision-making • To ensure equal access to all statutory and non-statutory services and actively tackle discrimination and inequalities experienced by older people • To promote greater choice, control, autonomy, safety, independence and well-being • To help older people live longer and healthier lives • To respect the rights of older people and ensure services are person-centred • To promote positive attitudes to ageing across different generations • To provide good and accessible information about all services • To deliver fuel poverty initiatives such as insulation and energy efficient heating systems to vulnerable households throughout the borough
Employment and Enterprise	<ul style="list-style-type: none"> • Increased levels of skills, more jobs in the borough 	<ul style="list-style-type: none"> • To implement a place-shaping approach to underpin the creation of a more prosperous borough
Environment	<ul style="list-style-type: none"> • A cleaner, greener and more vibrant borough 	<ul style="list-style-type: none"> • To enhance the health and vitality of town centres to meet the needs of the communities they serve
Leisure and Culture		

Housing	<ul style="list-style-type: none"> • Sustainable housing growth 	<ul style="list-style-type: none"> • To extend and consolidate the local economic base by maximising the economic potential of the Upper Lee Valley and town centres • To increase the number of new businesses setting up and coming to the area and sustaining their development • To tackle worklessness and reduce levels of unemployment, particularly amongst young people, women and disadvantaged sections of the community • To provide a range of opportunities and support to develop skills, and enable all residents to access the employment market • To deliver the housing element of place shaping and achieve sustainable housing growth • To improve housing conditions and prevent homelessness • To ensure that residents have the opportunity to live in a decent home they can afford • To protect and improve the quality of built and open environment • To promote sustainable development and support residents and businesses to preserve natural resources, become energy efficient, conserve water, reduce pollution and address the causes of global warming • To increase biodiversity in order to provide a local distinctive natural identity • To increase recycling and progressively reduce the amount of biodegradable waste landfilled • To encourage the use of public transport, walking and cycling through the promotion of safer travel • To make Enfield a place which residents can identify with and feel proud of, and where people from different backgrounds feel valued and can develop positive relationships with their local community • To promote social inclusion so that all sections of the community are able to access opportunities, services and improve their quality of life • To provide opportunities and support for communities and representatives of interest and geography to be involved in developing services • To increase volunteering in the borough
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The Partnership is committed to delivering Enfield's Sustainable Community Strategy and has established a number of Thematic Action Groups to help delivery its objectives. These groups are as follows:

- Safer and Stronger Communities Board
- Children's Trust Board
- Health and Wellbeing Board
- Older People's Board
- Environment Board
- Housing Strategic Partnership Board
- Employment and Enterprise Board
- Leisure and Cultural Partnership Board

More information can be found at:

http://www.enfield.gov.uk/esp/info/33/sustainable_community_strategy

Creating a lifetime of opportunities in Enfield – Enfield Corporate Plan 2018 – 2022

Enfield's Corporate Plan is a strategic tool to be used by the Council to set long-term objectives. With regards to the people and the place, we plan on delivering for everyone in Enfield over the next four years:

- Good homes in well-connected neighbourhoods
- Empower people to create a thriving place
- Healthier, happier lives in a cleaner, greener Enfield

Our guiding principles are:

- We will communicate with you
- We will work with you
- We will work smartly for you

Enfield's Corporate Plan framework is contained in the below diagram:



Local Development Framework, core strategy 2010

In November 2010, the council adopted the Core Strategy which sets the spatial planning framework for development of the borough between 2010 – 2026 and beyond. It is the lead document within the council's Local Development Framework (LDF), a strategic document providing the broad strategy for the scale and distribution of development and the provision of supporting infrastructure. It contains core policies for guiding patterns of development.

Our LDF is built on a thorough understanding of the local challenges and opportunities facing Enfield. It is informed by extensive research, feasibility studies and the participation of local communities and others who have a stake in the future of the Borough. This means we have strong evidence based policies to guide the creation of new homes, jobs and services essential to support Enfield's growing communities and improve the quality of life for existing residents.

Enfield's Core Strategy focuses change in the areas of the Borough that need it most – the south and east. It also aims to protect and enhance those parts of the Borough which already offer a good quality of life to residents.

The council will plan to focus regeneration, future growth and development in the Borough in four specific areas, which offer the greatest opportunities for change to improve the quality of life for Enfield's residents. These areas are:

- Edmonton Leaside including Meridian Water
- North Circular including New Southgate
- North East Enfield
- Enfield Town

Alongside the Core Strategy, Enfield is preparing and developing a number of area-based policies and guidance. These include area action plans (AAPs) for the Edmonton Leaside area (previously known as the Central Leaside AAP), North Circular area and North East Enfield area. And master plans for Enfield Town, Meridian Water and new Southgate. These, area based documents provide detailed guidance and policy for managing growth and/or regeneration and set out priorities for the delivery of the transport infrastructure which is necessary to support growth.

We regularly review our development planning document to ensure that they are working effectively to regenerate and protect Enfield addressing changes such as increased population growth. We are currently working on producing a new adopted Local Plan and are therefore reviewing and amending/updating local planning policies to identify how land is used, determining what will be built where over the new plan period. The adopted Local Plan will provide a framework for development across Enfield.

The section 106 (s106) Supplementary Planning Document (SPD) was adopted by the Local Plan Cabinet Sub Committee on 20 October 2016. The document forms part of our Local Plan and is important when determining planning applications. It outlines the council's approach towards planning obligations from development proposals, in line with new Government guidance. It sets out details of the up-to-date policies and regulations relating to planning obligations, information on the level and types of obligations required from different sizes and types of development across the Borough, as well as the process for agreeing planning obligations. The SPD will run in conjunction with the Community Infrastructure Levy.

Planning obligations or 'section 106 (s106) agreements' are an effective way of securing funds to implement measures to mitigate the impacts of generally acceptable development proposals on the environment, economy and community. Development may put additional pressure on existing infrastructure, such as public transport, schools and health services and create a demand for additional provision.

The transport plan and evidence are fully integrated with the Local Development Framework and emerging Local Plan, providing the detail that has supported preparation of these documents and approaches.

More information can be found at: <https://new.enfield.gov.uk/services/planning/planning-policy/>

Appendix E

Local Implementation Plan pro forma A, summary for 2019/20

Pro forma A - 2019/20

<u>Scheme Title</u>	<u>Scheme Description</u>	<u>LIP Funding</u> FY 19/20	<u>Healthy Streets Indicators Delivered</u>									
			Active	Safe	Green	Efficient	Connected PT	Quality PT	Accessible PT	Unlocking	Good Growth	
Bus Stop Accessibility	Currently 85% of Enfield's bus stops are classed as accessible so this funding will continue supporting the design and delivery of accessibility schemes.	50	-	yes	yes	yes	yes	yes	yes	yes	-	-
Reducing Signage Clutter	This is an ongoing programme of work which identifies and reduces signage clutter as part of a programme of renewal and rationalisation. Removing clutter improves the streetscape and reduces maintenance costs.	30	yes	yes	-	yes	-	-	-	-	-	-
Delivering Air Quality Improvements	Support for initiatives which improve air quality in the Borough including through monitoring and focused activities as well as delivery of local projects and schemes. Last year the funding supported air quality monitoring, delivery of the statutory Air Quality Action Plan and responses to the emerging ULEZ.	41	-	-	yes	-	-	-	-	-	-	-
Air Quality Monitoring	Support for 3 static air quality monitoring stations and mobile monitoring.	15	-	-	yes	-	-	-	-	-	-	-
Cycle Enfield Quieter Neighbourhoods and Quietways	Delivery of Quieter Neighbourhoods and Quietways as set out in updated Cycle Enfield Business Case	1,560	yes	yes	yes	yes	-	-	yes	yes	yes	yes

Cycle Enfield Supporting Measures	Programme of supporting measures made up of: <ul style="list-style-type: none"> • Additional satellite bike parking mini-hub • 10 community bike markets • Marketing and promotion of Cycle Enfield and active travel activities • Additional secondary school activities • Cycle Enfield attendance at festivals and community events • Cycling events for specific target groups, e.g. over 50s 	140	yes	yes	yes	yes	-	-	-	-	-
Cycle Parking	Ongoing programme of cycle parking implementation to complement Cycle Enfield. This covers the design and installation of 20 cycle hangars (120 spaces) and 70 Sheffield stands or equivalent.	54	yes	yes	yes	yes	-	-	-	-	-
Cycle Training	Provision of Bikeability nationally accredited cycle training to adults and children.	175	yes	yes	yes	yes	-	-	-	-	-
Cycling Promotion	Promotion and marketing activities to highlight ongoing cycling support activities (as distinct from Cycle Enfield specific activities).	27	yes	yes	yes	yes	-	-	-	-	-
Cycling Support Activities	Delivery of projects and programmes to support people to cycle: 137 Dr Bike sessions for 3,200 bikes 10 Cycle maintenance classes for 60 trainees 12 Guided rides for 130 riders	50	yes	yes	yes	yes	-	-	-	-	-
Safer Freight	Implementing the Enfield Safer Freight & Fleet Action Plan including promotion of the Freight Operator Recognition Scheme, delivery of Exchanging Places events and CPC Safe Urban Driver Training.	10	-	yes	-	-	-	-	-	-	-
Road Safety Schemes	Schemes and projects identified through Technical and Economic analysis to be delivered as part of a rolling programme.	150	-	yes	-	-	-	-	-	-	-

Junction Protection	Design and delivery of schemes to maintain junction safety.	50	-	yes	-	-	-	-	-	-	-	-
Programme, Project and Scheme Development	Support for the development of programmes, projects and schemes including where new priorities are identified which meet MTS outcomes but are not currently funded. Areas of interest include Healthy Streets and controlled parking zones.	138	yes									
Safe and Sustainable School Travel	Funding for the development and delivery of a focused programme of activities and interventions at schools identified as being high priority. The detailed programme is to be developed but will include school travel planning, in school road safety activities and the identification of physical measures to support modal shift and reduce the highway impact of schools on local areas.	60	yes	yes	yes	yes	-	-	-	-	-	-
School Travel Measures	Allocation to cover the cost of designing and delivering a small number of physical measures around schools to encourage walking and cycling.	34	yes	yes	yes	yes	-	-	-	-	-	-

Report

23rd January 2019



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In association with **steer**

Report for – London Borough of Enfield
Draft Transport Plan 2019 and Local Implementation Plan
Strategic Environmental Assessment – Environmental Report



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1.0 Non-Technical Summary

1.1 Introduction

This report sets out the outcomes of the Strategic Environmental Assessment (SEA) of the proposals in the London Borough of Enfield's Transport Plan 2019 including the 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

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

- O1 Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough.
- O2 Promote safe, active and sustainable transport to and from schools.
- O3 Monitor air quality and develop and deliver interventions which address local issues.
- O4 Manage growing demand for on-street parking.
- O5 Focus on and improve priority locations making them safer for vulnerable road users.
- O6 Improve local reliability of and accessibility to the public transport network.
- O7 Maintain and improve the transport network in Enfield including developing potential interventions.

In developing and preparing the programme of works for the Transport Plan and LIP, Enfield Council have considered the major projects in TfL's Business Plan and the milestones associated with these projects as well as more medium and longer terms proposals in the borough.

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 Transport Plan and 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 a 10km radius of Enfield which fall under the Habitat Regulations. This assessment has concluded that there would be no significant environmental effects arising from the implementation of the LIP on these designated areas that would affect the conservation objectives of those sites. On this basis no further assessment work has been undertaken.

1.4 Outcomes of the SEA

The SEA concludes that no significant adverse environmental effects will result from the implementation of the Transport Plan and LIP in Enfield. As such, no specific recommendations for the mitigation of effects are required. At a strategic level all the effects identified are either considered to have no impact or will be positive. At this stage, it is not possible (in some cases) to determine on a scheme by scheme basis the positive or negative effects of individual schemes, because the level of information available at the time of assessment does not allow for a clear judgement to be made.

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

- **O1 Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough.** This objective and the associated measures will directly support increases in cycling and walking in the borough. The increase in active travel will have health and environmental benefits and support improvements in the attractiveness of the public realm as well as broadly supporting emissions reduction and energy efficiency.
- **O2 Promote safe, active and sustainable transport to and from schools.** This objective and the associated measures will provide substantial support for improvements in travel to schools which are healthier and environmentally beneficial. The measures will help reduce inequalities and increase inclusivity as well as having health benefits for those walking and

cycling to school. They will also provide some support for emissions reduction and energy efficiency.

- **O3 Monitor air quality and develop and deliver interventions which address local issues.** This objective and associated measures will work to support improvements in air quality locally complementing vehicle technological changes to achieve this. The measures will support emissions reduction and overall transport energy efficiency improvements.
- **O4 Manage growing demand for on-street parking.** This objective and the associated measures will support a lessening of reliance on the private car and more car-free environments in the borough with associated environmental and health benefits. These stem from reduced emissions and more attractive streetscape environments which are more conducive to active travel, are safer and more inclusive.
- **O5 Focus on and improve priority locations making them safer for vulnerable road users.** This objective and associated measures will directly support improved road safety and a reduction in road casualties with direct benefits to all though particularly vulnerable users and associated benefits to streetscape environments.
- **O6 Improve local reliability of and accessibility to the public transport network.** This objective and associated measures will provide significant improvements in accessibility for public transport users and pedestrians increasing inclusivity and supporting increased uptake of public transport. They will also provide urban realm improvements.
- **O7 Maintain and improve the transport network in Enfield including developing potential interventions.** This objective and the associated measures will provide an enhanced transport network and significantly enhanced streetscape environments with associated environmental (air quality and emission) benefits as well as health benefits.

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

1.5 Monitoring

The draft Plan and LIP include some proposals for environmental monitoring, specifically in relation to emissions of carbon dioxide (CO₂), oxides of nitrogen (NO_x) and particulates from road transport. However, it is recommended that key indicators from the set compiled by the London Sustainable Development Commission (LSDC) on Quality of Life issues also be used by Enfield Council to monitor the environmental effects of the final Strategy and LIP.

1.6 Next Steps

The draft Transport Plan and LIP was submitted to Transport for London in November 2018 for comment. Taking account of the comments received from TfL together with the analysis presented in this Environmental Report, Enfield Council will make any revisions to the Transport Plan and LIP that may be necessary, and a final version of the LIP will be approved in January 2019.

Following this, Enfield 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 Enfield's Transport Plan and 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 Enfield earlier this year. This report takes account of the comments received from these bodies on the Scoping Report and updates and extends the baseline environmental information on which the SEA is based.

2.2 Overview of the Local Implementation Plan (LIP)

The LIP is a statutory document, prepared under Section 145 of the Greater London Authority Act 1999. This Act requires each of London's 33 local authorities to prepare a LIP containing proposals for the implementation of the Mayor's Transport Strategy (MTS)³ in their area.

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

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

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

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

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

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

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

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

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

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

2.3 Compliance with the SEA Regulations

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

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

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

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

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

2.4 Report Structure

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

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

3.0 Context and Scope of the LIP

3.1 Introduction

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

- The background policies that shape the proposals set out in the LIP and Transport Plan, 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 Transport Plan, LIP and the SEA.

3.2 Policy Context

3.2.1 The Mayor's Transport Strategy

The Mayor's Transport Strategy (MTS) is described in outline in **Section 2.2** above. As noted, the central aim of the MTS for London not only to be home to more people, but better place for all Londoners. This requires 80% of all trips in London to be made on foot, by cycle or using public transport by 2041, compared with 63% today. The specific Enfield target is 69%.

3.2.2 The Sub Regional Transport Plan (North)

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

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

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

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

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

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

3.3 Short and long-term transport proposals for Enfield

A summary list of seven programme level measures for three year i.e. short term investment are listed together with number of long-term transport interventions for Enfield. The latter are identified by the Council as required to ensure the economic and social vitality of the borough. Those named in the Transport Plan are Crossrail 2, Northern Access and Bus Rapid Transit. As there are no details available on either the short term measures (albeit that these are broadly consistent with the seven objectives) or long term measures (aside from publicly available information on Crossrail 2) these have not been assessed separately under the SEA. Other projects that will become long-term transport proposals though are not yet identified clearly cannot be considered in the SEA.

3.4 Summary of the LIP

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

- O1 Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough;
- O2 Promote safe, active and sustainable transport to and from schools;
- O3 Monitor air quality and develop and deliver interventions which address local issues;
- O4 Manage growing demand for on-street parking;
- O5 Focus on and improve priority locations making them safer for vulnerable road users;
- O6 Improve local reliability of and accessibility to the public transport network; and
- O7 Maintain and improve the transport network in Enfield including developing potential interventions.

More details on the focus and proposals which fall under each objective are set out below.

O1 Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough. Includes redesigning street to shift priority to active modes, supporting

'Healthy Routes' and an increase in cycle infrastructure provision. It will see a continuation of the strategy in the Mini-Holland proposals.

O2 Promote safe, active and sustainable transport to and from schools. Includes junction safety improvements, low speed environments – normally 20 mph, community schemes such as 'walking-school buses'. It promotes healthier alternatives to the car particularly walking and cycling.

O3 Monitor air quality and develop and deliver interventions which address local issues. Includes working with business to promote active travel by staff, working with TfL to develop appropriate emergency measures to reduce or restrict vehicle use when air pollution is very high or forecast to be so, and reliable charging infrastructure to support electric vehicle (EV) take up.

O4 Manage growing demand for on-street parking. Includes more effective management of on-street parking, encouraging new car-free developments, ensuring new developments contain high levels of access to cycle parking and supporting uptake of car club membership. It seeks to address the issue of there not being enough road space to accommodate current and future parking and vehicle use.

O5 Focus on and improve priority locations making them safer for vulnerable road users. Includes traffic management schemes, lowering speeds through street design and prioritising road danger reduction measures. It seeks to directly reduce road traffic casualties.

O6 Improve local reliability of and accessibility to the public transport network. Includes ensuring all bus stops are accessible, accessibility improvements such as dropped kerbs, tactile paving and tonal distinction between areas for pedestrians and those for vehicles, plus working with TfL to deliver station improvements and potential locations for demand-responsive bus services. It seeks to directly improve the attractiveness of public transport in Enfield.

O7 Maintain and improve the transport network in Enfield including developing potential interventions. Includes public realm and pedestrian environment improvements, green infrastructure including SuDS provision, retrofitting of rain gardens, designing 'in passing' surveillance, new tree planting and net gains in green infrastructure and biodiversity.

3.5 Defining the assessment area

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

Figure 3.1: London Borough of Enfield area and adjoining boroughs



3.6 Timeframe for the Plan

The Transport Plan and LIP includes policies and proposals that cover the period up to 2024. Although there is reference to longer term and aspirational schemes to 2040, the focus is on the short and medium term goals and transport objectives for the borough up to 2024 with a three year programme of investment 2019-2022. This is therefore also the timeframe for the SEA.

3.7 Other policies, Plans, Programmes and Sustainability Objectives

3.7.1 National and Regional Policies

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

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

Topic	Policy Document
All Topics	Upper Lee Valley: Opportunity Area Planning Framework (2013)
	A Green Future: Our 25 Year Plan to Improve the Environment (2018)

Topic	Policy Document
	The London Plan: The Spatial Development Strategy for London (2016)
	The New London Plan: Draft for Public Consultation (2017)
	Mayor of London's Environment Strategy (2017)
	National Planning Policy Framework (2018)
Air Quality	Air Quality Standards Regulations 2010
	Defra's Air Quality Plan (2016)
	Environment Act 1995
	EU Ambient Air Quality Directive (2008/50/EC)
	The Greater London Authority Act 1999
Climate Change Adaptation	Climate Change Risk Assessment (CCRA)
	EC White Paper: Adapting to Climate Change
	National Adaptation Programme (NAP)
	UK Low Carbon Transition Plan (2009)
Climate Change Mitigation	Climate Change Act 2008
	Promotion of the Use of Energy from Renewable Sources Directive (2009/28/EC)
	United Nations Framework on Climate Change COP21 (2015) – Paris Agreement-
Fairness and inclusivity	Equality Act (2010)
Flood Risk	UK Water Strategy (2008)
Geology and Soils	England Soil Strategy, Safeguarding our Soils (2009)
	EU Environmental Liability Directive (99/31/EC)
Historic Environment	Ancient Monuments and Archaeological Areas Act 1979
	Planning (Listed Buildings and Conservation Areas) Act 1990
Materials and Waste	EU Waste Framework Directive (2008/98/EC)
	National Planning Policy for Waste (2014)
	Waste (England and Wales) (Amendment) Regulations 2014
Natural Environment and Natural Capital	Conservation of Habitats and Species Regulations 2010
	Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC
	Directive on the Conservation of Wild Birds 09/147/EC
	Natural Environment and Rural Communities Act 2006
	The Natural Choice – securing the value of nature (2011)
	Wildlife and Countryside Act 1981
Noise and Vibration	Environmental Noise (England) Regulations 2006
	EU Noise Directive (2000/14/EC)
Water Resources and Quality	Final Water Resources Management Plan 14 (WRMP14), 2015-2040 (Thames Water, July 2014) and Annual review June 2016; Affinity Water 2014 Water Resources Management Plan
	Thames River Basin District River Basin Management Plan (Environment Agency, December 2015)

3.7.2 London Borough of Enfield Policies

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

- London Borough of Enfield: Air Quality Action Plan 2007;
- London Borough of Enfield: Enfield Characterisation Study 2011;
- London Borough of Enfield: Enfield Borough Profile 2017;
- Enfield Local Plan 2010;
- London Borough of Enfield: Review of Enfield's Sites of Local and Borough Importance for Nature Conservation 2012;
- London Borough of Enfield: The Enfield Update - November 2017; and
- London Borough of Enfield: Enfield Local Heritage List 2018.

4.0 Baseline Environmental Conditions

4.1 Air Quality

In common with other local authorities, air quality in Enfield is monitored at several specific locations. This information is also used to model the quality of air across the borough. Enfield continues to breach the UK Government's air quality objectives for nitrogen dioxide (NO₂) and the standards particulate matter (PM₁₀). Consequently, the council designated an Air Quality Management Area (AQMA) across the whole of the Borough and produced an Air Quality Action Plan⁶ (AQAP) in recognition of the legal requirement on the council to work towards air quality objectives within the Borough. The dominant source of NO₂ and PM₁₀ emissions in Enfield is road traffic. Problems arise on roads which are heavily trafficked or have large amounts of congestion. For NO₂ there are widespread exceedances of the annual mean objective along main roads in the Borough. For PM₁₀ there are exceedances of the daily mean objective along parts of the busiest main roads in the Borough, including the M25, A406 North Circular Road and A10. The annual mean objective is exceeded in parts of the M25 and A406 North Circular Road only, very close to the centre of the roads.

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** below.

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

Pollutant	2013	2021	2041
Oxides of Nitrogen (NO _x)	1,180	510	110
Particulates (PM ₁₀)	117	103	67
Particulates (PM _{2.5})	67	50	34

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

Enfield Council has conducted a characterisation study⁷ in the borough which identifies four macro-areas based on physical characteristics, history and social identity. These are identified in **Figure 3.1**, and can be characterised as follows:

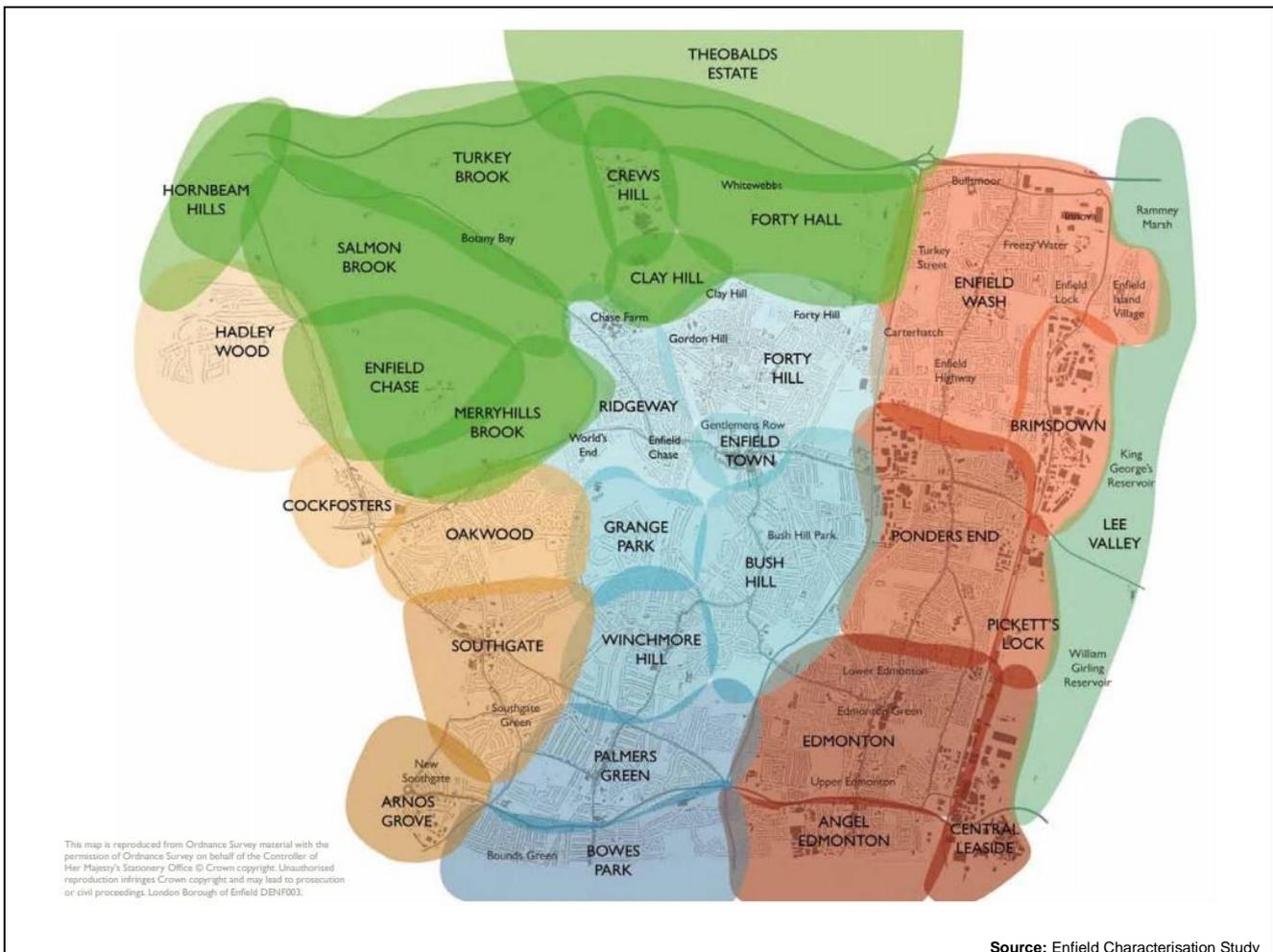
- **Western Corridor:** This area in the south-west of the Borough bordering Barnet and Haringey Boroughs comprises large, generously proportioned interwar suburbs and Metroland centres orientated towards Charles Holden's iconic Underground stations that provide centrepieces and architectural landmarks for local neighbourhoods. These neighbourhoods are low density

⁶ London Borough of Enfield (2007) - **Air Quality Action Plan**.

⁷ London Borough of Enfield (2011) – **Enfield Characterisation Study** – February 2011.

and are dominated by family housing. They are almost entirely residential development with few significant employment areas, either for office space or industrial development. Oakwood neighbourhood retains many of the late Victorian hospital buildings which define the conservation area character; the street pattern and overall composition, however, is essentially suburban. New Southgate (Arnos Grove) is one of the Enfield's Place Shaping Priority Areas and subject of a new masterplan. The centres at Southgate, Arnos Grove, Cockfosters and Oakwood differ in terms of their streetscape. Cockfosters has the widest and grandest street profile, with grass verges with tree planting on both sides and an additional carriageway on both sides for local traffic and parking. The other centres are narrower. Oakwood comprises a classic, single-sided parade of shops, set back from the main road behind a grass verge with mature lime trees and a parking layby. Southgate comprises several busy thoroughfares lined with commercial units on both sides. The type and quantity of street greenery in the western corridor varies significantly, from the generous coverage in semi-rural Hadley Wood to the almost complete lack of greenery in Arnos Grove. In between these, the green spaces in the classic suburbs of Oakwood, Southgate and Cockfosters are under threat due to the pressure on street and garden areas to provide parking.

Figure 3.1: Neighbourhoods in London Borough of Enfield



- **Central Corridor:** The central corridor comprises neighbourhoods that have early village or hamlet origins. Among them is Enfield Town, which retains a strong historic market town

character despite being absorbed into Greater London. Enfield Town is a key shopping destination for the Borough with the Palace Exchange and Palace Gardens Shopping Centres, and a market operating on Thursdays, Fridays and Saturdays in the historic market square. It also is a key transport hub with two rail stations (Enfield Town and Enfield Chase) and a small bus terminus. The central corridor contains mature suburbs, ranging from late Victorian terraces in the south to early interwar semi-detached houses in the north. This includes many Edwardian streets that show an Arts and Crafts influence. Because the central corridor is developed at higher density than areas to the west there is pressure to remove street trees or front gardens to create space for parking and reduce maintenance. Palmers Green was historically a civic centre but has lost this function in recent times, although the former Southgate Town Hall is still an historic landmark.

- **Eastern corridor:** The eastern corridor is centred along Hertford Road following the Lee Valley and is characterised by linear centres. These vary in size from single retail parades in residential areas to major centres. Pubs are more common than in other parts of Enfield and remain as important corner buildings or significant presence in groups of buildings. Edmonton Green is in the south east of the Borough and is Enfield's second largest centre. The area is densely built and contains a large amount of affordable housing, along with significant shopping, community and leisure uses. To the north and south of Edmonton there are older terraces of housing along Hertford Road north of St Martins Road and just north of the junction with the North Circular. There is a good deal of industrial activity in the Lee Valley, including Brimsdown and Meridian industrial parks. This has recently diversified to include other uses such as self-storage facilities, trade counter retailers and cash and carry uses which serve the public as well as leisure uses such as indoor karting tracks. Freezy Water, at the extreme north-east of the borough, is characterised by Innova Park, a new business and enterprise area with office space and large-scale modern buildings.
- **Rural/urban interface:** The north of the borough comprises a mix of urban and rural landscape adjoining the Green Belt, characterised by farmland ridges and valleys. It is an important area of high quality open landscape with a special character which is highly valued. Much of the landscape is in productive agricultural use and all of it is protected as Green Belt. It extends from Hadley Wood in the north west corner of the borough, across the whole of the top northern edge of the borough to Capel Manor and Bulls Cross in the north east. The designation of the area as Green Belt has meant that the landscape has been well protected from twentieth century development and in places feels rural despite its location on the edge of Greater London. Salmon's Brook Valley together is one of the areas of highest landscape quality in the borough, while similarly, Turkey Brook Valley is an area of open agricultural land with undulating topography, characterised by large geometric field patterns that date back to the 1803 Enclosure Acts. These areas are highly valued by local residents and are well used by walkers. Parts of this area are under pressure for development. For example, Chase Farm hospital is presently being redeveloped for housing and with more leisure activities. Similarly, commercial activities at Crews Hill are expanding and diversifying from greenhouse and nursery use to general business and retail. This has a significant effect on the character of the area and in particular the frontage to the traditional lanes.

4.3 Climate change mitigation and adaptation

The UK local and regional carbon dioxide (CO₂) emissions statistics released by the Department of Energy and Climate Change (2012) identifies that baseline CO₂ emissions for the London Borough

of Enfield were 1,427.5 kilotonnes per annum (kpa). Of this figure, 44% was from dwellings, 28% from non-domestic buildings and 28% from transport.

The most recent figures available, for 2012⁸, indicate that after reaching a peak of 1,739.6 kpa in 2006, this level has progressively declined to reach 2012 figures. This comprised 39% from dwellings, 36% from non-domestic buildings and 25% from transport.

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 Enfield will reduce from 353.7 kta in 2013 to 335.1 kta in 2021 and to 153.9 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 statistics⁹ indicated that 411,000 tonnes of oil equivalent (ktoe) energy was consumed in the London Borough of Enfield. This is higher than the average for boroughs across Outer London. Of this, gas consumption accounted for 43%, while 22% was electricity consumption and just over 30% was of petroleum products. Nearly 25% of energy consumed was by industry, and 43% was consumed in people's homes. 31% of energy used was for transport.

4.5 Fairness and inclusivity

The population of the London Borough of Enfield was just over 314,000 at the 2011 Census. This is estimated to have risen to 337,698 at mid-2018, an increase of over 7.5%, making Enfield the 5th largest amongst the 33 London boroughs. The population is also very diverse, with almost two-thirds of people living in the borough from ethnic minority backgrounds. Many of those identifying in the 'other white' category living the borough are from the Greek, Turkish or Cypriot communities, which make up around 15% of the population. The School Census results indicate Enfield pupils recorded themselves under 95 different ethnic codes making the area one of the most ethnically diverse places in the country. The breakdown of Enfield's population by ethnicity is indicated in **Table 3.1** below.

Table 3.1: Ethnic makeup of London Borough of Enfield 2018

Ethnicity	Number	%
White - British	113,898	33.7
White - Irish	6,750	2
Other White	70,841	21
White and Black Caribbean	6,078	1.8
White and Black African	3,345	1
White and Asian	5,244	1.6
Other Mixed	7,377	2.2

⁸ Department of Energy and Climate Change (2014) - **2005 to 2012 UK local and regional CO₂ emissions: Statistical Release.**

⁹ Department for Business, Energy and Industrial Strategy (2017) - **Sub-national total final energy consumption in the United Kingdom (2005 - 2015) – 28th September 2017.**

Ethnicity	Number	%
Indian	12,376	3.7
Pakistani	2,967	0.9
Bangladeshi	6,526	1.9
Chinese	2,918	0.9
Other Asian	15,040	4.5
Black African	33,197	9.8
Black Caribbean	18,897	5.6
Other Black	11,025	3.3
Arab	2,415	0.7
Other ethnic groups	18,804	5.6
<i>Total</i>	<i>337,698</i>	<i>100</i>

Source: London Datastore

The borough also ranks as one of the most deprived in the country with pockets of extreme deprivation in the east of the area, where the Lower Super Output Areas (LSOA) are among the 10% most deprived in England. Enfield is the 64th most deprived borough in England and the 12th most deprived in London.

The fastest growing population locally is typically among working age people aged between 30 and 50. The number of people aged 65 and over has typically been declining. Although future population trends are highly uncertain, population growth locally seems mostly due to an increase in life expectancy and net gain from international migration, principally from EU states in eastern and southern Europe.

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

4.6 Flood risk

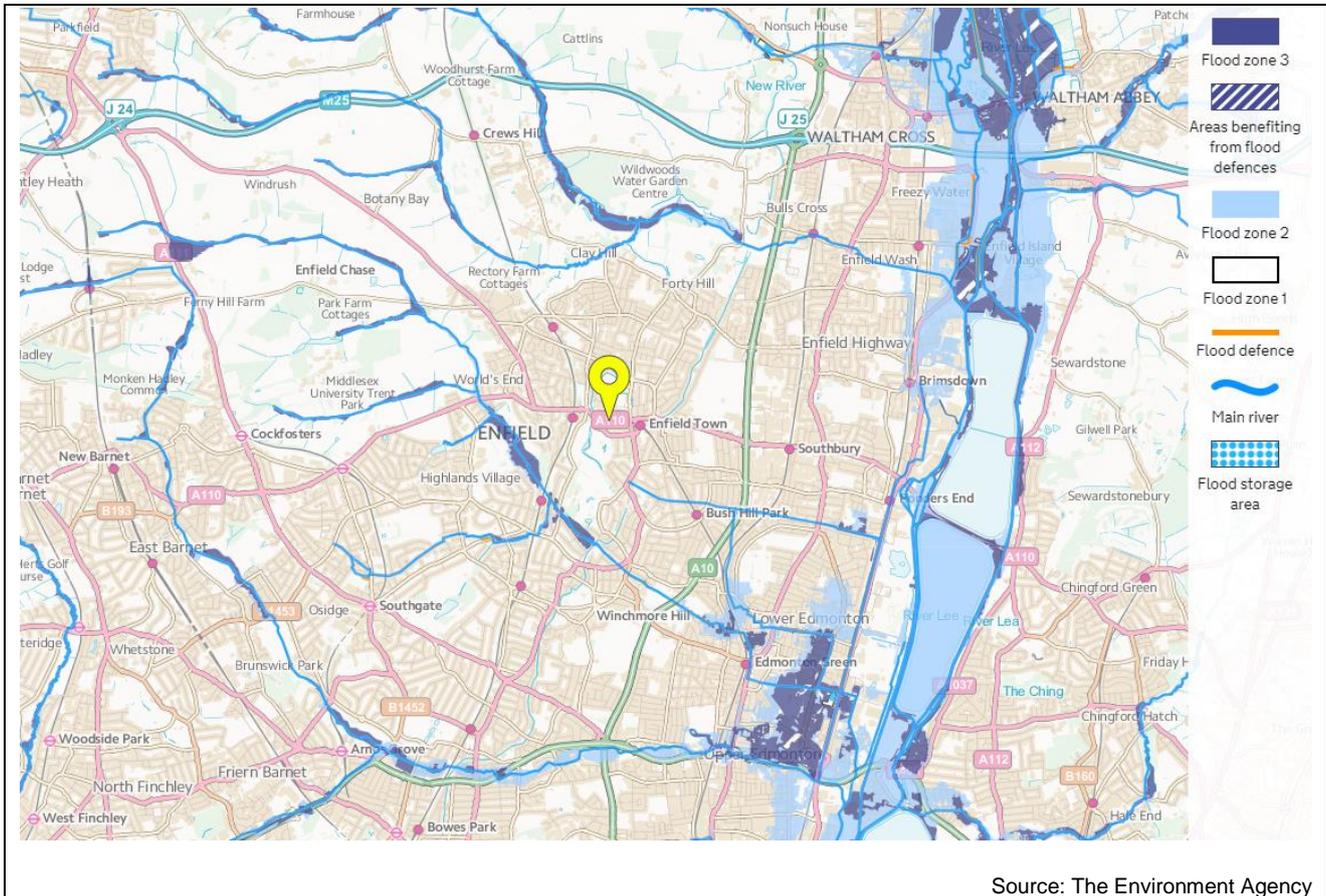
Flood zones for planning purposes are defined by the Environment Agency, based on the likelihood of an area flooding. The three zones are:

- **Flood Zone 1** has less than 0.1% chance of flooding in any year (or 1:1000-year chance). There are very few restrictions on development these areas, exception where proposed development over 1ha in size, or is in a Critical Drainage Areas (i.e. deemed to be at high risk of flooding from rainfall).
- **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 Enfield are illustrated in **Figure 3.2** below, and are principally in the east of the borough, associated with the natural and man-made waterways in the Lee Valley. Other areas relate to the Salmon's Brook flowing in the Enfield Town and Edmonton area, Turkey Brook on the northern edge of the borough, and Pymmes Brook on the southern edge

of the borough. More information on water resources in the borough is provided in **Section Error!**
 Reference source not found. below.

Figure 3.2: Flood Risk Areas in the London Borough of Enfield

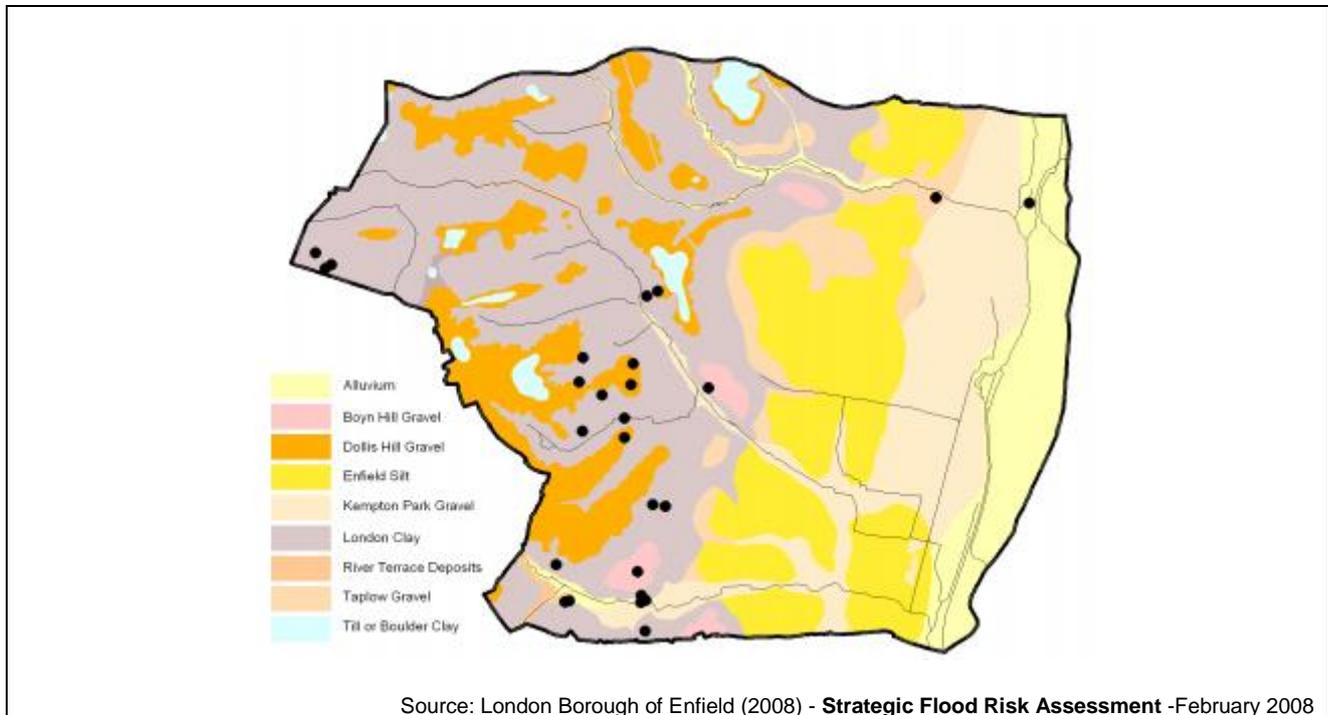


4.7 Geology and soils

The Borough is within the London Basin, bounded by chalk uplands: to the south by the North Downs and to the north by the Chiltern Hills. Nine geological types are found within the Borough, i.e. London Clay, Enfield Silt Member, Alluvium, Kempton Park Gravel Formation, Taplow Gravel Formation, Boyn Hill Gravel Member (BHT), Dollis Hill Gravel Member, River Terrace Deposits, and Till or Boulder Clay. Of these, London Clay is most prevalent.

The geology and soils of the Borough are illustrated in **Figure 3.3** below.

Figure 3.3: Geology and Soils in the London Borough of Enfield



4.8 Historic Environment

The London Borough of Enfield is rich in tangible heritage assets. These include 5 scheduled monuments and 1 local monument; 22 areas of archaeological interest; 451 statutorily listed (of which 3 are Grade 1) and 93 locally listed buildings; 21 conservation areas; and 5 nationally registered and 26 locally registered historic parks and gardens.

Enfield has 11 Listed Buildings and 2 Conservation Areas on the Heritage at Risk Register¹⁰.

4.9 Materials and waste

Enfield Borough achieves recycling rates in line with the London average and is home to one of the largest waste recycling facilities in the UK. The Edmonton Ecopark has prevented 21 million tonnes of waste from going to landfill over its lifetime and employs around 180 people. The facility is being redeveloped in 2019 into an energy recovery facility that would process household waste for the seven London boroughs of Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest in order generate power for around 127,000 homes, while also providing heat for local homes and businesses.

4.10 Mental and physical wellbeing

Health and well-being in Enfield typically are higher to the London average. Life expectancy rates in Enfield are increasing and are expected to improve further. Health inequalities are most evident

¹⁰ Historic England (2017) – **Heritage at Risk: London Register 2017**.

in the more deprived areas in the east of the Borough where people tend to experience the poorest health. Mental illness, levels of physical activity and obesity are a greater concern in more deprived parts of the borough. Men who live in the most deprived areas in the borough die on average 5 years younger than those in more affluent areas. Health inequalities are more prevalent among more vulnerable groups in the population.

Childhood obesity rates in the borough are higher than the London and England average. Data from Public Health England's annual National Child Measurement Programme for the school year 2015/16 estimate that in Enfield 23.9% of Reception age children and 41% of Year 6 children are either overweight or obese. For Year 6 children, Enfield's prevalence of overweight or obesity is the sixth highest of all London boroughs.

The effects of environmental issues on health are more concentrated in certain parts of the borough. For example, town centres and other areas with traffic congestion experience poorer air quality with consequent impacts for people vulnerable to respiratory and heart conditions. Some issues also impact more heavily in more deprived parts of the borough, with higher traffic accident casualty rates in the east of the borough.

4.11 Natural Capital and Natural Environment

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

- **Epping Forest Special Area of Conservation (SAC):** 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. The SPA is also designated as a Ramsar site given the international importance of the wetlands.

The Borough has a total of 50 areas designated as Sites of Importance for Nature Conservation Importance¹¹. Of these, seven are of Metropolitan Importance, 15 of Borough Importance Grade I and Borough Grade II and 33 of Local Importance. The waterways also offer a valuable habitat, which it is recognised should be preserved and enhanced.

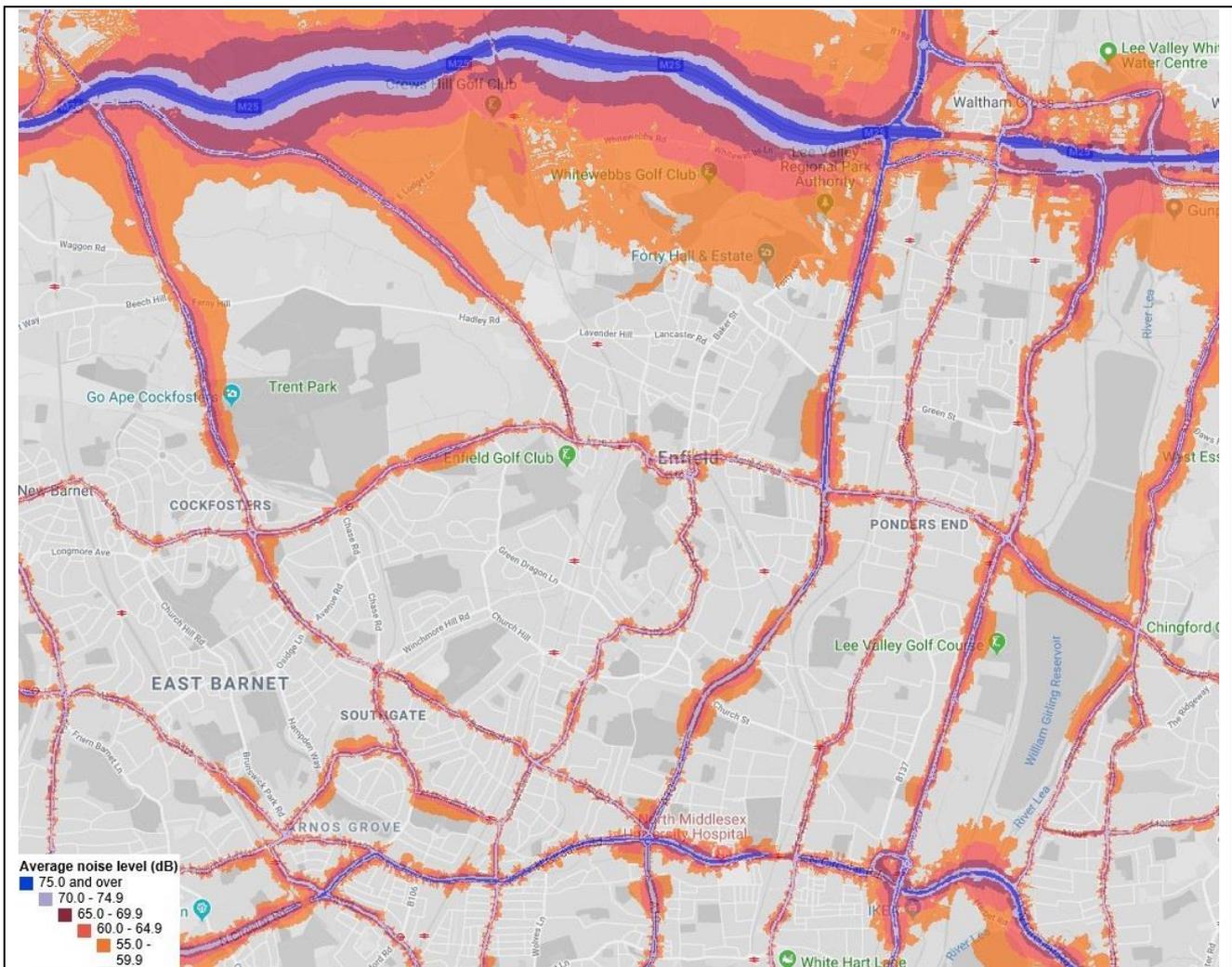
The Lee Valley Regional Park straddles the eastern boundary of the Borough and includes the designated sites referred to above.

¹¹ London Borough of Enfield (2012) - **Review of Enfield's Sites of Local and Borough Importance for Nature Conservation** – April 2012

4.12 Noise and vibration

Little information is available on noise and vibration generally across the Borough. **Figure 3.4.** below 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 3.4: LAeq 16-hour road traffic noise levels in London Borough of Enfield 2012



Source: <http://extrium.co.uk/noiseviewer.html>

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 3.4** it may be seen that the main areas affected by traffic noise in Enfield unsurprisingly are along the main traffic routes through the Borough, in particular, areas close the M25 to the north of the borough are exposed to high levels of noise. Areas close to the A1005 The Ridgeway, the A1010 Southbury Road, the A105 Green Lanes and the A10 Great Cambridge Road are also particularly affected by noise.

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

4.13 Safety and security

Enfield has a low overall crime rate when compared to neighbouring boroughs and London as a whole, with 58.5 reported crimes per 1,000 population recorded in 2016/17, which is continuing to drop according to Government Office statistics. The three most common types of recorded crime were theft and handling, violence against the person (excluding sexual offences) and burglary.

Data from the police shows that there were 7,255 calls concerning Anti-social Behaviour (ASB) logged in the period 2015/2016 – an increase of 1.7% from 2014/15 (7,134 calls). Of the main types of ASB logged, the most common complaints concerned street drinking, drugs and rowdy youths. ASB can lead to residents feeling unsafe when out alone after dark and be a barrier deterring people from travelling by sustainable modes such as walking, cycling or using public transport as they feel more vulnerable.

There is a spatial dimension to crime within the borough, with crime incidents, particularly incidents of violent crime, concentrated in places with high deprivation. Young people are more likely to be both victims and perpetrators of violent crime and those aged 13-21 are more likely to be victims of personal robbery.

There is a strong gender dimension to violent crime with 1 in 3 violent crimes an incident of domestic violence.

4.14 Water resources and quality

The River Lee is located along the eastern extent of the Borough and flows south to the Thames, forming the boundary between Enfield and Waltham Forest. It drains a large rural catchment to the north of London in Hertfordshire and Essex, extending as far as Luton.

The New River flows southwards through the centre of the borough. It was constructed in 1613 to supply drinking water to London. It is owned and operated by Thames Water and is currently used to transport water from the surrounding reservoirs and treatment plants.

Pymmes Brook flows east through the London Borough of Enfield, entering Haringey near Tottenham Marshes, then flowing south to the River Lee Navigation near Tottenham Hale.

Turkey Brook flows east through the London Borough of Enfield and is mostly shallow, fast flowing and clean. Coarse fish, including dace, use the brook to spawn.

Salmon's Brook is a minor tributary of the River Lee, located in the London Borough of Enfield. It is mostly culverted, and it flows in a west direction through the Deephams Sewage Treatment Works, the Eley Industrial Estate and close to the Edmonton Incinerator. The Salmon's Brook is failing standards for water quality, so to improve it the Council in collaboration with Thames21, The Environmental Agency and Thames Water has been working on a Sustainable Drainage System (SuDS) inspired by nature and the support of local residents.

The Moselle Brook was a natural tributary of the River Lee, but it now flows in a culvert into Pymmes Brook.

5.0 SEA Objectives and Framework

5.1 Objectives

Temple and Steer have confirmed with Enfield 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 Transport Plan and LIP have been 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 Transport Plan and 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 Transport Plan and 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 Transport Plan and 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 to 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.

Enfield 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 forms 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** Error! Reference source not found. 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^{12,13} will be likely to arise from implementation of the LIP. On this basis, no further assessment has been undertaken.

¹² Natural England (2014) - **European Site Conservation Objectives for Epping Forest Special Area of Conservation** - Site Code: UK0012720.

¹³ Natural England (2014) - **European Site Conservation Objectives for Lee Valley Special Protection Area** - Site Code: UK9012111.

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 seven Borough Transport Objectives of the Transport Plan and LIP are assessed in turn in the matrix tables in this section.

The likely effects of implementing the Transport Plan and 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 in a borough. It should be noted that the results of the modelling cannot be used directly, as it was only conducted at a strategic level, with the purpose of obtaining London-wide results. As such, borough-specific outputs are not available. Furthermore, this modelling takes into account the entire MTS, only some of which may be reflected in the LIP.

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

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

Table 5.2: Description of packages modelled for the MTS

Package	Description
Package A: Core reference case	<p>The core reference case includes funded public transport and highway schemes and likely changes in London's land use and economy. It assumes the latest available projections of population and employment from the GLA as well as Government assumptions on changes in the wider economy, and current funded schemes. A scheme list is provided in Appendix 1 and a summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Current view of funded National Rail2 schemes, HLOS programme, Thameslink programme, HS2, West Anglia and Great Western improvements. • The opening of the Elizabeth Line in 2019, the Northern Line Extension and Tube upgrades to the Victoria, Jubilee, Northern and Sub Surface Lines. • DLR, Trams, London Overground and bus service improvements. • TfL's Road Modernisation Plan, cycling infrastructure schemes and the introduction by 2020 of the Central London Ultra Low Emission Zone (ULEZ). <p>Wider assumptions have been made about policies relating to aspects such as fares, fuel costs and car parking.</p>

Package	Description
Package B: Optimising the network	<p>One of the main challenges identified in the core reference case is continued traffic dominance with highway congestion affecting bus speeds. Package B aims to enhance the existing network through bus priority schemes the reallocation of road space in areas of high place value identified by the Street Types for London. It also includes frequency improvements to some rail services. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Bus priority schemes, enabling faster journey times in Central London; low emission bus zones; and high frequency links; • 30 trains per hour on the Elizabeth Line; • Some selected National Rail and London Overground improvements; • Tram frequency uplifts; and • 10 to 30 per cent reduction in highway capacity on the highway links with the highest value ('place') as identified in Street Types for London.
Package C: Incremental expansion	<p>Crowding on the Tube, Elizabeth Line, DLR, London Overground, Trams and National Rail is a key challenge in the core reference case because funded improvements do not go beyond the mid-2020s and demand for travel will increase. Building upon the improvement schemes included in package B, package C aims to reduce crowding, encourage further mode shift from the car and increase public transport demand. London can also maximise the benefits of National Rail in south London by creating a London Suburban Metro. These schemes represent improvements that require line or track upgrades and new rolling stock but not new rail lines. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Deep Tube upgrade & World Class Capacity programmes including upgrades to the Bakerloo, Central, Waterloo & City, Piccadilly, Jubilee and Northern Lines; • Creating a London Suburban Metro; • Further National Rail investment including upgrades to West Anglia mainline, Brighton mainline, Chiltern Line and new stations; • 30 trains per hour on the DLR; • London Overground frequency increases; and • Construction of the Silvertown Tunnel and associated bus improvements.
Package D: New connections	<p>New public transport connections are needed to unlock growth in jobs and homes, provide an improved public transport service and reduce crowding. These schemes also support further agglomeration benefits in London's economy. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Crossrail 2, linking Surrey and Hertfordshire with two new 37 kilometre tunnels from Wimbledon to Tottenham Hale and New Southgate; • Bakerloo Line Extension to Lewisham and beyond; • Elizabeth Line extension to Slade Green; • DLR extensions from Gallions Reach; • London Overground extensions and strategic interchange investment including to Barking Riverside and Abbey Wood, and to Hounslow; • Tram extension from South Wimbledon to Sutton; and • Further bus network development.
Package E: Traffic reduction	<p>Package E contains a range of measures to reduce traffic and achieve Healthy Streets for London. A summary of key schemes is provided below:</p> <ul style="list-style-type: none"> • Further road space reallocation to walking, cycling and bus priority in order to reduce traffic dominance and deliver Healthy Streets for London. • Further increases in parking charges, limits on free commuter parking or a work place parking levy; • Measures to accelerate the rate of car ownership reduction resulting in a quarter of a million fewer cars owned in London; and • Measures to limit the growth of freight traffic, so that HGV traffic does not rise, and van traffic grows only in line with population.

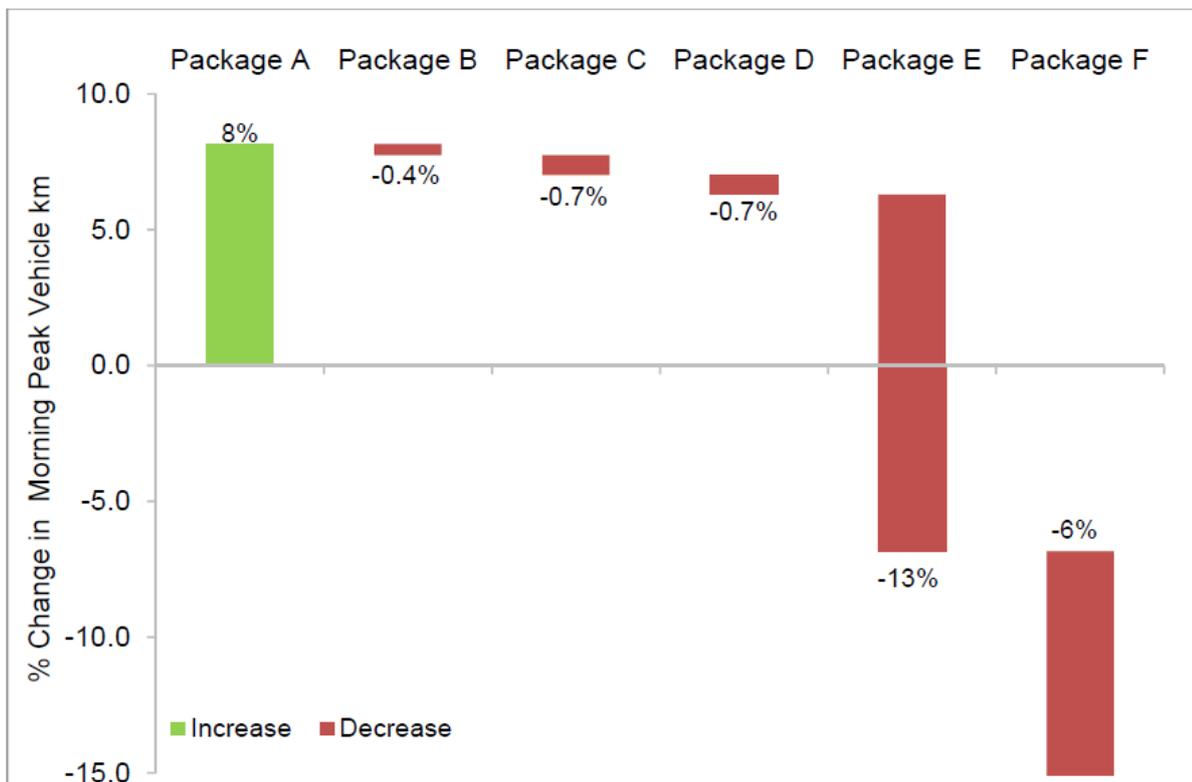
Package	Description
Package F: Longer term changes to the way road use is paid for	<p>Changes to the way road use is paid for in the longer term could help achieve an 80 per cent mode share for walking, cycling and public transport. A summary of the illustrative measures included is provided below:</p> <ul style="list-style-type: none"> An indicative distance-based charge. The inner London distance-based charge assessed was twice the outer London charge per kilometre; and Measures to encourage green technology uptake.

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

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

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

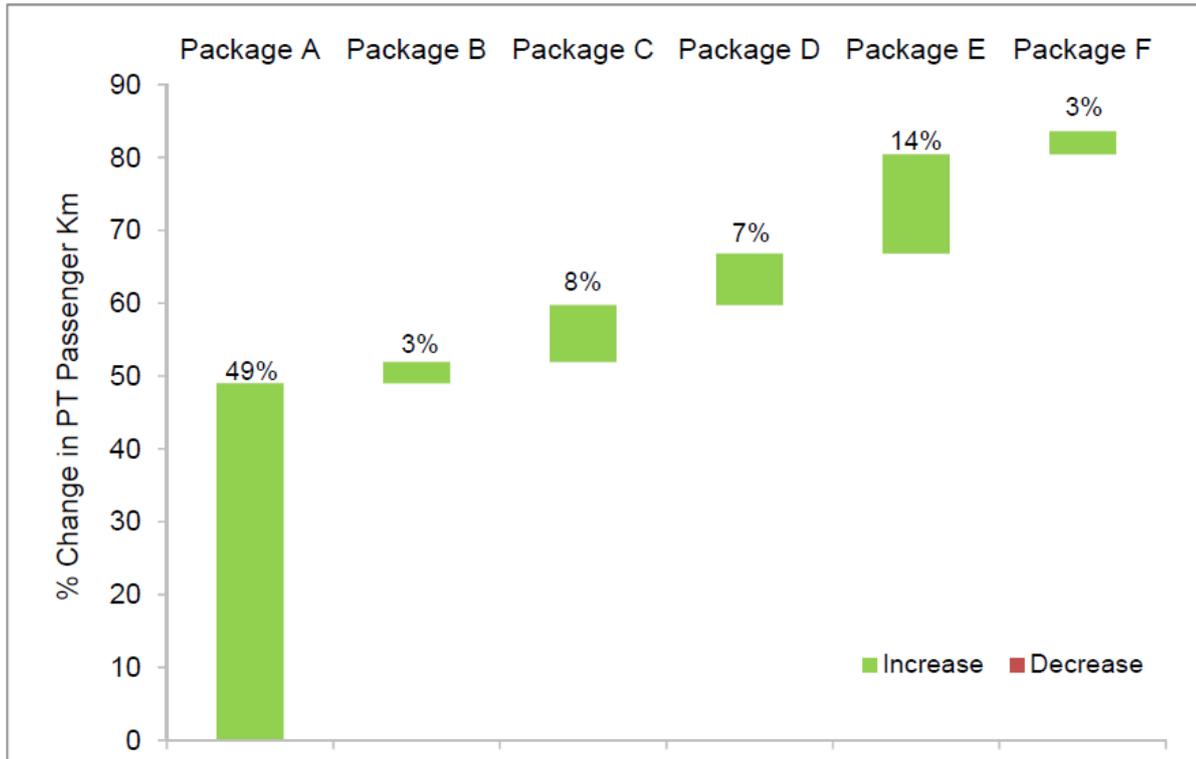
Figure 5.1: Change in London morning peak hour vehicle kilometres, 2015 to 2041 for packages A to F



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

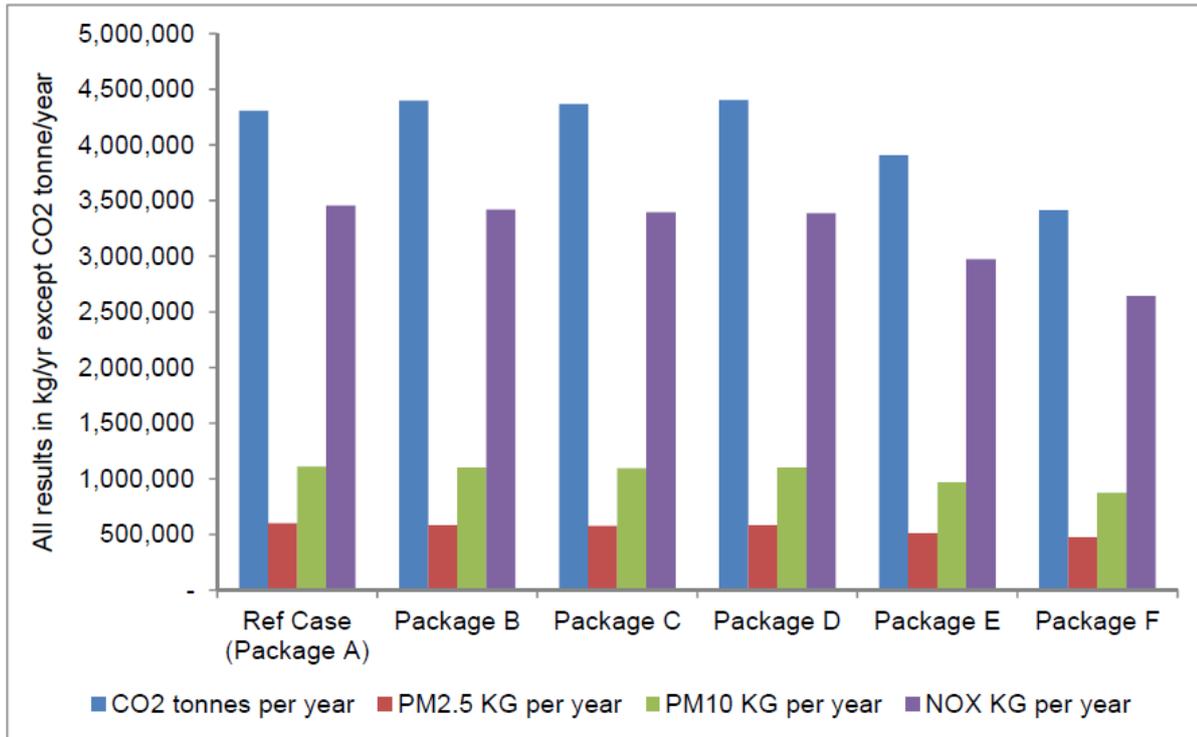
Figure 5.2: Change in 12-hour public transport passenger kilometres, 2015 to 2041 for packages A to F



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** below 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 Enfield LIP are likely to be positive in this regard, however at a very small scale when compared to the existing situation.

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



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

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

Table 5.3: 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: Transport Plan and LIP Objectives 1 Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough

Table 5.4: SEA Matrix 1 O1: Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough

Topic	Objective	Assessment guide questions	LIP Objective 1: Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough.		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	Encouraging mode shift and active travel through cycling will support emissions reduction.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift due to the proposals is unlikely to lead to a significant improvement in compliance with national standards, though is broadly positive in this direction.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Encouraging mode shift and active travel is likely to improve local air quality conditions and benefit vulnerable communities.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	The promotion of active travel and modal shifts 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 the objective will have positive impacts on air quality it is difficult to draw direct conclusions or direct correlation 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?	The promotion of modal shift and active travel is likely to have broadly positive impacts on local air quality, including schools, outdoor play areas, care homes and hospitals though the scale of the effect will likely be slight.	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?	Greater emphasis on walking, cycling and active travel will positively impact neighbourhoods and barriers to their use.	+	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Greater emphasis on walking, cycling and active travel will improve public realm attractiveness by reducing the dominance of motor vehicles, while improving access by sustainable modes.	+	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?	Modal shift to more active travel will not lead to physical changes to protect London from climate change.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Modal shift to more active travel will not lead to physical changes to protect London from climate change.	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at risk groups?	Modal shift to more active travel will not lead to physical changes to protect vulnerable communities from climate change.	0	None required

		Will it improve access to services during severe weather events?	Changes to cycling and walking infrastructure will improve access, though there will be no difference during severe weather. .	0	None required
		Will it reduce exposure to heat during heatwaves?	Changes to cycling and walking infrastructure will improve access, though there will be no difference during heatwaves	0	Not required
		Will it enable those vulnerable during severe weather events to recover?	Not applicable	0	Not required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	The promotion of and provision for active travel will support mode shift and associated emissions reduction. Although GHG emissions reduction will predominantly be achieved by changes in vehicle technology, mode shift has an important contribution to achieving emissions reduction.	+	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at risk groups	The promotion of and provision for active travel will support mode shift and associated emissions reduction. Although GHG emissions reduction will predominantly be achieved by changes in vehicle technology, mode shift has an important contribution to achieving emissions reduction including the effect on vulnerable communities and at risk groups. .	+	None required
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources	Will it reduce the demand and need for energy, whilst not leading to overheating?	The objective is likely to reduce the demand and need for energy in the borough whilst not leading to overheating.	+	None required.

	effectively, and ensure a resilient smart and affordable energy system	Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	The promotion of cycling and walking should lead to greater energy efficiency in transport overall	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Not applicable as cycling and walking do not directly require power.	?	.None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Not applicable as cycling and walking do not directly require power. Electric cycles may increase in use, but are unlikely to have any significant effect.	?	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Not applicable as cycling and walking do not directly require power..	?	.None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at risk groups?	The promotion of and provision for walking, cycling and active travel is likely to have positive impacts on vulnerable communities health inequalities.	+	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Greater emphasis on walking, cycling and active travel will increase accessibility and inclusivity across the population.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Greater emphasis on walking, cycling and active travel will support this.	+	None required

	historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it improve the wider historic environment and sense of place?	Greater emphasis on walking, cycling and active travel 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?	Greater emphasis on walking, cycling and active travel will support this..	+	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Greater emphasis on walking, cycling and active travel 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	Greater emphasis on walking, cycling and active travel will support this..	++	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Greater emphasis on walking, cycling and active travel will support this..	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	The promotion of and provision for active travel should provide a modest contribution to this.	+	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	The objective will not have any direct discernable impact which can be correlated with reducing flooding, heat and drought risk.	0	None required
		Will it improve access to greenspaces for recreational and health benefits?	Greater provision for and promotion of walking, cycling and active travel will lead to improved accessibility to or via green spaces.	+	None required

		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	The promotion of active travel should provide a broadly positive contribution to this though it is difficult to draw direct conclusions or direct correlation relating to premature deaths from poor air quality.	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
		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?	No direct effects.	0	None required

		Will it result in a greener public realm that can enhance mental health benefits?	Application of of the objective may result in greener streets at a local level, but positive impact may be small in aggregate.	0	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Greater emphasis on walking, cycling and active travel will support this.	+	None required
		Will reduce levels of noise generated?	Mode shift is unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it reduce inequalities in exposure to ambient noise?	Mode shift is unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Mode shift is unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it reduce night time noise in residential areas?	Mode shift is unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Mode shift is unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Mode shift is unlikely to be sufficient to noticeably reduce noise levels	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	Greater emphasis on walking, cycling and active travel will support this through increased “natural surveillance”.	+	None required

5.4.3 Matrix 2: Transport Plan and LIP Objective 2 Promote safe, active and sustainable transport to and from schools

Table 5.6: SEA Matrix 2 Objective 2: Promote safe, active and sustainable transport to and from schools

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	The modal shift to active and sustainable travel to schools is anticipated to have a positive benefit on reducing growth in emissions.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift in travel to schools is not likely to be sufficiently great to achieve a significant improvement in air quality at a national level.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	The focus on sustainable travel to schools is likely to have positive impacts on communities, particularly school children, vulnerable to poor air quality	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Mode shift in travel to schools 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 the objective will have positive impacts on air quality it is difficult to draw direct conclusions or direct correlation relating to premature deaths..	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	The focus on sustainable travel to schools is likely to have positive impacts on communities, particularly schoolchildren, vulnerable to poor air quality	+	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Increasing sustainable travel to schools is likely to have a broadly positive impact on character and liveability including removing barriers to use though the overall scale of the effect will be slight.	0	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Increasing sustainable travel to schools is likely to have a broadly positive impact on on public realm access and attractiveness though the overall scale of the effect will be slight.	0	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Proposed measures will not lead to physical changes/ adaptation to climate change.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Proposed measures will not lead to physical changes/ adaptation to climate change.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at risk groups?	Proposed measures will not lead to physical changes/ adaptation to climate change to reduce impacts on vulnerable and at risk groups. .	0	None required
		Will it improve access to services during severe weather events?	Proposed measures will improve access though there will be no difference during severe weather events.	0	None required
		Will it reduce exposure to heat during heatwaves?	Proposed measures will improve access though there will be no difference during heatwaves..	0	None required
		Will it enable those vulnerable during severe weather events to recover?	Not applicable	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	Mode shift by a proportion of the population travelling to and from school is not likely to be sufficiently large scale to give a notable reduction in GHG emissions in addition to that due to result from changes in vehicle technology.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at risk groups	Mode shift towards active travel is likely to have benefits to health inequalities in the borough.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			Assessment	Scale of Effect	Mitigation or Enhancement
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	Mode shift towards greater active travel to and from schools should lead to greater energy efficiency.	+	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Mode shift towards greater active travel to and from schools should lead to greater energy efficiency in transport to and from schools.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	No direct effect as measures focused principally on active travel which does not require power.	0	None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Not applicable as measures focused principally on active travel which does not require power.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Not applicable as measures focused principally on active travel which does not require power.	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at risk groups?	Active and sustainable travel to schools is likely to have positive effects on vulnerable communities and at risk groups travelling to and from school.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			Assessment	Scale of Effect	Mitigation or Enhancement
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Greater emphasis on active travel to and from school will increase accessibility and inclusivity for those travelling to and from school.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings.	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Greater emphasis active travel to and from schools will provide nominal support for this though the extent and scale of support is low.	0	None required
		Will it improve the wider historic environment and sense of place?	Greater emphasis active travel to and from schools will provide nominal support for this though the extent and scale of support is low	0	None required
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at risk groups?	Greater emphasis active travel to and from schools will provide nominal support for this though the extent and scale of support is low.	0	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Greater emphasis active travel to and from schools will provide nominal support for this though the extent and scale of support is low..	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			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	Greater emphasis on active travel to and from schools will support this.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Greater emphasis on active travel to and from schools will support this.	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	The promotion of and provision for active and sustainable travel to and from schools will provide an important contribution to the reduction in exposure to poor air quality by vulnerable groups including school children this	+	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	The objective will not have any direct discernable impact which can be correlated with reducing flooding, heat and drought risk.	0	None required
		Will it improve access to greenspaces for recreational and health benefits?	Greater provision for and promotion of active travel to and from schools will also support accessibility to or via green spaces.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	The promotion of active travel should provide a broadly positive contribution to this though it is difficult to draw direct conclusions or direct correlation relating to premature deaths from poor air quality.	0	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	No direct effects.	0	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	No direct effect.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	No direct effect.	0	None required
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	No direct effect.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	No direct effect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			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 may support access to green space and enhance mental health benefits through active travel, but not at the scale to benefit all Londoners.	0	None required
		Will it result in a greener public realm that can enhance mental health benefits?	The promotion of active and sustainable travel for schools may support greener streets at a local level, but positive impact likely to be small in aggregate.	0	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Greater emphasis on sustainable and active travel for schools will support this though mode shift unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it reduce levels of noise generated?	Greater emphasis on sustainable and active travel for schools will support this though mode shift unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it reduce inequalities in exposure to ambient noise?	Greater emphasis on sustainable and active travel for schools will support this though mode shift unlikely to be sufficient to noticeably reduce noise levels	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 2: Promote safe, active and sustainable transport to and from schools.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Greater emphasis on sustainable and active travel for schools will support this though mode shift unlikely to be sufficient to noticeably reduce noise levels.	0	None required
		Will it reduce night time noise in residential areas?	Active travel to schools is predominantly during the day so there would be no direct effect on night time noise..	0	None required
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Mode shift in travel to schools unlikely to be of sufficient scale to noticeably reduce the effects from noise levels	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Mode shift in travel to schools unlikely to be of sufficient scale to noticeably reduce the effects from 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?	Increased active travel to schools will support this through increased "natural surveillance".	+	None required

5.4.4 Matrix 3: Transport Plan and LIP Objective 3 Monitor air quality and develop and deliver interventions which address local issues

Table 5.7: SEA Matrix 3, O3: Monitor air quality and develop and deliver interventions which address local issues.

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			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)?	Modal shift, active travel, increased use of public transport, workplace travel plans etc are likely to contribute towards achieving this objective.	+	None required
		Will it help to achieve national and international standards for air quality?	The measures in themselves are unlikely to lead to a significant improvement in compliance with national and international standards, given their scale, though are broadly positive in this direction.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Modal change, active travel, public transport, workplace travel plans etc, together with alerting residents of high pollution events are likely to have positive impacts on this objective.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Mode shift and other aspects of the objective will not have a negative impact on health.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of premature deaths caused by poor air quality?	Although the objective will have positive impacts on air quality it is difficult to draw direct conclusions or direct correlation 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?	The measures including workplace travel plans, increased charging infrastructure etc. are likely to have positive impacts on communities vulnerable to poor air quality	+	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	The measures including reduction in car usage, improvement in active travel and increased charging infrastructure etc. are likely to have positive effects on character, integrity and removing barriers to use.	+	None required
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Reduction in car usage, improvement in active travel and increased charging infrastructure etc. are likely to have positive effects on attractiveness and access.	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and	Will it protect London from climate change impacts?	Proposed measures will not lead to physical changes/ adaptation to climate change.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			Assessment	Scale of Effect	Mitigation or Enhancement
	extreme weather events such as flood, drought and heat risks	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?	The focus around active travel along with the communication of high pollution events is likely to have health benefits for vulnerable groups.	+	None required
		Will it improve access to services during severe weather events?	Proposed measures will not have a bearing on access to services during severe weather events.	0	None required
		Will it reduce exposure to heat during heatwaves?	Not applicable	0	None required
		Will it enable those vulnerable during severe weather events to recover?	Not applicable	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	Although GHG emissions reduction will predominantly be achieved by changes in vehicle technology, the measures will have an important contribution to achieving emissions reduction..	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce health inequalities and impacts on more vulnerable communities and at risk groups	Mode shift towards active travel and communication on high pollution events is likely to support a reduction in health inequalities in the borough.	+	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 should lead to greater energy efficiency.	+	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Measures should lead to greater energy efficiency in transport.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	No identifiable direct effect though there could be a marginal positive effect depending on the supplier/ source of electricity for charging infrastructure	0	Seek to ensure supplier of electricity for charging infrastructure procures energy from renewable sources.
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	No identifiable direct effect though there could be a marginal positive effect depending on the supplier/ source of electricity for charging infrastructure	0	Seek to ensure supplier of electricity for charging infrastructure procures energy from renewable sources
		Will it provide infrastructure to make a better use of renewable energy sources?	No identifiable direct effect though there could be a marginal positive effect depending on the supplier/ source of electricity for charging infrastructure	0	Seek to ensure supplier of electricity for charging infrastructure procures energy from renewable sources

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at risk groups?	The measures may have broadly positive impacts on vulnerable communities' health inequalities though not of sufficient scale to be identifiable.	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 measures will support this objective helping to increase accessibility and inclusivity	+	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?	The measures will provide nominal support for this though the extent and scale of support is low. .	0	None required
		Will it improve the wider historic environment and sense of place?	The measures will provide nominal support for this though 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?	The measures will support accessibility to the historic environment.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	The measures 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 measures include a direct focus on active modes of travel, which will have positive impacts on this.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	The measures include a direct focus on active modes of travel and improving air quality which will have positive impacts in reducing health inequalities..	+	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	The communication of high pollution events will have positive impacts on communities vulnerable to poor air quality.	++	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	The scale of interventions is unlikely to have any direct impacts on flooding, heat and drought risk.	0	None required
		Will it improve access to greenspaces for recreational and health benefits?	Greater emphasis active travel will lead to improved accessibility including to green spaces	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	The communication of high pollution events will have positive impacts on communities vulnerable to poor air quality.	++	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	No direct effects.	0	None required
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	No direct effect.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	No direct effect.	0	None required
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	No direct effect.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	No direct effect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			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 may support access to green space and enhance mental health benefits through active travel, but not at the scale to benefit all Londoners.	0	None required
		Will it result in a greener public realm that can enhance mental health benefits?	The measures including promotion of active travel is likely support greener streets at a local level.	+	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 measures including support for active travel will support this.	+	None required
		Will reduce levels of noise generated?	The measures including support for active travel will broadly support this though are unlikely to be sufficient to noticeably reduce noise levels .	0	None required
		Will it reduce inequalities in exposure to ambient noise?	The measures including support for active travel will broadly support this though are unlikely to be sufficient to noticeably reduce noise levels.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	The measures including support for active travel will broadly support this though are unlikely to be sufficient to noticeably reduce noise levels.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 3: Monitor air quality and develop and deliver interventions which address local issues		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce night time noise in residential areas?	The measures including support for active travel will broadly support this though are unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Measures are unlikely to be sufficient to noticeably reduce noise levels	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures are unlikely to be sufficient to noticeably reduce noise levels	0	None required
Safety and security	To contribute to safety and security and generate the perceptions of safety;	Will it promote the design and management of green spaces that helps to reduce crime and anti-social behaviour?	Greater emphasis on active travel will support this through increased "natural surveillance".	+	None required

5.4.5 Matrix 4: Transport Plan and LIP Objective 4. Manage growing demand for on-street parking

Table 5.8: SEA Matrix 4 O4 Manage growing demand for on-street parking

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM ₁₀ , NO _x , NO ₂)?	Reductions in pollutant emissions are likely to result from improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments.	+	None required
		Will it help to achieve national and international standards for air quality?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments should provide a small contribution to this though this is not likely to be sufficiently great to achieve a significant improvement in air quality at a national level	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Managing private car use is likely to contribute to improvements in local air quality and benefit vulnerable communities.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Improved management of on-street parking and car use will not have a negative impact on this.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments it is difficult to draw direct conclusions or direct correlation relating to premature deaths.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			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?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will have broadly positive impacts on air quality though the scale of the effect will likely be slight.	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?	Improved management of on-street parking and kerbside space will positively impact neighbourhoods and barriers to their use.	+	None required.
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Improved management of on-street parking and kerbside space will improve attractiveness and access to areas where implemented.	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will not lead to physical changes to protect London from climate change.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will not lead to physical changes to help London function during extreme weather events.	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a significant impact on the reduction of health inequalities.	0	None required
		Will it improve access to services during severe weather events?	Unlikely to have any direct impact in this respect.	0	None required
		Will it reduce exposure to heat during heatwaves?	Unlikely to have any direct impact in this respect.	0	None required
		Will it enable those vulnerable during severe weather events to recover?	Unlikely to have any direct impact in this respect.	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	The improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will support. GHG emissions reduction.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Although GHG emissions reduction will predominantly be achieved by changes in vehicle technology, improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments have an important contribution to achieving emissions reduction including the effect on vulnerable communities and at risk groups.	+	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?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will help manage the demand and need for energy..	+	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments should lead to greater energy efficiency in transport overall.	+	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will not have an identifiable direct effect..	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			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?	No identifiable direct effect.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a direct impact in this respect.	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a direct impact in this respect.	0	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will support this objective helping to increase accessibility and inclusivity.	+	None required
Historic Environment	To conserve and enhance the existing historic environment, including sites, features, landscapes and areas of historical, architectural,	Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are likely to have a positive impact in this respect.	+	

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement
	archaeological and cultural value in relation to their significance and their settings.	Will it improve the wider historic environment and sense of place?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are likely to have a positive impact in this respect.	+	.
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a significant impact in this respect.	0	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a significant impact in this respect.	0	None required.
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	Measures encourage car-free developments promoting active modes of transport and contributing to this objective.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a direct impact in this respect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a direct impact in this respect.	0	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	The measures are unlikely to have any direct impacts on flooding, heat and drought risk..	0	None required
		Will it improve access to greenspaces for recreational and health benefits?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a direct impact in this respect.	0	None required.
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments are not likely to have a direct impact 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 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 effects. .	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	No direct effects. .	0	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?	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?	Measures may support access to green space and enhance mental health benefits through active travel, but not at the scale to benefit all Londoners.	0	
		Will it result in a greener public realm that can enhance mental health benefits?	The development of more car-free developments may support a greener public realm which can enhance mental health.	?	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 measures including car-free developments will support this.	+	.
		Will reduce levels of noise generated?	The measures including car-free developments will support this..	+	Measures focused near tranquil areas.
		Will it reduce inequalities in exposure to ambient noise?	The measures including car-free developments will support this..	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 4: Manage growing demand for on-street parking		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Whilst supportive, the scale is unlikely to be sufficient to noticeably reduce noise levels for vulnerable groups.	0	None required
		Will it reduce night time noise in residential areas?	Whilst supportive, the scale is unlikely to be sufficient to noticeably reduce noise levels across the borough's residential areas..	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?	Whilst supportive, the scale is unlikely to be sufficient to contribute noticeably to this.	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?	Improved management of on-street parking and measures to encourage reduced private car ownership and car-free developments will support this through increased "natural surveillance".	+	None required.

5.4.6 Matrix 5: Transport Plan and LIP Objective 5 Focus on and improve priority locations making them safer for vulnerable road users

Table 5.7: SEA Matrix 5 O5: Focus on and improve priority locations making them safer for vulnerable road users

Topic	Objective	Assessment guide questions	LIP Objective 5: focus on and improve priority locations making them safer for vulnerable road users		
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			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 to improve road safety for vulnerable users are not likely to have a significant impact on air quality.	0	None required
		Will it help to achieve national and international standards for air quality?	Measures to improve road safety for vulnerable users are not likely to have a significant impact on 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 to improve road safety for vulnerable users are not likely to have a significant impact on air quality.	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	Measures to improve road safety for vulnerable users will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Measures to improve road safety for vulnerable users are not likely to significantly contribute towards the reduction of the number of people exposed to poor air quality.	0	None required
		Will it improve air quality around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?	Measures to improve road safety for vulnerable users are not likely to have a significant impact on air quality.	0	None required
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Measures to improve road safety for vulnerable users will support character and liveability including removing barriers to use.	+	None required

	sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it improve the use of the urban public realm by improving its attractiveness and access?	Measures to improve road safety for vulnerable users will support attractiveness and access to public realm.	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Measures to improve road safety for vulnerable users are unlikely to protect London from climate change impacts.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	Measures to improve road safety for vulnerable users are not likely to help London function during extreme weather.	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Measures to improve road safety for vulnerable users are unlikely to help reduce health inequalities and impacts on vulnerable groups during extreme weather.	0	None required.
		Will it improve access to services during severe weather events?	No direct effects..	0	None required
		Will it reduce exposure to heat during heatwaves?	No direct effects.	0	None required
		Will it enable those vulnerable during severe weather events to recover?	No direct effects..	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?	No direct effects.	0	None required

		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	No direct effects..	+	Focus measures on key streetscapes and townscapes to maximise benefits to Enfield population.
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	No direct effects.	0	None required.
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	No direct effects.	0	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	No direct effects..	0	None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	No direct effects.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	No direct effects..	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	No direct effects.	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?	Measures to improve road safety for vulnerable users will increase accessibility and inclusivity.	+	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?	No direct effects..	0	None required.
		Will it improve the wider historic environment and sense of place?	Measures to improve road safety for vulnerable users and traffic management schemes 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?	Measures to improve road safety for vulnerable users and traffic management schemes and speed reduction will support the removal of barriers to use from vulnerable communities.	+	None required.
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Measures to improve road safety for vulnerable users could potentially support inclusive design and management depending on design though the overall contribution is likely to be slight.	0	None required

Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	Measures to improve road safety for vulnerable users and traffic management schemes and speed reduction have the potential to improve connectivity to key services by promoting active modes of transport, though the level of impact is deemed to be slight..	0	None required.
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Measures to improve road safety for vulnerable users are not likely to help to reduce health inequalities.	0	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Measures to improve road safety for vulnerable users are not likely to reduce at risk and vulnerable groups' exposure to poor air quality.	0	None required.
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	No direct effects.	0	None required.
		Will it improve access to greenspaces for recreational and health benefits?	Measures to improve road safety for vulnerable users will provide some support to access to greenspaces for recreational and health benefits	+	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 to improve road safety for vulnerable users will not have direct impacts on this.	0	None required.
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the	Will it enhance the potential for the green space network to provide ecosystem services?	No direct effects..	0	None required

	services and benefits it provides, delivering a net positive outcome for biodiversity	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
		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?	Measures to improve road safety for vulnerable users and traffic management schemes and speed reduction have the potential to improve connectivity to green space with associated health benefits by promoting active modes of transport, though the impact of this is deemed to be slight..	0	None required
		Will it result in a greener public realm that can enhance mental health benefits?	No direct effects.	0	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in	Will it improve access to quiet and tranquil places for all?	No direct effects..	0	None required
		Will reduce levels of noise generated?	No direct effects.	0	None required

	exposure	Will it reduce inequalities in exposure to ambient noise?	No direct effects.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	No direct effects..	0	None required
		Will it reduce night time noise in residential areas?	No direct effects.	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?	No direct effects.	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 likely to provide modest opportunities for design and management of green spaces that helps to reduce crime and anti-social behaviour and contribute to increased "natural surveillance". Traffic management schemes and speed reduction and Road Safety Audits will reduce road danger.	+	None required

5.4.7 Matrix 6: Transport Plan and LIP Objective 6 Improve local reliability of and accessibility to the public transport network

Table 5.8: SEA Matrix 6 O6: Improve local reliability of and accessibility to the public transport network

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.
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		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 to improve reliability and accessibility to the public transport network will broadly support emissions reduction through the contribution is likely to be slight.	0	None required
		Will it help to achieve national and international standards for air quality?	Measures to improve reliability and accessibility to the public transport network are unlikely to contribute to improvement in compliance with air quality standards.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Measures to improve reliability and accessibility to the public transport network are unlikely to significantly impact air quality.	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	Measures to improve reliability and accessibility to the public transport network will not negatively impact the health of the public.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Measures to improve reliability and accessibility to the public transport network are unlikely assist this reduction.	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?	Measures to improve reliability and accessibility to the public transport network are unlikely to significantly impact air quality.	0	Measures focused on areas near schools, outdoor play areas, care homes and hospitals.

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.		
			Assessment	Scale of Effect	Mitigation or Enhancement
Attractive neighbourhoods	To create attractive, mixed use neighbourhoods, ensuring new buildings and spaces are appropriately designed that promote and enhance existing sense of place and distinctiveness, reducing the need to travel by motorised transport.	Will it protect and enhance the character, integrity and liveability of key streetscapes and townscapes, including removing barriers to use?	Measures will protect and enhance character, integrity and liveability of areas where implemented, while removing barriers to use.	+	Measures focused on key streetscapes and townscapes.
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Measures will improve attractiveness and access to to the public realm in areas where implemented.	+	None required
Climate change adaptation	To ensure London adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks	Will it protect London from climate change impacts?	Measures to improve reliability and accessibility to the public transport network are unlikely to protect London from climate change impacts.	0	None required
		Will it help London function during extreme weather events (e.g. heat, drought, flood) without impacts on human health and/or well-being?	No direct effects..	0	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	No direct effects.	0	None required
		Will it improve access to services during severe weather events?	No direct effects.	0	None required
		Will it reduce exposure to heat during heatwaves?	No direct effects.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it enable those vulnerable during severe weather events to recover?	No direct effects.	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 to improve reliability and accessibility to the public transport network are unlikely to help reduce GHG emissions.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Unlikely to have any direct impact in this respect.	0	None required
Energy use and supply	To manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system	Will it reduce the demand and need for energy, whilst not leading to overheating?	No direct effects.	0	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Unlikely to have any direct impact in this respect in the short term.	0	None required
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Unlikely to have any direct impact in this respect in the short term.	0	None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Unlikely to have any direct impact in this respect in the short term.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it provide infrastructure to make a better use of renewable energy sources?	Unlikely to have any direct impact in this respect in the short term.	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Unlikely to have any direct impact in this respect in the short term.	0	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Measures to improve reliability and accessibility to the public transport network will positively impact on 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 to improve reliability and accessibility to the public transport network have the potential to enhance these sites, depending on the location of schemes brought forward.	?	Measures focused near such sites, features and areas.
		Will it improve the wider historic environment and sense of place?	Measures to improve reliability and accessibility to the public transport network have the potential to improve the sense of place, depending on the location of schemes brought forward.	?	Measures focused near such sites, features and areas.

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.		
			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?	Measures to improve reliability and accessibility to the public transport network have the potential to contribute to this depending on the location of schemes brought forward.	?	None required
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Measures to improve reliability and accessibility to the public transport network have the potential to contribute to this depending on the location of schemes brought forward.	?	None required
Mental and physical Wellbeing	To improve the mental and physical health and wellbeing of Londoners and to reduce health inequalities across the city and between communities.	Will it improve connectivity to key services by promoting active modes of transport, thereby helping to reduce emissions from road transport	Measures to improve reliability and accessibility to the public transport network will improve connectivity to key services.	+	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Measures unlikely to have direct impacts on this.	0	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Measures unlikely to have significant impacts on this.	0	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	No direct effects	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to greenspaces for recreational and health benefits?	Depends on the location of schemes delivered.	?	Measures focused on areas near to greenspace.
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	Measures unlikely to have direct impacts on this.	0	None required
Natural Capital and Natural Environment	To protect, connect and enhance London's natural capital (including important habitats, species and landscapes) and the services and benefits it provides, delivering a net positive outcome for biodiversity	Will it enhance the potential for the green space network to provide ecosystem services?	Measures unlikely to have direct impacts on this.	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 unlikely to have direct impacts on this.	0	None required
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	Measures unlikely to have direct impacts on this.	0	None required
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	Measures unlikely to have direct impacts on this.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it increase the planting of green roofs, green walls and soft landscaping?	Measures unlikely to have direct impacts on this.	0	None required
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Dependent on the design of specific schemes.	?	Encourage design of measures to include green infrastructure.
		Will it result in a greener public realm that can enhance mental health benefits?	Dependent on the location of specific schemes delivered.	?	Measures focused on areas near to greenspace.
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 unlikely to have a significant impact on noise levels	0	None required.
		Will reduce levels of noise generated?	Measures unlikely to have a significant impact on noise levels.	0	None required
		Will it reduce inequalities in exposure to ambient noise?	Measures unlikely to have a significant impact on noise levels.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures unlikely to have a significant impact on noise levels.	0	None required
		Will it reduce night time noise in residential areas?	Measures unlikely to have a significant impact on noise levels.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 6: Improve local reliability of and accessibility to the public transport network.		
			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 unlikely to have a significant impact on noise levels.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Measures unlikely to have a significant impact on 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 to improve areas around stations and accessibility to the public transport network will support these factors.	+	Measures focused on areas with highest levels of crime and anti-social behaviour.

5.4.8 Matrix 7: Transport Plan and LIP Objective 7 Maintain and improve the transport network in Enfield including developing potential interventions

Table 5.11: SEA Matrix 7 O7 Maintain and improve the transport network in Enfield including developing potential interventions

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			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 to maintain and improve the transport network in Enfield including Healthy Streets should contribute to the reduction in emissions of priority pollutants.	+	None required
		Will it help to achieve national and international standards for air quality?	Improvements of the transport network, including improvements against the ten Healthy Streets Indicators is broadly positive in this direction though is unlikely to lead to a significant improvement in compliance with national standards.	+	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Improvements of the transport network, including improvements against the ten Healthy Streets Indicators, should contribute to this.	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Improvements of the transport network will not have negative impacts on this.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it reduce the number of premature deaths caused by poor air quality?	Improvements of the transport network, including improvements against the ten Healthy Streets Indicators, will have positive impacts though it is difficult to draw direct conclusions or direct correlation 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?	Improvements of the transport network, including improvements against the ten Healthy Streets Indicators, should 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?	Improvements of the transport network and public realm, including the delivery of green infrastructures, planting of new trees and improved accessibility of the pedestrian environment will protect and enhance these elements.	++	Measures focused on key streetscapes and townscapes.
		Will it improve the use of the urban public realm by improving its attractiveness and access?	Improvements of the transport network and public realm, including the delivery of green infrastructures, planting of new trees and improved accessibility of the pedestrian environment will improve accessibility and attractiveness of the urban public realm.	++	None required

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			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?	Improvements of the transport network, including the delivery of green infrastructures and SuDS will contribute to protecting London from climate change impacts.	+	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?	Improvements of the transport network, including the delivery of green infrastructures and SuDS will provide a contribution to this.	+	None required
		Will it reduce health inequalities and impacts on vulnerable groups / communities and at-risk groups?	Improvements of the transport network, including the delivery of green infrastructures and SuDS are not likely to have a significant impact on the reduction of health inequalities.	0	None required
		Will it improve access to services during severe weather events?	Improvements of the transport network, including the delivery of green infrastructures and SuDS will contribute to this.	+	None required
		Will it reduce exposure to heat during heatwaves?	Improvements of the transport network, including the delivery of green infrastructure and provision of shading will contribute to this.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it enable those vulnerable during severe weather events to recover?	Improvements of the transport network, including the delivery of green infrastructures and SuDS will marginally contribute to this i.e. not to any notable extent.	0	None required
Climate change mitigation	To help tackle climate change through reducing greenhouse gas emissions and moving towards a zero carbon London by 2050	Will it help reduce emissions of greenhouse gases (including from transport), and help London meet its emission targets?	GHG emissions reduction is unlikely to be significantly driven by the physical improvement of the transport network.	0	None required
		Will it reduce health inequalities and impacts on more vulnerable communities and at-risk groups	Improvements of the transport network, including the delivery of green infrastructures and SuDS is unlikely to contribute to 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?	Improvements to the transport network, including improvements against the ten Healthy Streets Indicators, are not likely to have a direct impact in this respect.	0	None required
		Will it promote and improve energy efficiency in transport, homes, schools, hospitals and other public buildings?	Improvements to the transport network, including improvements against the ten Healthy Streets Indicators, are not likely to have a direct impact in this respect.	0	None required

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it increase the proportion of energy both purchased and generated from renewable and sustainable sources?	Improvements to the transport network, including improvements against the ten Healthy Streets Indicators, are not likely to have a direct impact in this respect.	0	None required
		Will it encourage uptake of green/cleaner fuels and renewable energy provision across all transport providers and private cars?	Improvements to the transport network, including improvements against the ten Healthy Streets Indicators, are not likely to have a direct impact in this respect.	0	None required
		Will it provide infrastructure to make a better use of renewable energy sources?	Improvements to the transport network, including improvements against the ten Healthy Streets Indicators, are not likely to have a direct impact in this respect.	0	None required
		Will it reduce health inequalities and impacts of fuel poverty on vulnerable communities and at-risk groups?	Improvements of the transport network, including improvements against the ten Healthy Streets Indicators, are not likely to have a direct impact in this respect.	0	None required
Fairness and inclusivity	To make London a fair and inclusive city where every person is able to participate, reducing inequality and disadvantage and addressing the diverse needs of the population.	Will it enable deficiencies of access to facilities to be positively addressed?	Improvements of the transport network, including the delivery of green infrastructure and improved accessibility of the pedestrian environment will improve accessibility.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			Assessment	Scale of Effect	Mitigation or Enhancement
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 of the transport network, including the delivery of green infrastructure, tree planting and improved accessibility of the pedestrian environment will positively impact on this.	+	None required.
		Will it improve the wider historic environment and sense of place?	Improvements of the transport network, including the delivery of green infrastructure, tree planting and improved accessibility of the pedestrian environment may marginally impact on this.	0	None required.
		Will it protect and enhance the historic environment, including removing barriers to use from vulnerable communities and at-risk groups?	Improvements of the transport network, including the delivery of green infrastructures, tree planting and improved accessibility of the pedestrian environment will positively impact on this.	+	None required.
		Will it protect and enhance valued/important historic environment and streetscape settings through inclusive design and management?	Improvements of the transport network, including the delivery of green infrastructures, tree planting and improved accessibility of the pedestrian environment will positively impact on this.	+	None required.

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			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	Improvements of the transport network, including the delivery of green infrastructures, tree planting and improved accessibility of the pedestrian environment should marginally impact on this.	0	None required
		Will it help to reduce health inequalities and their key contributory factors for all Londoners?	Improvements of the transport network, including the delivery of green infrastructure, tree planting and improved accessibility of the pedestrian environment are unlikely to significantly impact on this.	0	None required
		Will it reduce at risk and vulnerable groups' exposure to poor air quality?	Improvements of the transport network, including the delivery of green infrastructures, tree planting and improved accessibility of the pedestrian environment are unlikely to significantly impact on this.	0	None required
		Will it reduce flooding, heat and drought risk for at risk and vulnerable communities?	Improvements of the transport network and public realm, including the delivery of green infrastructures, SuDS, tree planting and improved accessibility of the pedestrian environment will positively impact on this.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it improve access to greenspaces for recreational and health benefits?	Improvements of the transport network and public realm, including the delivery of green infrastructure, SuDS, tree planting and improved accessibility of the pedestrian environment will positively impact on this.	+	Measures focused on areas near to greenspace.
		Will it help to reduce the number of people dying prematurely from preventable causes such as extreme heat and poor air quality?	Improvements of the transport network and public realm, including the delivery of green infrastructures, SuDS, tree planting and improved accessibility of the pedestrian environment will contribute to this, although not to a significant extent.	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?	Improvements of the transport network and public realm, including the delivery of green infrastructures, SuDS, tree planting and measures that deliver a net gain in biodiversity will contribute to this.	+	None required.
		Will it protect and improve the quality and extent of sites of importance for nature conservation and help restore wildlife habitats?	Improvements of the transport network and public realm, including the delivery of green infrastructures, SuDS, tree planting and measures that deliver a net gain in biodiversity will contribute to this.	+	None required

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			Assessment	Scale of Effect	Mitigation or Enhancement
		Will it provide opportunities to enhance the natural environment or restore wildlife habitats?	Improvements of the transport network and public realm, including the delivery of green infrastructures, SuDS, tree planting and measures that deliver a net gain in biodiversity will contribute to this..	+	None required
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	Improvements of the transport network and public realm, including the delivery of green infrastructures, SuDS, tree planting and measures that deliver a net gain in biodiversity may contribute to this though the level of impact is marginal	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	Improvements of the transport network and public realm, including the delivery of green infrastructures, SuDS, tree planting and measures that deliver a net gain in biodiversity will contribute to this.	+	None required
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	Dependent on the location of specific schemes delivered.	?	Encourage design of measures to include green infrastructure.
		Will it result in a greener public realm that can enhance mental health benefits?	Dependent on the location of specific schemes delivered.	?	Measures focused on areas near to greenspace.

Topic	Objective	Assessment guide questions	LIP Objective 7: maintain and improve the transport network in Enfield including developing potential interventions		
			Assessment	Scale of Effect	Mitigation or Enhancement
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Dependent on the design of specific schemes.	?	Encourage design of measures to include green infrastructure.
		Will reduce levels of noise generated?	Dependent on the location of specific schemes delivered.	?	Measures focused near tranquil areas.
		Will it reduce inequalities in exposure to ambient noise?	Unlikely to be sufficient to noticeably reduce noise levels.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Unlikely to be sufficient to noticeably reduce noise levels.	0	None required
		Will it reduce night time noise in residential areas?	Unlikely to be sufficient to noticeably reduce noise levels.	0	None required
		Will it reduce the number of people exposed to high levels of noise with the potential to cause annoyance, sleep disturbance or physiological effects?	Unlikely to be sufficient to noticeably reduce noise levels.	0	None required
		Will it protect vulnerable groups at risk from impacts of noise pollution?	Unlikely to be sufficient to noticeably 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?	Improvements of the transport network and public realm, including lighting, access to paths and design 'in passing' surveillance will contribute to this.	++	None required.

5.5 Monitoring

The LIP does not currently include specific proposals for environmental monitoring. However, in relation to the effects identified in the SEA, Temple and Steer recommend that key indicators from the set compiled by the London Sustainable Development Commission (LSDC) on Quality of Life issues be used by Enfield Council to monitor the environmental effects of the final Transport Plan 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 are set out in **Table 5.12** below.

Table 5.12: Recommended indicators for monitoring the SEA for the draft Transport Plan 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 ¹⁴	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

¹⁴ 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 Transport Plan and LIP was submitted to Transport for London in November 2018 for comment. Taking account of the comments received from TfL together with the analysis presented in this Environmental Report, Enfield Council will then make any revisions to the Transport Plan and LIP that may be necessary, and a final version will be approved in January 2019. The LIP will come into operation in April 2019.

6.2 Remaining Stages in the SEA Process

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

Figure 6.1: Stages in the SEA Process



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

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

During Stage D, Temple and Steer will prepare the Post-Adoption Statement on behalf of Enfield 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.

