

London Borough of Waltham Forest
Strategic Transport Review
Report

SR#2

Final Report | 22 May 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Executive Summary

Arup has been appointed by the London Borough of Waltham Forest to undertake a Strategic Transport Review of the transport evidence base which has, and will continue to, inform the development of the new Local Plan.

This report comprises the first stage of the review and includes a desktop review of studies, strategies and programmes that have been produced and undertaken to date by the Borough, to understand how the existing transport network operates, and begin to identify current constraints, gaps and opportunities for future work. This review has specifically considered opportunities to reduce the environmental impact of transport within the Borough in light of the Borough's declaration of a Climate Emergency in 2019.

The desktop review has been supplemented by workshops with stakeholders from the London Borough of Waltham Forest, Arup staff who are residents of the Borough and perception surveys relating to transport which have been undertaken by the Council.

To provide an understanding of the transport vision and objectives which underpin the emerging Local Plan, a review of local and regional policies relevant to transport in Waltham Forest was undertaken. The following key objectives have been developed against which the major transport-related proposals in the Borough have been assessed against:

- Ensuring housing and economic growth is delivered sustainably;
- Creating liveable and safe neighbourhoods by enhancing placemaking and maximising the unique strengths of the Borough.
- Ensuring transport is accessible for all;
- Enabling access across the Borough by reliable and efficient alternatives to private car use;
- Supporting local town centres to enhance the local economy, reduce the need to travel and increase travel by active modes; and
- Contribute to improved health and wellbeing of those who live, work and study in the Borough.

A review of the existing conditions in the Borough has been undertaken which considers the existing transport network, usage and how these vary within the Borough. This is particularly relevant considering the Borough's growth plans and further development of economic hubs. This will bring challenges to the transport system, which will have to manage increasing trip-demand whilst aiming to reduce the environmental impact of transport and improve accessibility and inclusivity in line with the Borough's and Major's transport objectives.

Through this review several transport challenges have been identified, which are outlined below:

1. Lack of internal connections north-south in the Borough;
2. Concentration of transport infrastructure developments south of the A406;
3. Higher rates of physical inactivity in the Borough compared to the London average;
4. Station capacity constraints;
5. Road traffic collisions and conflicts between people cycling and walking;
6. Existing bus network and services, which a large proportion of the Borough rely on, do not provide a viable alternative to private car use; and
7. Managing the effects of the Ultra Low Emission Zone (ULEZ) expansion.

The transport policies currently being put forward in the Draft Local Plan have been assessed alongside the existing evidence base and proposed interventions, followed by an assessment of the proposals against the vision and objectives for the Borough. This is followed by a summary considering the Borough's existing strengths and opportunities.

The key strengths identified relate to existing work undertaken by through the Enjoy Waltham Forest programme, aspirations to provide accessible access at all Underground and Overground stations, behaviour change work, including Schools Streets, and the Zero Emission Delivery programme.

The opportunities identified to improve transport across the Borough are outlined below:

- Harnessing north south differences in travel patterns to achieve mode shift;
- Working with neighbouring Boroughs to deliver a holistic transport system;
- Assessment of the effects of proposed growth areas utilising appropriate transport modelling;
- Develop trigger points for transport interventions to leverage funding sources;
- Consider the impact of the ULEZ on parking in the north of the Borough and how parking controls can be used to manage car dependence;
- Ensuring sustainable links towards growth areas in the Upper Lea Valley;
- Undertaking monitoring to refine interventions and evaluate success;
- Review existing bus network and potential to introduce demand-responsive bus services;
- Implement a dockless bike sharing strategy across the Borough and consider dockless bike parking areas;
- Develop a freight strategy to manage the impact across the Borough;
- Increase physical activity across the Borough to improve health outcomes; and
- Reduce road traffic incidents.

The recommendations of this review and the next steps required to address these opportunities and develop a comprehensive, robust evidence base for the Local Plan are set out below.

Update the current review to account for the ongoing Covid-19 pandemic and **complete the proposed Stages 2 to 4** of the Transport Review Study as proposed. Completing the remaining stages would comprise of Stage 2 which would look to clearly identify all transport-related opportunities and constraints alongside high-level prioritised actions for the short, medium and long term and a detailed gap analysis between committed and planned interventions; Stage 3 which would involve further development of the gap analysis, which would aid the development of trigger points for interventions and possible funding sources; and Stage 4 which would enable the finalisation and delivery of a fully comprehensive Strategic Transport Review report.

Develop a comprehensive **Integrated Transport Strategy** for the Borough, including, appropriate levels of **transport modelling**, a detailed **parking appraisal** (which would specifically identify opportunities for introducing CPZs in the north of the Borough and updating parking policy) and a **freight review** including existing and future conditions.

Improve **internal collaboration** through a central data store and the production of a **Dashboard** to collate and store project information to visualise, monitor and manage regeneration programmes across the Borough in an easily accessible location, available to all parts of the Council. This review has revealed that significant good work is being done across the different teams within the Council, however, there is generally a lack of cross-team collaboration. Bringing together the various workstreams and enhancing collaboration particularly between the Planning, Enjoy Waltham Forest and Climate Commission workstreams will improve outcomes through knowledge sharing. This will allow an understanding of cumulative project impacts within a central data repository.

1 Introduction

Arup has been appointed by the London Borough of Waltham Forest to undertake a Strategic Transport Review of the transport evidence base which has, and will continue to, inform the development of the new Local Plan.

This report comprises the first stage of the review and includes a desktop review of studies, strategies and programmes that have been produced and undertaken to date. This review considers how the existing transport network currently operates, the current constraints and identify gaps and opportunities for future work that may be required.

There is a particular focus on improving use of sustainable transport in the Borough following the Council's declaration of a climate emergency in 2019. This led to the Climate Emergency Commission being set up in order to manage and inform the Council's Climate Emergency Strategy and make recommendations for how climate action can be taken at a local level. The commission has considered the key contributors to climate change among a number of key sectors, including transport and is developing an Action Plan on how these impacts will be addressed and mitigated.

The aim of this report is to set out the strategic transport context and what could constitute part of a comprehensive base to underpin the policies set out within the updated Waltham Forest Local Plan. It will also consider how well these align with local, London-region, national and supranational objectives and agendas.

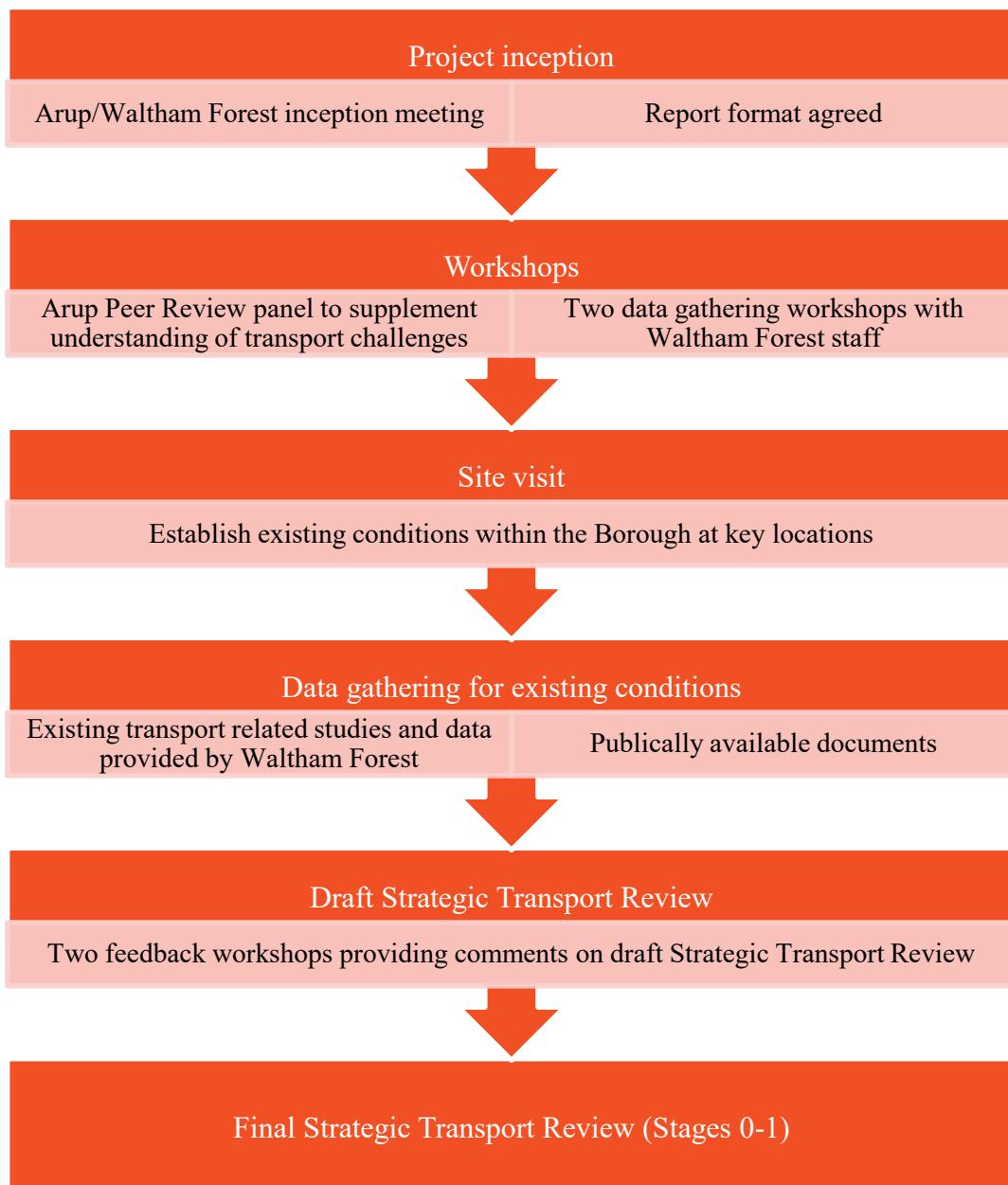
The remainder of this report is structured as follows:

- Section 2 sets out the policy context and objectives which apply to Waltham Forest and how these relate to the Local Plan;
- Section 3 identifies the demographic and transport context in the Borough;
- Section 4 provides an assessment of the existing transport proposals and how well relate to identified key objectives; and
- Section 5 outlines recommendations and next steps for the Local Plan, supported by international best practice case studies.

It is important to consider this report within the context of the recently experienced changes in transport conditions in recent months associated with the Covid 19 outbreak and subsequent UK lockdown in March 2020. There have been significant changes in transport patterns and there is significant uncertainty around the long-term impacts this will have. It is beyond the scope of this current review to understand the current impacts on the transport network and the likely far-reaching impacts of the global pandemic on the Borough in terms of transport and related health and wellbeing. However, it is acknowledged that additional work and a review of the present recommendations may be needed to solidify the Council's understanding of transport conditions and impacts on funding later in 2020 or beyond, when transport conditions have settled.

1.1 Method

A methodology has been produced and included below to outline the steps of work undertaken to inform this initial Desktop Review.



2 Transport Vision and Objectives

This section sets out local and regional policies relevant to transport in Waltham Forest which will underpin the transport vision and objectives outlined for the emerging Local Plan. These policies will set out the criteria against which all transport proposals should be assessed.

2.1 Key objectives

Based on a review of the existing local and London-wide policy relevant to the Borough, the following key objectives have been developed against which the major transport-related proposals in the Borough will be assessed against. These objectives primarily draw on the Draft Local Plan ‘5 Golden Threads’, the Mayors Transport Strategy, the Intend to Publish version of the London Plan, the Waltham Forest 2020 Cycling Vision and the Local Implementation Plan 3 and are set out below:



Ensuring housing and economic growth is delivered sustainably;



Creating liveable and safe neighbourhoods by enhancing placemaking and maximising the unique strengths of the Borough.



Ensuring transport is accessible for all;



Enabling access across the Borough by reliable and efficient alternatives to private car use;



Supporting local town centres to enhance the local economy, reduce the need to travel and increase travel by active modes; and



Contribute to improved health and wellbeing of those who live, work and study in the Borough.

2.2 Local policy and supporting work

Waltham Forest Local Plan (2012) and Waltham Forest Draft Local Plan (2019)

The Waltham Forest Draft Local Plan (2019) is due to be adopted and replace the existing Waltham Forest Local Plan: Core Strategy (2012) in 2020.

The Draft Local Plan (2019) sets out three overarching priorities for the Borough:

- i. Safer cleaner streets,
- ii. Ensuring a decent roof over the heads of our residents,
- iii. Improving the life chances of all our residents.

To achieve these, the draft plan sets out 5 Golden Threads as shown in Figure 1. These principles have informed the key objectives of the Transport Strategy to inform the assessment of projects proposed.



Figure 1 Waltham Forest Draft Local Plan 5 Golden Threads

Further strategic objectives are identified in the Draft Local Plan to enable Waltham Forest to deliver their vision for 2035. Objective 8 relates to transport specifically, setting out that the Borough will *improve active and sustainable transport choices across the Borough and beyond building on the success of the 'Enjoy Waltham Forest programme', encouraging wider integrated walking and cycling routes.*

Chapter 15 of the Draft Local Plan provides more detail on how the borough will deliver on objectives relating to *Sustainable Transport and Infrastructure*. This includes:

- Providing liveable neighbourhoods;

- Enhancing opportunities for walking and cycling;
- Improving public transport;
- Minimising impact of freight and servicing;
- Ensuring new developments produce construction and logistics plans;
- Managing vehicular travel, including through parking management;
- Enabling EV uptake; and
- Undertaking monitoring to assess the transport impact of developments.

Further detail on transport proposals for the Borough are then set out in the Waltham Forest Local Implementation Plan 3 (2019), Waltham Forest and Growth and Investment Strategy (2018).

London Borough of Waltham Forest: Local Implementation Plan 3 (2019)

The Local Implementation Plan (2019) sets out how the Borough proposes to deliver the London Mayor's Transport Investment Strategy (MTS) in Waltham Forest. The LIP takes into account relevant planning documents including, the Draft London Plan, the Councils Draft Local Plan, Transport Infrastructure Growth and Investment Strategy. And sets out how Waltham Forest will deliver transport investments in the Borough. The LIP (2019) sets out six key transport objectives which are included below:

1. Shift to a culture of sustainable travel;
2. Liveable neighbourhoods for everyone;
3. Place-making and access for all at stations;
4. Planning a smarter, greener bus network; and
5. Delivering a public transport network to meet future demand.

The LIP also provides a Delivery Plan outlining possible funding sources and timeframes for delivery of 31 transport projects and three Major/Liveable Neighbourhoods schemes in addition to how these align with the MTS. This is explored further in Section 4.

Waltham Forest Transport Infrastructure: Growth and Investment Strategy (2018)

This Strategy sets out the case for transport intervention and how investment will be secured to deliver projects that will facilitate continued economic growth and regeneration within the Borough and supporting '*ambitious plans for sustainable regeneration and growth, improving the life chances and quality of life for its residents, supporting local economic growth and positioning the borough as one of the most desirable places to live, visit, work and do business in London.*'

The Strategy identifies five priority projects and two complementary workstreams that support the proposed regeneration and growth in the Borough, the five priority projects are outlined below:

- Walthamstow Central: Transport Interchange for a Major Centre in London
- Redeveloping Leyton Underground Station: Meeting Growing Demand
- A new Ruckholt Road Station: Unlocking the Leyton Growth Area
- Station Gateways: Investment in Place-Making and Access for All
- Planning a Smarter, Greener Bus Network

The two work streams are included below:

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

London Borough of Waltham Forest Draft Habitats Regulation Assessment (2020)

In early 2020, London Borough of Waltham Forest identified that the way in which the Local Plan balances delivering economic growth in the Borough, and mitigates against poor air quality and recreational impacts in the Epping Forest Special Area of Conversation (SAC) and Lee Valley Specially Protected Area (SPA), would be a critical factor in producing a sound Local Plan.

Waltham Forest commissioned a Habitats and Regulations Assessment (HRA) screening of their Draft Local Plan, which is designed to sit alongside the Sustainability Appraisal, but also inform other parts of the evidence base including transport studies. The HRA document establishes a holistic approach, by examining the conditions currently affecting Epping Forest SAC both inside and outside of the Borough boundary and comparing these findings with what is those found in work compiled by London Borough of Waltham Forest neighbouring authority - Epping Forest District Council - in order to provide an evidence based document that is coherent with other studies being completed on the forest area.

The HRA screens the policies in the Draft Local Plan for its impact on the Epping Forest SAC and Lee Valley Regional Park (SPA) for Likely Significant Effects (LSEs). If LSEs are found on Draft Local Plan policies, then appropriate mitigation measures must be taken in order to make the Draft Local Plan sound for examination.

The Appropriate Assessment has considered the following potential effects and found the following:

- Recreational Pressure: Falls within the recreational zone of influence meaning the delivery of new homes may have adverse impact on the SAC due to increased recreational pressures;
- Water Pollution: No significant effects;

- Water Demand: No significant effects;
- Air Pollution: Assessment not possible until traffic data is procured; and
- Urbanisation: Proposed policy amendments in the HRA contain a mechanism to protect EFSAC from urban affects in order to ensure no adverse effects on the integrity of Epping Forest occur as a result of urban effects rising from the policies in the draft Local Plan.

EFSAC

The recreational pressures that are occurring in the Epping Forest described in the HRA as the; “Trampling and wear from cyclists leading to soil compaction/ erosion and damage to veteran tree roosts, eutrophication from dog fouling, grazing challenges due to interactions between visitors and livestock, direct damage to veteran trees from climbing, damage to tree saplings effecting recruitment of new trees, harvesting, disturbance to invertebrates and other wildlife”.

The results of air quality assessments across the Epping Forest SAC are still being awaited.

Lee Valley SPA and Ramsar

Recreational Pressures occurring in the Lee Valley Regional Park (SPA & Ramsar) include the; disturbance of the bird species for which the Lee Valley SPA and Ramsar is designated (either by people or cycling).

London Borough of Waltham Forest Draft Local Plan Sustainability Appraisal (2019)

The Sustainability Appraisal (2019) was undertaken to assess the social, economic and environmental effects of the Draft Local Plan in line with National Planning Policy Framework (2008). The Sustainability Appraisal (SA) also incorporates the Strategic Environmental Assessment (SEA). The SA includes twenty strategic objectives, several of these relate to transport and are included below:

- SA2 – Reduce crime and the fear of crime, including provision of safe and accessible environments;
- SA3 – Improve standard of health and wellbeing of those who live and work in the Borough, including by increasing levels of physical activity;
- SA4 – Improve community cohesion and reduce inequalities through the provision of community facilities to meet local cultural, educational, recreational and social needs;
- SA5 – Improve opportunities for access to local services, facilities and employment through an integrated sustainable transport system, reducing car use for all journey lengths;
- SA7 – Reduce greenhouse gas emissions and promote low carbon growth;
- SA9 – Improve air quality; and

- SA18 – Maintain and enhance the vitality and viability of the Borough’s town centres.

The proposed policies in the Draft Local Plan were assessed individually against these objectives. In terms of Sustainable Transport and Infrastructure, most of the policy effects were classified as “significant positive”, with the exception of policies on Deliveries Freight and Servicing, and Construction Logistics Plan, which were classified as “uncertain”.

A cumulative effect of proposals is also provided which recognised that the concentration of development in certain areas of the Borough is likely to cause a strain on existing transport conditions.

London Borough of Waltham Forest Air Quality Action Plan (2018 - 2023)

The Air Quality Action Plan sets the actions to be taken by the Borough in order to reduce concentration and exposure to pollution. The Action Plan recognises that transport is one of the biggest contributors to the issue, and therefore proposes a number of transport-related actions as outlined below:

- **Action 9a:** Update the ‘Living Streets’ map developed by Enjoy Waltham Forest suggesting better Air Quality walking and cycling routes.
- **Action 13:** For the head of transport to be fully briefed on Public Health duties and air quality opportunities and risks related to transport in the borough. –
- **Action 16a & 16b:** Run School Streets trials and to implement a School Air Quality Ambassador and campaign to promote the Transport for London STARS programme.
- **Action 20a-d:** Monitor the use of the Zero Emissions Vehicle Service and Cargo Bikes, promotion of these initiatives through the website, development of a Construction Consolidation Pilot and monitoring of the Waltham Forest Sustainable Freight initiative.
- **Action 21:** Complete a feasibility study on Virtual Loading Bays in town centres.

The full list of actions is included in Table 4.1 of the Air Quality Action Plan, which includes details of the stakeholder responsible, cost range, benefits, timescales, monitoring and further information for each action. Any further Transport Strategy or Policy work should reflect and be consistent with the actions proposed in the Air Quality Action Plan.

London Borough of Waltham Forest Electric Vehicle Charging Point Strategy (2018-2022)

The Electric Vehicle Charging Point Strategy was developed by Waltham Forest to enable residents, businesses and visitors in Waltham Forest to convert to low emissions vehicles, reducing transport related emissions and promoting more

sustainable forms of transport. The Strategy, therefore, sets out the six key objectives which will support growth of EV's in the Borough to 2022. These are outlined below:

- Deliver an electric vehicle charging network that meets the demands of residents, businesses and visitors;
- Designing sites that take into consideration other road users, particularly pedestrians;
- Ensure full coverage of the borough by 2022;
- Ensure the charging network has capacity for further expansion;
- Encourage the uptake of electric vehicles through initiatives and public engagement; and
- Identify income opportunities that will lead to the provision and maintenance of charging points becoming cost neutral to the borough.

It must be noted that the strategy provides explicit consideration to electric bikes within each objective (as considered a form of EV). For example, it recognises the importance of having electric charging points suitable for electric bikes across the Borough and by fitting EV charging points with a socket to cater for bikes as well.

New objectives relating to supporting uptake of Electric Vehicles in the Borough are currently under development.

2020 Vision, Cycling in the London Borough of Waltham Forest (2015 – 2020)

The 2020 Cycling Vision reviews the work done so far in improving Waltham Forest's cycling conditions as well as the plans for the forthcoming years. With 2020 in mind, it sets the main target of achieving a *10% cycling mode share across all trips by all residents*.

Following on from the Mini-Hollands programme, the borough aims to maintain the same objectives around:

- Cycling: To substantially increase cycling in the borough and to make it an attractive and mainstream mode of transport;
- Modal shift: To shift a significant proportion of short local car trips to the bike;
- Better public spaces: To improve the look and feel of public spaces;
- Economic regeneration: To support the growth of our local economy by encouraging people to walk and cycle to their local town centres;
- Safety: Improve actual and perceived safety for cyclists on our streets;
- Health: To reduce the burden of preventable disease in the borough by increasing the number of adults and children incorporating physical activity into their daily routines; and

- Developments: Encourage developers to build upon this infrastructure by developing sustainably and putting cycling first in their transport proposals.

The 2020 Vision focuses primarily on cycling. An expanded version is currently being developed and due for publication in 2020, which will focus on not just cycling but also walking up to 2025.

Waltham Forest Health and Wellbeing Strategy (2016 - 2020)

The main goal of the Health and Wellbeing Strategy is '*to improve health and reduce inequalities*'. To achieve this, it sets three key outcomes, Outcome two of these relates to transport aiming for residents of Waltham Forest to live '*Healthy, longer, happy lives: prosperous, active and sustainable*'. One of its sub-aims is: '*more people will be living and working in safe, energy efficient places, breathing cleaner air in safer streets*'.

To achieve Objective two the Strategy sets out the need to '*work with the 'Mini-Holland' scheme and other partners to reduce air pollution and promote active travel and ensure that sustainability is at the heart of local action*'.

The Health and Wellbeing Strategy recognises the potential role of transport in contributing to a number of other objectives set in the strategy. For example, to those related to

- Improving the health and wellbeing of younger age groups (outcome 1);
- Supporting people '*to make healthy lifestyle choices order to promote good health and prevent the development of illness*' (outcome 2);
- Connecting and strengthening communities (outcome 2);
- Reducing health inequalities between all groups – including disabled residents (outcome 2); and
- Reducing social isolation amongst and promoting independent living for older people (outcome 3).

Waltham Forest Economic Growth Strategy (2016-2020)

Waltham Forest's Economic Growth Strategy (2016-2020) outlines the Councils vision for economic growth, by focussing on five key themes which are set out below:

- Theme 1 Business, keep, seen and grow;
- Theme 2 Town centres, promotion and investment;
- Theme 3 Housing growth;
- Theme 4 Employment and skills; and
- Theme 5 Infrastructure.

The Strategy centres on revitalisation of existing town centres and creation of town centres at the re-opened Lea Bridge Station and the Blackhorse Lane area.

Regarding transport the need to develop an Integrated Infrastructure Plan predicting and providing infrastructure to match future plans for growth.

Waltham Forest Climate Local Action Plan update (2014)

The Climate Local Action Plan (2014) provides an update on progress and actions from the 2008 Strategy. Specifically the update includes 10 commitments to climate action, including the following which relate to transport;

- Promoting measures to encourage healthy and lower carbon lifestyles;
- Reduce Borough transport emissions by encouraging developers to prioritise the needs of sustainable transport modes, show community leadership, improving air quality and levels of cycling

This strategy is currently undergoing updates through the Climate Emergency Commission based on the Council's announcement of a Climate Emergency in 2019.

Chingford to Stratford Appraisal – Re-Introducing a Train Service (2010)

This document examines the operational and economic feasibility of re-introducing a train service between Chingford and Stratford, and also of re-opening Lea Bridge Station, which would be served by this re-instated service.

The report concludes that a regular 15-minute interval service between Chingford and Stratford is operationally feasible and would be primarily used by passengers accessing Stratford and the Docklands area. Regarding development of a station at Lea Bridge Road it was concluded this would be pursued separately as part of broader regeneration plans in this area.

Waltham Forest Climate Change Strategy (2008)

The Waltham Forest Climate Change Strategy (2008) sets out the Borough's objective to reduce carbon emissions by 80% compared to 2005 levels by 2050, alongside actions that will be undertaken to reduce emissions and adapt to future conditions. The Strategy considers six themes which are outlined below;

- Planning and housing;
- Transport;
- Buildings;
- Waste and recycling;
- Energy and procurement; and
- Managing natural habitats.

Key actions identified relating to transport are to maintain a strong focus on behaviour change emissions, work with TfL to improve north to south travel through the Borough including reinstating the Hall Farm Curve and considering

the life costing for construction to consider long term benefits of sustainable projects.

Residents Parking Schemes (2008)

The policy update sets out that residents parking schemes will be able to expand beyond stations and town centres which they were previously limited to, alongside the need for consolation in the area that parking stress is identified including residents and businesses. A requirement is set stating that at least 51% of respondents need to approve the proposals before implementation can take place.

2.3 Regional policy

London Electric Vehicle Infrastructure Delivery Plan (2019)

The Mayor of London developed the Electric Vehicle Infrastructure Delivery Plan to support Transport and Environment Strategies commitment to delivering zero emission road transport, and a zero carbon city by 2050. The delivery plan acknowledges the primary existing barrier to uptake is availability – or perceived availability - of charging infrastructure, increasing capacity of EV charging is key to facilitating planned growth.

The primary aims and recommendations are that public charge points should be open to all allowing increased public confidence in charging infrastructure, a mix of rapid and slower chargers are needed to support different user groups, the streetscape impact of these should be reduced where possible.

The London Plan – Intend to Publish (2019)

The Intend to Publish London Plan (2019) sets out the overall spatial development strategy for London, including a vision of an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years. The London Plan focuses on *good growth*, defined as '*growth that is socially and economically inclusive and environmentally sustainable*'. The plan emphasises the role of good growth in *improving the health and quality of life of all Londoners and reducing inequalities*. As such, transport plays a key role in ensuring that communities are well connected to goods, services and opportunities to fulfil their full potential. Six 'Good Growth' objectives are identified, which are outlined below:

- GG1 Building strong and inclusive communities;
- GG2 Making the best use of land;
- GG3 Creating a healthy city;
- GG4 Delivering the homes Londoners need;
- GG5 Growing a good economy; and
- GG6 Increasing efficiency and resilience.

The need for ‘good growth’ is reflected in Policy 4 ‘Ensuring Good Growth’ of the Draft Local Plan for Waltham Forest and also enforces the key thread of supporting sustainable infrastructure.

The Intend to Publish London Plans set the target for developing 1,800 homes each year in Waltham Forest, which is reflected in the Draft Local Plan growth proposals. The new London Plan designates Walthamstow and Wood Street as Strategic Areas for Regeneration.

Chapter 4 of the Intend to Publish Plan sets out more detailed transport policies for the city. These largely relate to encouraging modal shift, ensuring transport infrastructure taking a strategic approach and gives due consideration to the Mayors Transport Strategy and Healthy Streets approach.

Mayors Transport Strategy (2018)

The MTS recognises the ‘cornerstone’ role transport plays in delivering London’s broader objectives. To do so, the main target it sets is for:

‘80 per cent of all trips in London to be made on foot, by cycle or using public transport by 2041’.

Another key focus is on improving health through active travel, improving road safety, reducing traffic congestion and overall emissions whilst shifting towards zero-emission vehicles. Alongside improvements to public transport including projects focussing on accessibility improvements such as providing step-free access.

The Mayors Transport Strategy enforces the Draft London Plan approach to new developments, focussing on good growth whilst setting transport-specific principles. Given the expected high rate of growth in Waltham Forest it is key that any new developments in the borough comply with the following, as set out in the Strategy:

- Good access to public transport;
- High-density, mixed-use developments;
- People choose to walk and cycle;
- Car-free and car-lite places;
- Inclusive, accessible design;
- Carbon-free travel; and
- Efficient freight.

The Mayors Transport Strategy also outlines a spatial approach for transforming the transport system. In terms of Outer London, the Strategy highlights the ‘*huge untapped potential*’ of cycling to replace shorter car trips. As such, the Strategy encourages improvements to the walking and cycling environment, implementation of measures to reduce car dependency and improvements to public transport services.

The Strategy acknowledges the significance of rail for longer distance journeys and need to improve bus services to replace existing car journeys. Additionally, it encourages the implementation of demand-responsive bus services where traditional routes are not appropriate.

Four supporting action plans were also developed to detail how the MTS proposals will be achieved the action plans include:

Walking action plan, which aims to make London the most walkable city in the world, by enabling people to walk part or all of their journey by improving walking experiences.

Vision Zero action plan, aims to eliminate all deaths and serious injuries on London's transport system, with a primary focus on London's streets.

Freight and servicing action plan, to support safe, clean and efficient freight movement.

Cycling action plan, focussing on enabling Londoners to make cycling part of their everyday travel.

London Environment Strategy (2018)

The London Environment Strategy (2018) sets out a vision for London to become a zero-carbon city by 2050. The Strategy brings together a number of policies and proposals which will be enacted to achieve the goals identified, across several themes which impact on the quality of London's environment, specifically:

- Air quality;
- Green infrastructure;
- Climate change mitigation and energy;
- Waste;
- Adapting to climate change;
- Ambient noise; and
- Low carbon circular economy.

Regarding transport the Strategy aims to develop a clean transport system improving air quality for all alongside developing streets which encourage walking, cycling and public transport.

Healthy Streets for London (2017)

The Healthy Streets approach is defined as '*the system of policies and strategies to help Londoners use cars less and walk, cycle and use public transport more.*' In order to tackle levels of inactivity, congestion and noise and air pollution in the city and enable Londoners to live healthy lives which incorporate active travel. Healthy Streets focuses on 10 indicators to make streets more pleasant, safe and attractive which are shown in Figure 2.

The Healthy Streets document emphasis the need to deliver the Healthy Streets Approach at three main levels which are, street level through character and use of city streets, network level with planning and management of the transport network, and strategic level through policy and planning for growth.



Figure 2 10 Healthy Streets indicators¹

The Healthy Streets document emphasis the need to deliver the Healthy Streets Approach at three levels to have an impact, these are, street level through character and use of city streets, network level with planning and management of the transport network, and strategic level through policy and planning for growth.

North London Sub-Regional Transport Plan, 2016 Update (2016)

The North London Sub-Regional Transport Plan was first developed by TfL in 2010 to translate the MTS goals, challenges and outcomes to a sub-regional level, enabling TfL to work with Boroughs to address strategic issues, progress medium-longer term priorities and also respond to changing circumstances. The 2016 update responds to the 2016 Mayors Transport Strategy

The major challenges identified are the need for significant housing growth and access to sustainable transport which can support this and unlock growth opportunities, in addition to increasing employment at transport nodes. Alongside

¹ Transport for London, 2020. Healthy Streets for London. [online] London: Transport for London, pp.1-17. Available at: <<http://content.tfl.gov.uk/healthy-streets-for-london.pdf>> [Accessed 1 May 2020].

this the increase in populations 65+, with Blackhorse Road seeing one of the greatest increases in North London and a need for an accessible transport network to cater for this ageing.

Public transport mode share has potential to increase, but only if this is supported by an increase in capacity, this is required to prevent worsening traffic congestion.

Upper Lee Valley Opportunity Area Planning Framework (2013)

The *Upper Lee Valley Opportunity Area Planning Framework* (ULV OAPF) was adopted in July 2013 and was produced by the GLA working in conjunction with TfL, the London Boroughs of Enfield, Haringey, Waltham Forest and Hackney. The *ULV OAPF* seeks to set an overarching framework for the regeneration of 3,884 hectares area that is shared between the previously mentioned four boroughs.

More specifically, to facilitate the growth at Tottenham Hale, Blackhorse Lane, Meridian Water in Central Leeside and Ponders Ends. The document is a Supplementary Planning Guidance to the London Plan and will be used as a material consideration in the determination of planning applications.

With respect to transport, the ULV OAPF's vision for Upper Lee Valley is to “*create a transport network which meets the objectives of the Mayor's Transport Strategy*” and “*exploit the Upper Lee Valley's international, regional and local connections, and enhance these further*”.

The key objectives of the plan are growth of housing and jobs, which integrate with existing communities and significant investment and improvement to transport infrastructure for trains, walking and cycling, and a fully accessible network of green and blue spaces which open up the Lee Valley Regional Park.

The Strategic Transport Modelling that was used to underpin the planning framework was updated in 2018 to reflect changes in planning policy, site allocations and development since 2013, however there is yet to be an identified date for the update to the planning framework itself.

3 Existing Context

This section reviews the existing conditions in the Borough, relevant local and city-wide trends and their implications for transport. The Borough's population is expected to grow and economic hubs to further develop. This will bring challenges to the transport system, which will have to manage increasing trip-demand whilst aiming to reduce the environmental impact of transport and improve accessibility and inclusivity in line with the Borough's and Major's transport objectives.

Throughout this section several transport challenges have been identified, the key challenges we have identified are outlined below:

1. Lack of internal connections north-south through the Borough;
2. Concentration of transport infrastructure developments south of the A406;
3. Higher rates of physical inactivity in the Borough compared to the London average;
4. Station capacity constraints;
5. Rate of road traffic collisions and perception of conflict between people cycling and walking;
6. Existing bus network and services which a large proportion of the Borough rely on do not provide a viable alternative to private car use; and
7. Harnessing the effects of the ULEZ expansion.

3.1 Travel in Waltham Forest

This section provides a high-level overview of the existing transport networks and their performance in providing connections between key centres of activity. The existing transport network and key destinations within the Borough are shown below in Figure 3, including Waltham Forest Village Schemes at Forest Road and Lea Bridge Road and Town Centre schemes around Leyton, Leytonstone, Chingford and Highams Park.

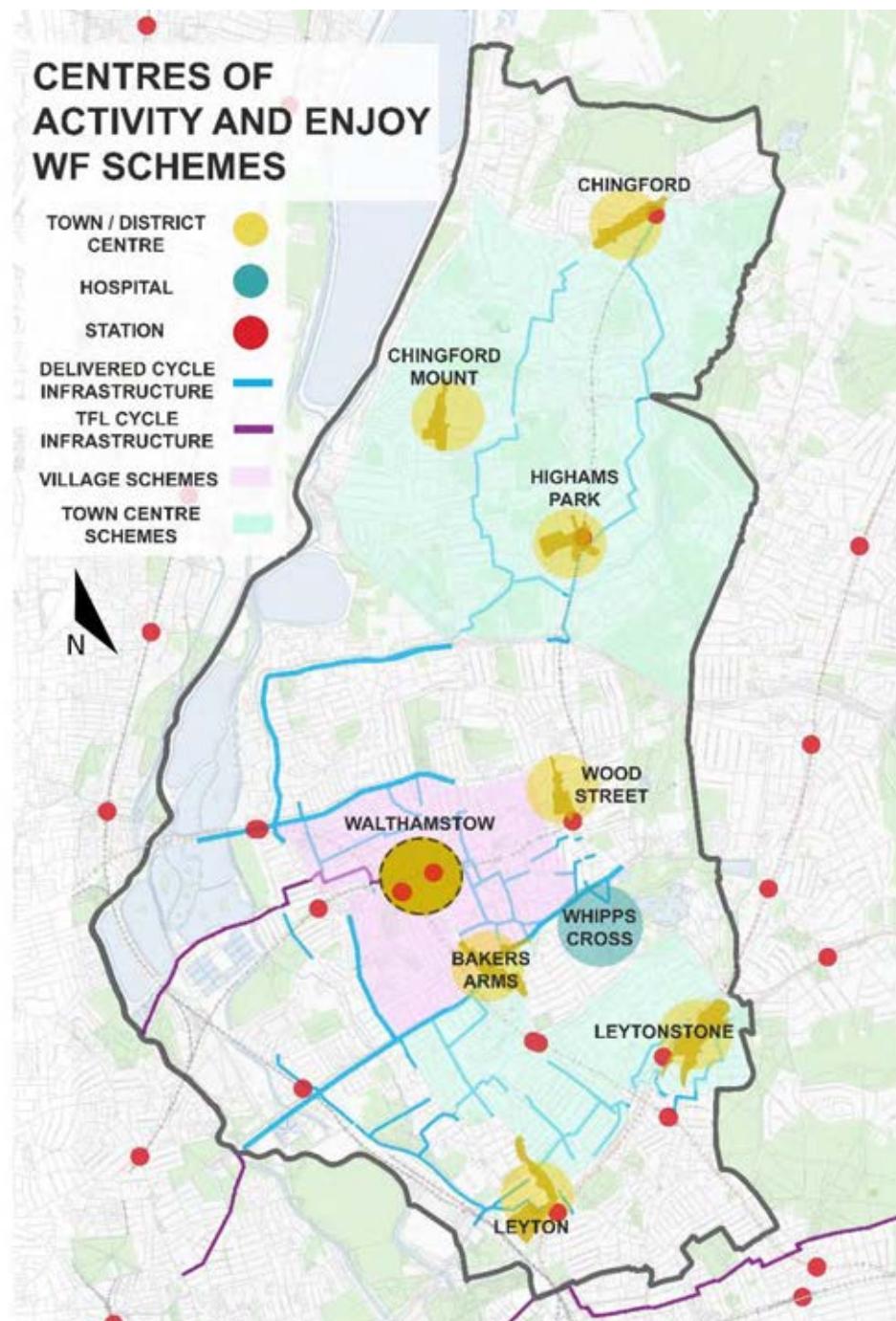


Figure 3 Key destinations and active travel network

3.1.1 Active Travel Network

The Mayor's Transport Strategy (MTS, 2018) highlights the potential for walking and cycling to replace short car-trips in Outer London. Considering Figure 3, which shows key destinations and the existing active travel network, and Figure 4 which shows population density, it is clear the concentration of centres of activity correlates with population density, particularly in the south of the Borough. Higher population densities around centres of activity enable short trips to key services to be made by sustainable modes.

Walkable distances to key services are identified as approximately 800 metres or 10 minutes' walk by the Department for Transport², maximum cycling distances however vary more significantly dependent on user and local conditions. In London, developments that create a significant transport impact must include an Active Travel Zones assessment, considering the quality and accessibility of active travel routes towards key locations within walking or cycling distance of the development.

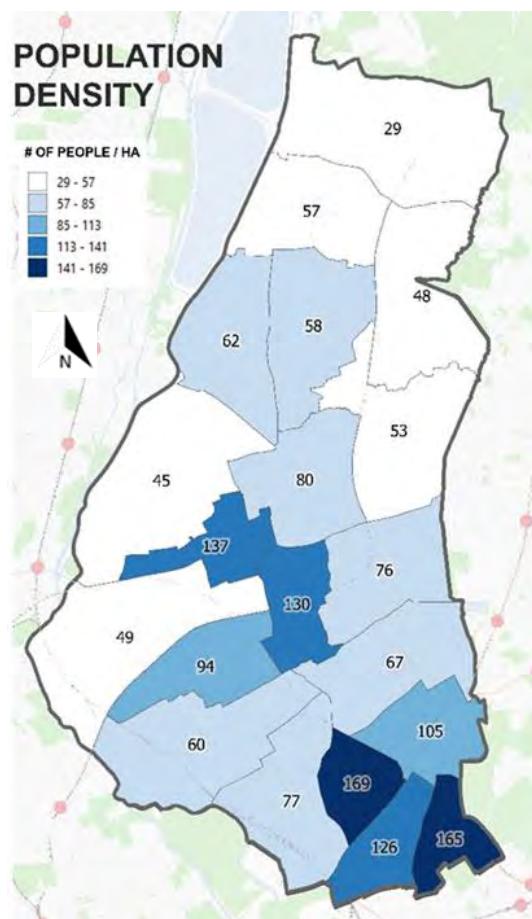


Figure 4 Population density

² DfT (2008) Building Sustainable Transport into New Developments: A Menu of Options for Growth Points and Eco-towns, Department for Transport, London
<http://laqm.defra.gov.uk/documents/sustainabletransnew.pdf>

TfL Analysis of Cycling Potential (2016) used data from 2012/13 – 2014/15 to determine that Waltham Forest had only achieved 3% of its total potential for cyclable trips, evidencing both a challenge and an opportunity for the Borough.

Residential densities in the north of the Borough are generally lower than those in the south reflecting the suburban character north of the A406. In line with this, there are fewer centres of activity which are generally located adjacent to stations. Only two cycle routes are provided through the north of the Borough and only one of these provides a continuous connection south of the A406 towards larger Town and District centres. The existing cycle routes in the north do not provide good links to residential areas and the distances to most of these exceed a reasonable walking distance, which contributes to higher car dependence in the north of the Borough compared to the south. This demonstrates the importance of ensuring a joined-up cycle network linking to local centres and the strategic transport network.

Residents in the north of the Borough could be better connected to the centres of activity and stations in the south of the Borough. However, there are significant north-south permeability issues around the A406, which can only be crossed in six places which can create bottlenecks during busy periods. Additionally, as these connections are made via underpasses or pedestrian footbridges, both of which are not well overlooked, this leads to intimidation and discourages further walking and cycling. In addition cycle hire services are available in the south of the Borough, which enables casual cycling. However, in the north of the Borough, casual cycling is much less attractive as there are no cycle hire services and fewer formal cycle routes.

Connections north from the Borough towards Epping Forest also require significant consideration as concerns have been raised regarding the impacts of increasing leisure cycling on the Special Area of Conservation (SAC).

Demographic and topographic differences also contribute to differing travel patterns in the north and south of the Borough. The north concentrates most of the 65+ population in Waltham Forest as well as many families with young children. There is also a steep topography which makes walking and cycling more challenging to these groups.

In some occasions cycling can also replace longer-distance trips, relieving pressure from overcapacity parts of the transport system. It is expected that when complete, the existing network in conjunction with the extension of the Cycleway is 2 (expected to run between Stratford and Aldgate via Bow, Mile End, Stepney Green and Whitechapel) and the East to West Cycleway (from Paddington to Acton) will connect several key destinations by fully segregated lanes, improving journey times and safety for cyclists. Figure 5 shows destinations which will be accessible from Walthamstow Central via routes with over 90% segregated cycle lanes.

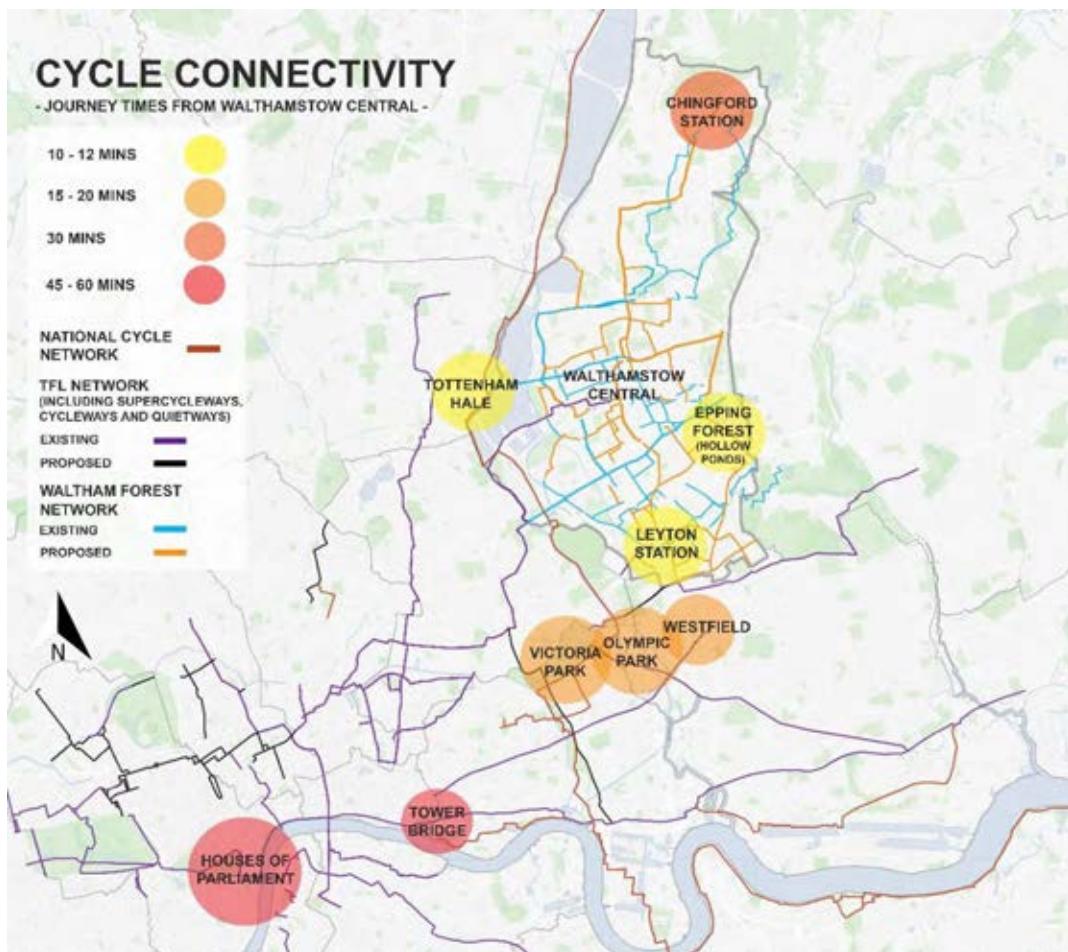


Figure 5 Cycle connectivity from Walthamstow Central

Figure 5, shows that cycling from Walthamstow to Westfield will take between 15-20 minutes through a network of segregated cycle lanes, once the expected works are completed. Future cycling proposals within the Borough should look to complement or feed into this network from other parts of the Borough.

Enjoy Waltham Forest

The ‘Enjoy Waltham Forest’ programme combines a series of transport and public realm improvements, as well as complementary culture change initiatives, to promote active travel and increase liveability within the Borough. These improvements also supported delivery of events as part of the London Borough of culture in 2019.

As part of this, walking and cycling infrastructure has received major investment over the past five years. As shown in Figure 3, the cycle network is denser in the south of the Borough where the majority of the Enjoy Waltham Forest projects have been concentrated. Segregated cycle routes have been delivered along some of the Borough’s main roads towards town centres to provide safety, convenience and high-mobility to cyclists. However, as outlined, cycling infrastructure north of the A406 is much more sparse contributing to increased car dependency.

Within residential areas, the Enjoy Waltham Forest programme has focussed on liveability - improving the overall environmental conditions to make cycling and walking, safer and more enjoyable. This included introducing modal filters, one-way systems, time road closures, improved pedestrian infrastructure, SUDS and other public realm improvements slowing down motorised traffic by reinforcing pedestrian/cyclist priority. So far, these have been implemented in the residential areas between Forest Road and Lea Bridge Road, where some of the Borough's housing growth is planned. These holistic schemes have a multitude of benefits beyond transport including reducing flood risk, enhancing local community and improving overall wellbeing. The potential for further expansion of the Enjoy Waltham Forest programme to support sustainable housing growth will need to be considered.

The 'Town Centres' schemes shown in Figure 3 cover large areas with specific schemes around the Borough's main shopping districts, introducing measures to reduce motorised traffic, improving key crossings and pedestrian routes, and delivering public realm improvements. Connectivity towards these centres was also sought through segregated cycle routes. These Town Centre schemes have been implemented around Leyton, Leytonstone, Chingford and Highams Park.

Major investment in walking and cycling infrastructure in addition to complementary programmes during the past few years have already shown success. **For example**, in one year, the number of residents that said they cycle increased from 12% to 17% by 2016 – that translates into approximately 13,600 more people cycling in one year. Frequency also improved with 73% of those who cycle reporting they do it at least once a week compared to 62% the year before.

Figure 6 shows the roads within the Borough which have experienced the greatest increase in cycling usage over the surveyed period 2017-2019. Along these routes there is some variation in vehicular traffic and increases in cycling by over 200% on Church Road, Forest Road, Blackhorse Road and Boundary Road all of which were part of the Enjoy Waltham Forest programme.

More information and continuous updates on the Enjoy Waltham Forest programme can be found at: <https://www.enjoywalthamforest.co.uk/>

● Cycle ● Other Vehicles

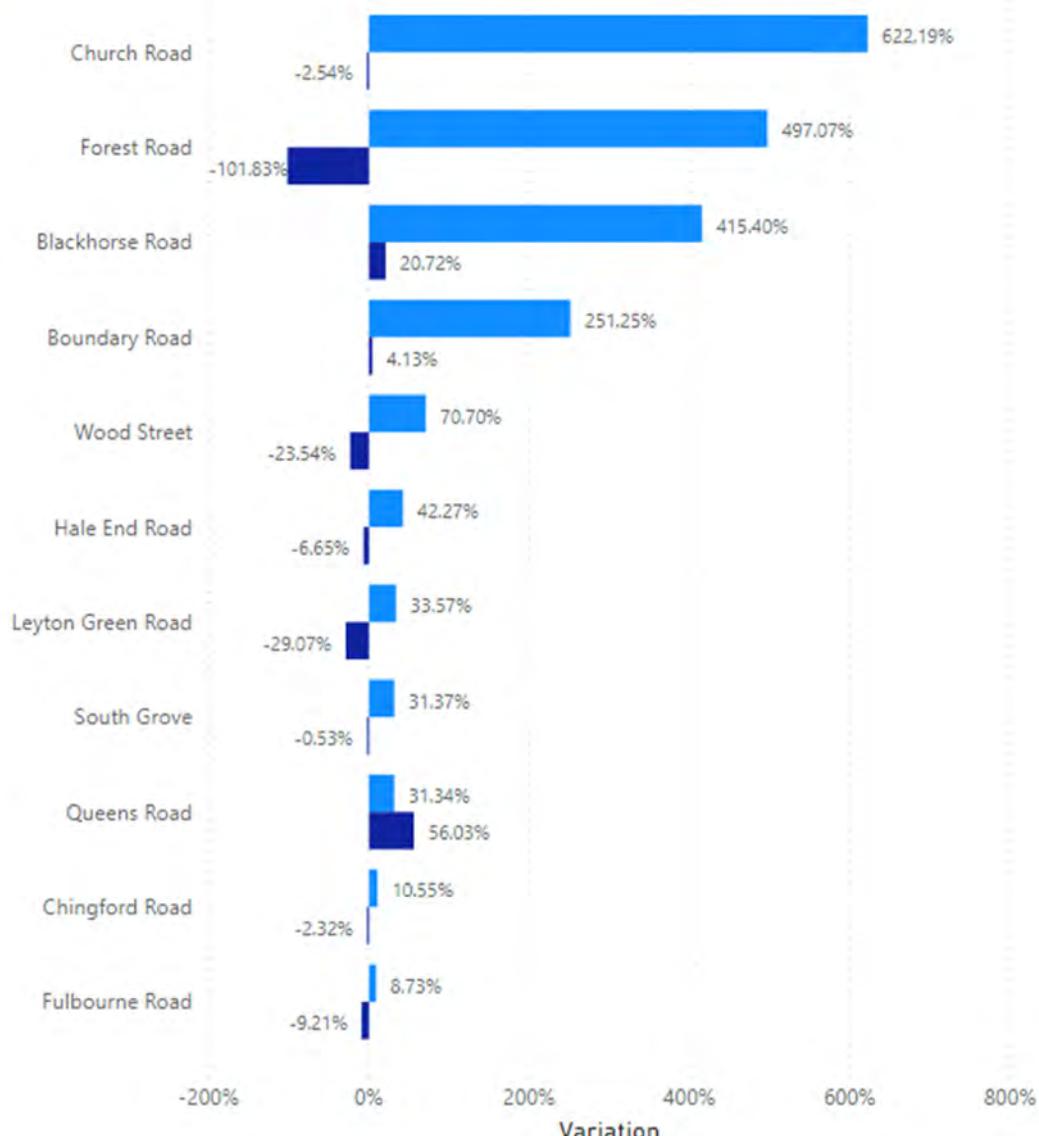


Figure 6 Roads with highest cycling uptake between 2017 – 2019³

³ 190909 Main Road Network Master [Excel Spreadsheet]

Schools and Active Travel

Active travel to school represents a significant opportunity to encourage the development of sustainable and healthy travel habits from an early age and across all groups. Increasing travel to school by active modes presents an opportunity to reduce congestion and air pollution on the Boroughs road network and around stations at peak times.

Figure 7 shows the results of a survey of 57 schools in Waltham Forest which are taking part in the 2018/2019 TFL STARS programme (Sustainable Travel: Active, Responsible, Safe) measuring how pupils and staff travel to schools. This shows, walking is the predominant form of travel to primary/secondary schools and academies, used by more than half of the surveyed population. However, one in five trips to these are still made by car/motorbike, representing an opportunity for modal-shift.

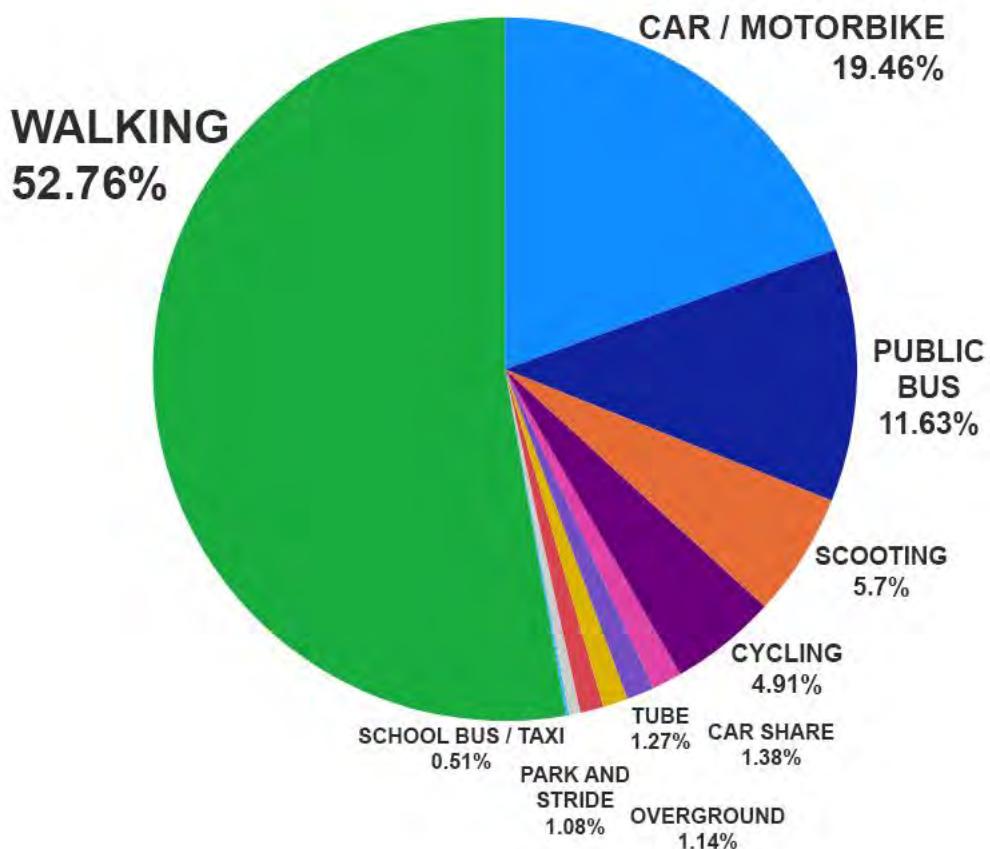


Figure 7 Mode share to STARS Schools 2018/2019⁴

Active travel to schools can also be encouraged by implementing ‘School Streets’, which involves the temporary closure of streets around schools during drop-off and pick-up times to motorised vehicles. This aims to make other modes of travel

⁴ Survey Group Report (2020) *STARS School Surveys* [Excel spreadsheet]

more convenient as well to provide a more pleasant, safe and less polluted environment outside school gates.

Phase 1 of a School Streets programme has been implemented in Waltham Forest through 2 schemes covering four schools in September 2019 with plans to be extended to April 2020 (timetables still to be revised due to Covid-19 restrictions). With a 12% reduction in pupils arriving to school by car in one of the trial schools. Consultation is currently being undertaken for further implementation within the Borough.

3.1.2 Bus

Bus services play an important role in communities where there isn't access to Underground/Overground stations, and where journey lengths mean active travel is not feasible to reach local services or transport hubs. Currently there are 34 bus routes and five night routes operating in Waltham Forest. Figure 8 shows that the number of kilometres operated by bus in Waltham Forest was increasing until 2018, after which there was a slight drop for the period 2018/2019. Correlating with the reduction in km operated, there was a reduction in trips during the same period. This suggests that greater services and km operated may attract a subsequent increase in bus trips, which could be drawn from more constrained or polluting modes of transport.

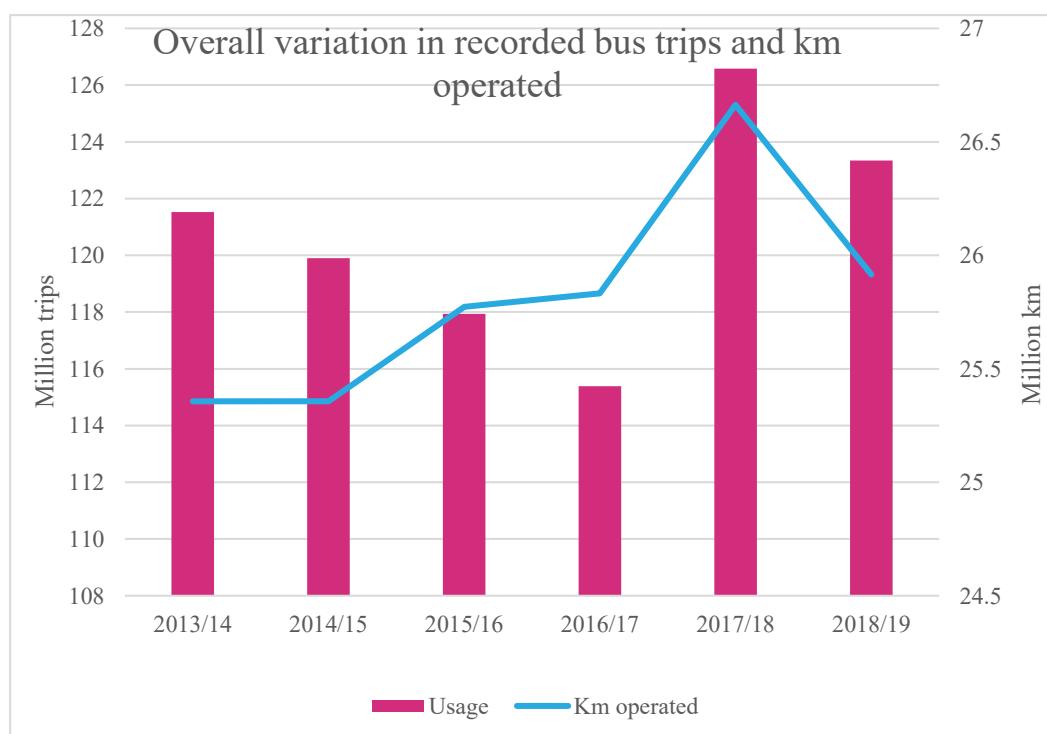


Figure 8 Variation in recorded bus usage and km operated⁵

⁵ Waltham Forest Bus Usage Data 120919 [Excel spreadsheet]

Table 1 shows services with the highest increase and the three with the highest decrease in trips for the period 2013-2019. In all cases, the increase or decrease in trips was accompanied by a similar increase or decrease in kilometres recorded by the service. As shown, the rate of usage increase over the five-year period is greater than the rates of decrease. Overall, there is a rising demand for most of the bus services in the Borough.

	Route		Change in trips	Change in km recorded
	308	Wanstead - Lower Clapton	28%	24%
	339	Leytonstone - Shadwell	28%	23%
	W19	Walthamstow - Ilford	27%	29%
	W12	Wanstead - Walthamstow	-12%	-7%
	W15	Higham Hill - Hackney	-13%	-7%
	48	London Bridge - Walthamstow	-15%	-4%

Table 1 Bus services with the greatest increase/decrease in trips between 2013-2019

Alongside managing an increasing demand for bus services, managing the efficiency of the system must be a priority to ensure that bus services are competitive compared to private car travel. Figure 9 shows that average bus speeds in Waltham Forest have decreased between 2013-2019. This is likely to be caused by a number of factors including:

- Increased boarding times associated with increase in usage;
- Newly introduced speed limits on some roads; and
- Improved pedestrian/cycle priority.

But also, it may indicate rising levels of congestion. Given these challenges it is key to ensure that, where possible, buses are prioritised over other forms of motorised traffic in order to avoid an increase in journey times for users.

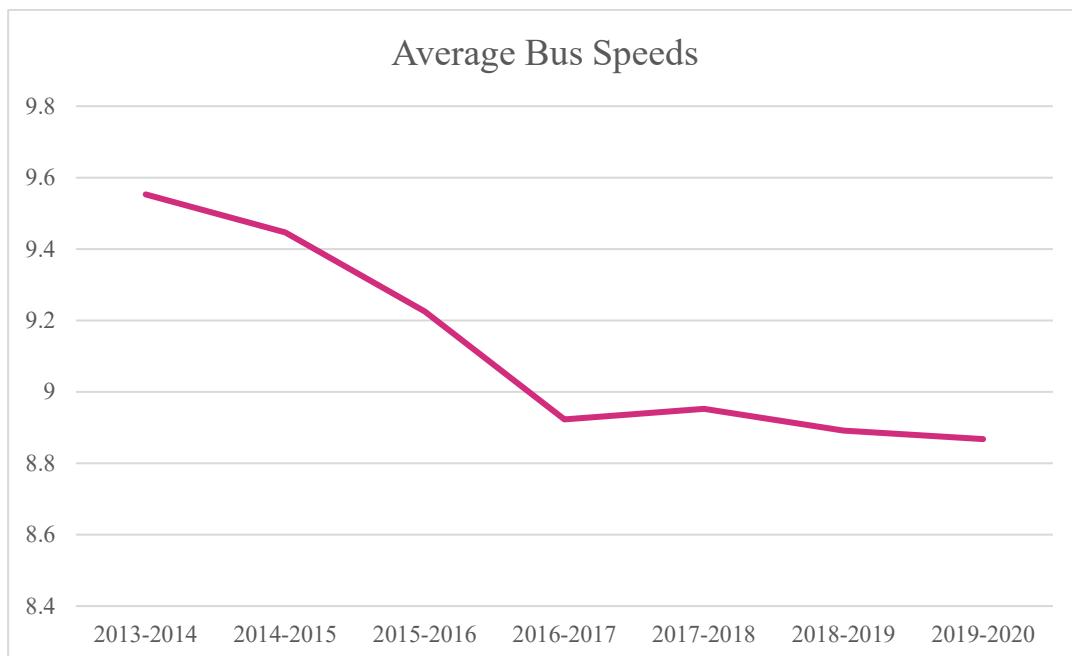


Figure 9 Average bus speeds in Waltham Forest (2013/2014 – 2019/2020)⁶

Figure 10 shows bus speeds across the Borough in 2016/2017 based on the LIP (2019). Lower speeds are concentrated through the centre and south of the Borough and at junctions. The generally low speeds indicate that bus priority measures at junctions could have a significant impact in improving bus speeds and therefore journey times to make bus a more appealing option for travel within and outside of the Borough.

⁶ TfL (2019) *Buses performance data*. Borough All (to P12 2019-2020) [Excel Spreadsheet]. Available from: <https://tfl.gov.uk/corporate/publications-and-reports/buses-performance-data>

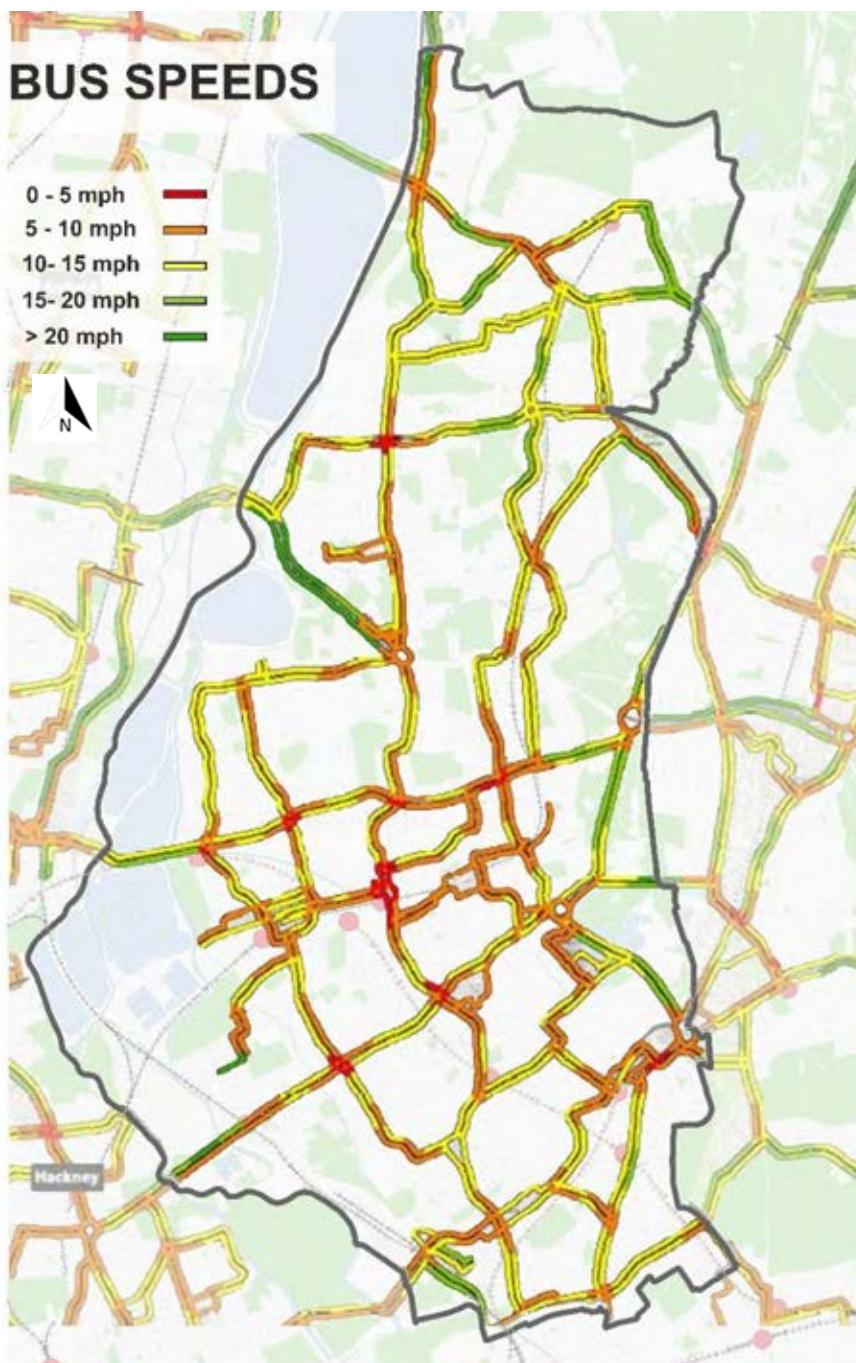


Figure 10 Monday - Friday am bus speeds (2016/2017)

3.1.3 Underground and Overground

The majority of the Underground and Overground stations in Waltham Forest are concentrated in the south of the Borough. The busiest stations being Walthamstow Central (generating 27,000 trips per regular weekday), Leyton (20,730), Leytonstone (17,320), and Blackhorse Road (16,040).

All of which have had an increase in entries and exits between 2013-2016, with Walthamstow Central and Blackhorse Road, which provide access to the Victoria Line, experiencing an average 39% increase in entries and exits between 2013 and 2016. The increase for Central Line stations (Leyton and Leytonstone) has been 11% over the same period.

It is expected that demand will continue to increase due to the population growth planned for the areas around these stations. Overcrowding at stations and along the Victoria and Central Lines is already a significant issue during weekdays at peak hours. On weekdays, approximately 40% of all trips departing from Waltham Forest are to Central London during the morning peak, with the same proportion returning during the evening peak, showing a clear commuting pattern.

The main stations to which people travel on weekdays are Liverpool Street, Oxford Circus and Kings Cross St. Pancras. On the weekends, travel patterns are more distributed and other locations such as Stratford and Seven Sisters gain more popularity. The primary destinations from Underground/Overground stations in Waltham Forest for a combination of weekdays and weekends are shown in Figure 11.

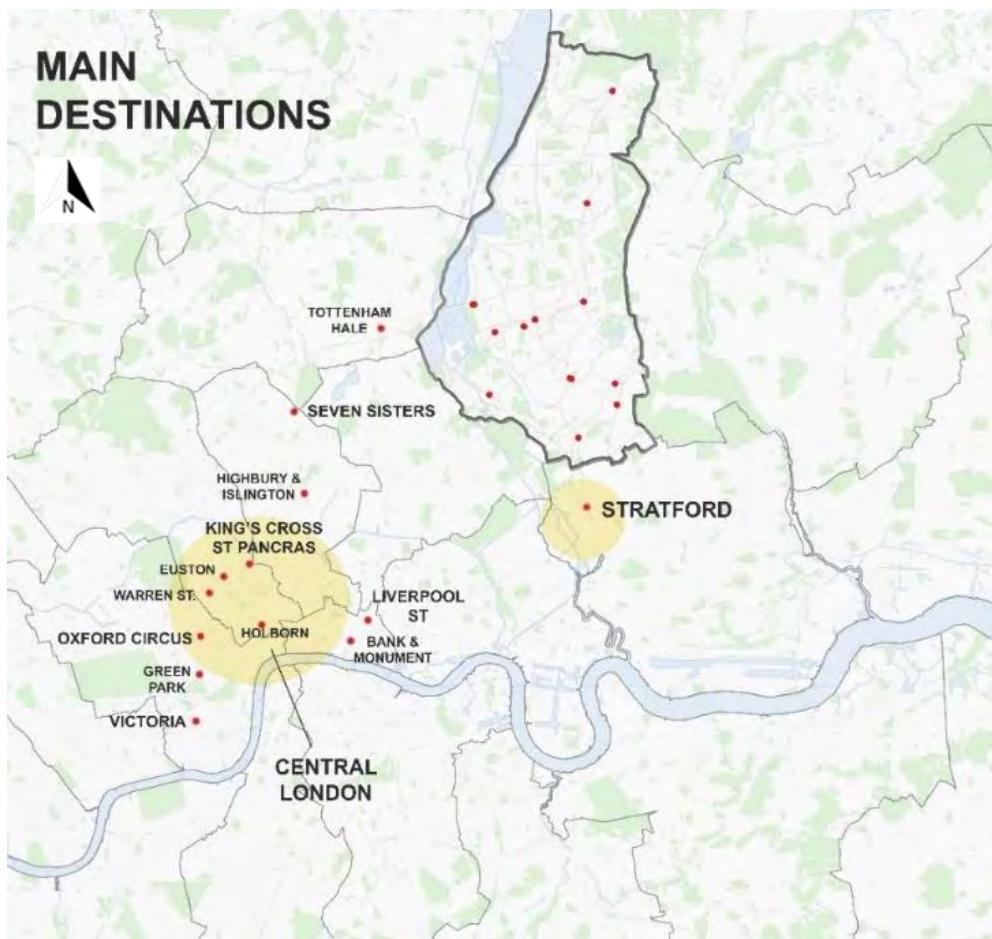


Figure 11 Main Underground and Overground destinations (Made using TfL Crowding Data)⁷

There are planned improvements to the Central Line, which expect to deliver a 25% increase in capacity. Additionally, the delivery of the Elizabeth Line will also help mitigate some of the demand towards Central London, by providing a new link between Stratford, Liverpool Street and other Central London stations. There is still some uncertainty around the exact delivery dates for these improvements. The stations within Waltham Forest will need to be able to cope with the expected capacity increases associated with these improvements as well as the expected increase in transport demand associated with population growth and the development of economic activity hubs around town centres. Plans for station improvements identified by Waltham Forest are considered in Section 4.

Efficiency of travel can also be improved by adding step-free access. TfL estimates that on average, journeys take 15-minutes longer if using the step-free public network in Waltham Forest. Currently only four of the stations in Waltham Forest have step free access. Given the high proportion of younger people and increasing proportion of over 65's living in the Borough, making stations accessible should be a priority for the Borough.

⁷ TfL (2018) *Crowding Data*. 2018FRI_Link_Load [Excel spreadsheet] Available at: <http://crowding.data.tfl.gov.uk/>

TfL (2018) *Crowding Data*. 2018SAT_Link_Load [Excel spreadsheet] Available at: <http://crowding.data.tfl.gov.uk/>

3.1.4 Highways

Waltham Forest contains a number of strategic roads which provide vehicular access across the Borough. The two key strategic routes are the A406 (North Circular) which runs through Waltham Forest in an east-west direction and acts as an inner ring road, and the A12 which bisects the south east corner of the Borough providing a link to Stratford and Canary Wharf in the south and towards outer London heading east.

Both roads are designated red routes in the Transport for London Road Network (TLRN) and as such carry the greatest volumes of traffic, as shown in Figure 12. Both routes create severance due to a lack of permeability (grade separated roads). Of particular concern is the North Circular which contributes to a north-south divide in the Borough.

Another key route through the Borough is the A104 (Lea Bridge Road), providing north-south connectivity from Whips Cross south towards Central London, or north through Epping Forest towards the M25 and M11.

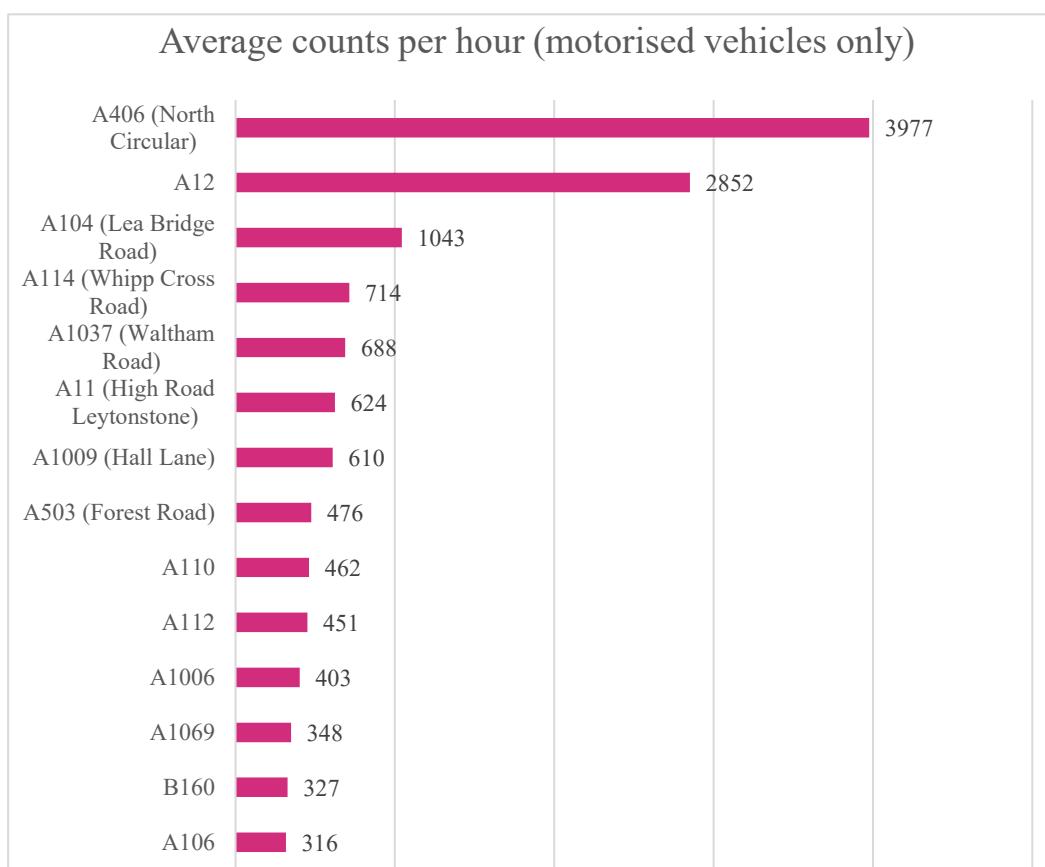


Figure 12 Average traffic flows per hour (DfT Raw Counts 2015-2018)⁸

Commuting patterns by mode vary significantly between the north and south of the Borough, with up to 40% of commuting journeys from locations in the north

⁸ Department for Transport (2018) Raw Count Data – Major and Minor Roads. Available from: <https://roadtraffic.dft.gov.uk/downloads>

of the Borough being made by car and the same figure being less than 10% in parts of the south (Census, 2011).

Commuting patterns by car to and from two Mid Layer Super Output Areas (MSOA) in Waltham Forest, have been identified in Figure 13 based on 2011 Census data. These represent patterns to and from Walthamstow (MSOA Waltham Forest 016) in the south of the Borough and Chingford (MSOA Waltham Forest 002) in the north of the Borough. Although these cannot be used to extrapolate information of Borough wide patterns, they do indicate a difference in driven commuting patterns between the north and south of the Borough. Specifically showing a significantly greater level of residents commuting by car from Chingford, when compared to the number of vehicular trips from Walthamstow.

Figure 13 shows that commuting from the north to the south of the Borough represent a large proportion of driven trips into Walthamstow for work, which have potential to be converted to more sustainable modes of transport.

A number of key links north of the Borough pass through Epping Forest District, who have undertaken transport modelling utilising the VISUM (v14) Highway Assessment Model to assess the Epping Forest District Council (2019)⁹ Local Plan Submission Version (LPSV). This was undertaken to provide an indication of how the network is currently performing and how well it will be able to support growth in Epping Forest District.

This work identifies that a number of key routes are currently operating severely over capacity, specifically Wake Arms roundabout within the Epping Forest SAC which provides a link from Waltham Forest to the M25 J26. This junction is also identified as exceeding capacity in the baseline modelling. Links identified as experiencing high levels of congestion, queuing and delay particularly relevant to Waltham Forest are the A121/104 link in Epping Forest SAC. All of these junctions and links are anticipated to deteriorate further if planned growth occurs without appropriate mitigation and if there is no adequate provision of sustainable transport alternatives.

The analysis identified that with planned housing growth in the Epping Forest Local Plan there would be a material impact across the network and key junctions would require mitigation in future if plans go ahead. These results and future plans for mitigation will need to be considered when planning further housing growth in Waltham Forest, particularly in the north where there is a greater proportion of commuting northbound by car as shown in Figure 13.

⁹ Epping Forest District Council (2019) *Transport Assessment Report*.

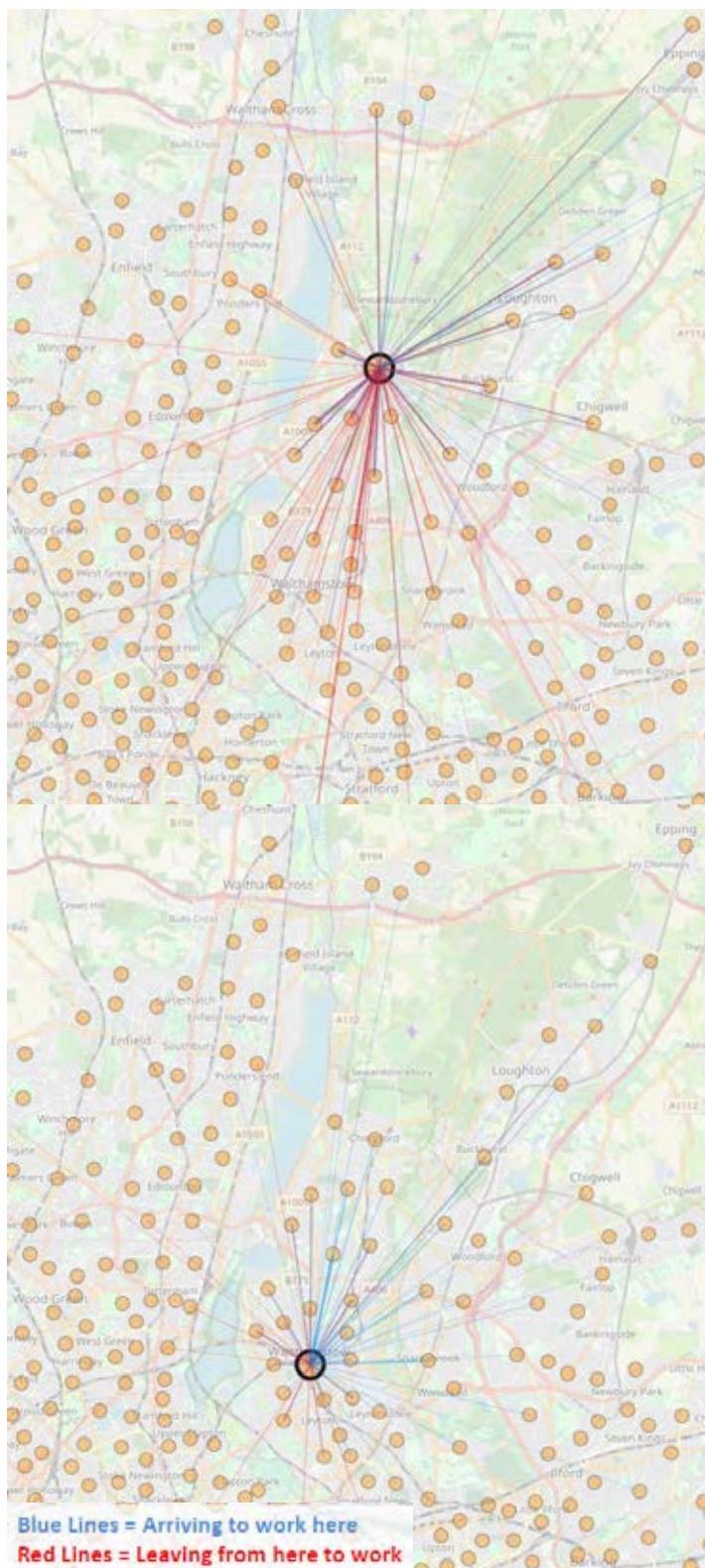


Figure 13 Car trips to/from work from Walthamstow (MSOA Waltham Forest 016) and Chingford (MSOA Waltham Forest 002) Census, 2011¹⁰

¹⁰ Oliver O'Brien & James Cheshire (2016) Interactive mapping for large, open demographic data sets using familiar geographical features, Journal of Maps, 12:4, 676-683, DOI: 10.1080/17445647.2015.1060183

3.1.5 Collisions, deaths and serious injuries

The road collisions reported within Waltham Forest between 2017-2018 are included in Figure 14. The collisions are generally concentrated along the key routes through the Borough which were identified as having heavy traffic flows and at junctions where these routes converge. Specifically, there is a concentration of collisions along A104 (Lea Bridge Road) which has recently undergone significant works to install a segregated cycleway. Further monitoring will be required to establish if these works have had an impact on the rate of collisions.

Further locations with a significant concentration of collisions are along the A112, which provides an important north-south link for both motorists and cyclists. Specifically, improvements should be investigated at the junctions with the North Circular, Forest Road and Lea Bridge Road.

The high rate of collisions along key routes for vehicles and cyclists is a key challenge in encouraging mode shift. Measures to address this have already been taken through the designation of 20mph speed limits across some streets in the Borough and the delivery of infrastructure that prioritises cyclists and pedestrians. Further hard and soft measures will be key to increase cycling uptake especially within groups such as children, the elderly and less experienced cyclists, who cite safety concerns related to cycling¹¹ and to make walking safer and more enjoyable, improving the experience people have when accessing public transport.

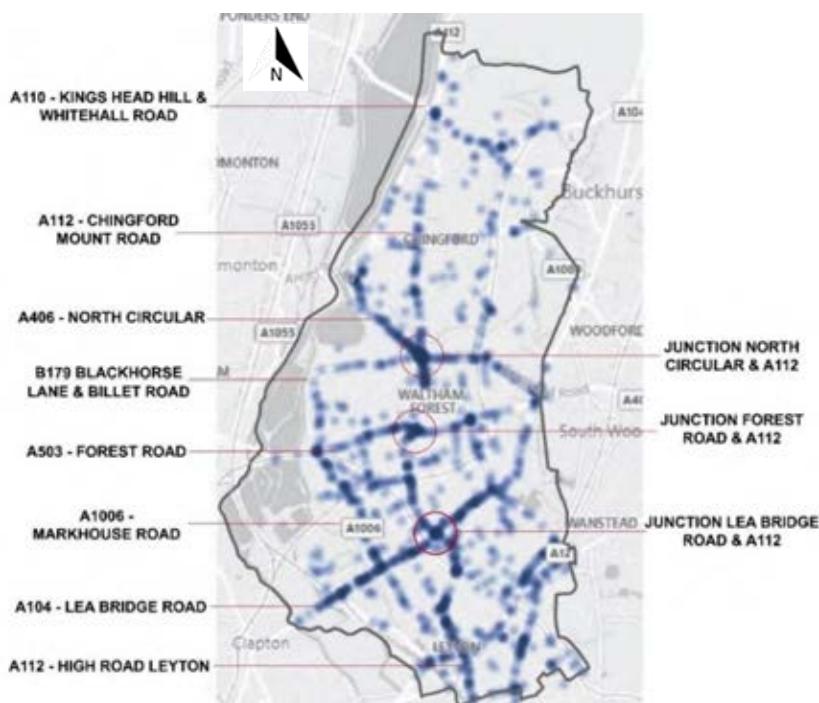


Figure 14 All registered road accidents between 2017-2018¹²

¹¹ Arup and Sustrans, 2019. Inclusive Cycling In Cities And Towns. [online] London: Arup and Sustrans, pp.1-17. Available at: <<https://www.sustrans.org.uk/media/1029/1029.pdf>> [Accessed 21 May 2020].

¹² Waltham Forest (2018) *Road Safety – Accidents* (Excel spreadsheet)

3.1.6 Parking

The existing Controlled Parking Zones (CPZ's) are included below in Figure 15 and the full map is included in Appendix B. Currently a significant majority of the CPZ's are south of the A406, with only a few north of the A406.

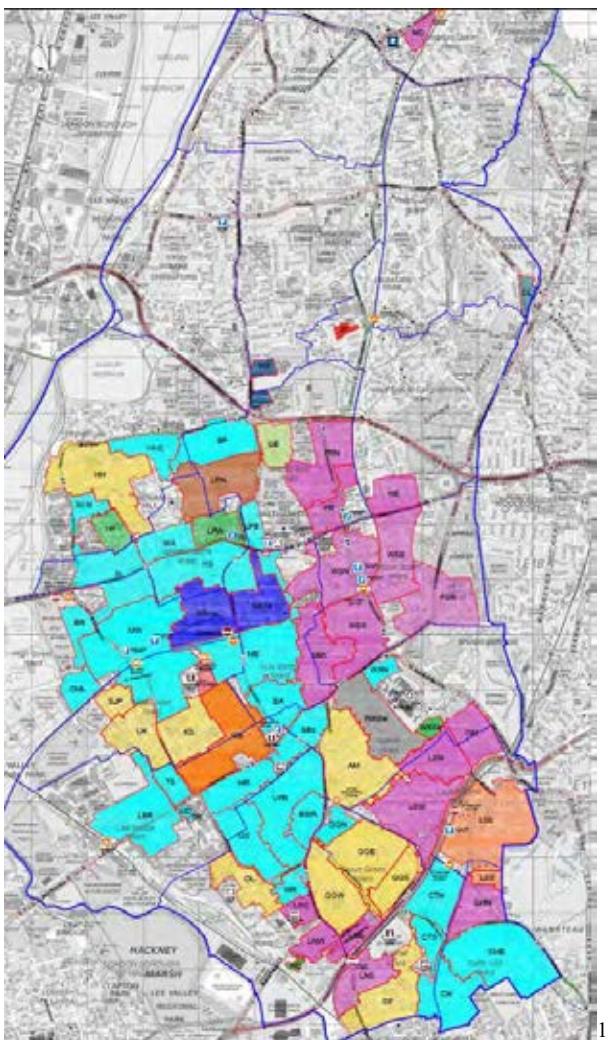


Figure 15 Controlled Parking Zones (CPZ) in Waltham Forest

The difference in CPZ's reflects the difference in households who have access to a car across the Borough, which is shown in Figure 16. This shows lower levels of access to a car in the south of the Borough, with 50%-75% of respondents not having access to a car compared to 0%-37.5% of respondents not having access to a car or van in the north of the Borough.

Greater proportions of the population with access to a car in the north of the Borough reflects the suburban character when compared to the south. Higher levels of car ownership are exacerbated by commuter parking in the north of the Borough which is identified as a concern in the Highams Park Parking perception

¹³ Map provided by Waltham Forest

survey and Local Plan Consultation responses (further detail included in Section 3.5).

Overall, the greater levels of car ownership and car dependency in the north represents a challenge in achieving modal shift in line with MTS targets, and a significant need to manage parking demand. There is a significant opportunity to reconsider parking policy to favour sustainable transport in light of the planned ULEZ (Ultra Low Emission Zone) extension.

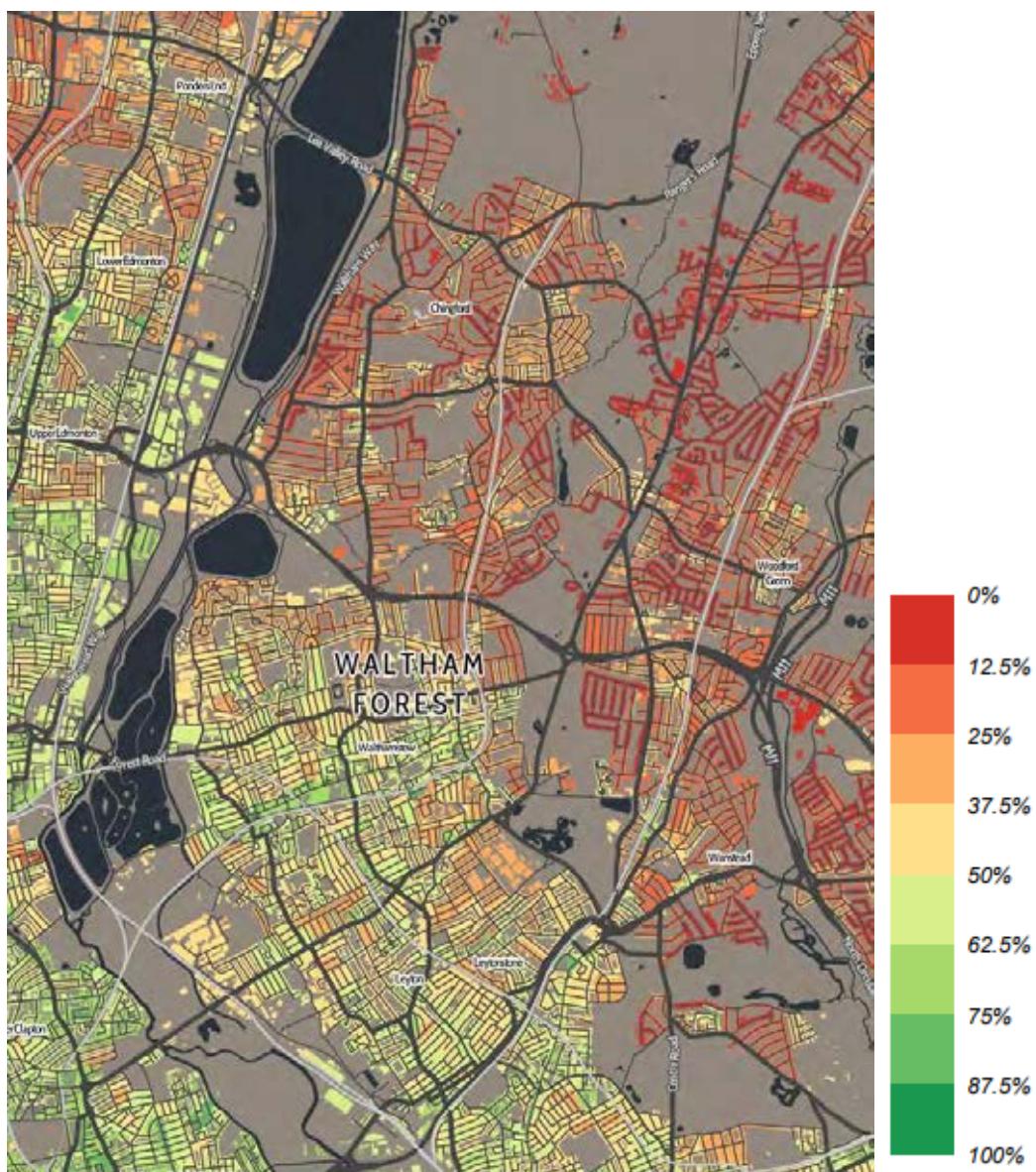


Figure 16 Percentage of all households at MSOA level without access to a car or van
Census, 2011¹⁴

¹⁴ Oliver O'Brien & James Cheshire (2016) Interactive mapping for large, open demographic data sets using familiar geographical features, Journal of Maps

3.1.7 Servicing

Light Goods Vehicles (LGV's) and Heavy Goods Vehicles (HGV's) are key to moving goods around the city, and they also account for a significant amount of road traffic. The LIP (2019) identifies that between 2013 and 2016 there was an increase of 23% in LGV's and HGVs on the Borough's road network based on DfT counts at 47 locations. Overall these vehicles make up 20% of traffic on these roads. This can be associated with a rise in online shopping and construction works, which are likely to put additional strain on an already congested road network as well as having an impact on air and noise pollution.

Currently the primary industrial sites, which are likely to be associated with high LGV and HGV movements, are concentrated south of the A406 at the Argall Industrial Estate, the Forest Trading Estate and north of the A406 adjacent to the Borough's western boundary. Commercial activity in these areas are likely to be further intensified as they are identified as Strategic Industrial Locations (SILs) in the Draft Local Plan, the location of these is shown in Figure 3.

The area south of the A406 is due to become part of the expanded ULEZ area in 2021 in order to improve air quality. Industries and businesses operating in this area will need to be supported in preparations for the ULEZ regulations ahead of implementation to maximise the benefits without effecting operation. Similarly, attention must be given to the housing and employment growth areas concentrated south of the A406, as these will also be part of the expanded ULEZ and will likely generate a significant number of construction related vehicle trips including delivery of supplies, servicing and construction staff.

Waltham Forest has already started tackling the increasing demand for deliveries in a sustainable way, by implementing a Zero Emission Delivery (ZED) programme. In March 2016, Waltham Forest secured £400,000 from the Mayor's Air Quality Fund for the launch and operation of the ZED scheme, which is a last mile cargo bike delivery service between local businesses and their customers. To date 53 businesses have participated in the scheme, achieving a total of 52,241 deliveries and saving over 5,000kg CO_{2e} emissions as shown in Figure 17.

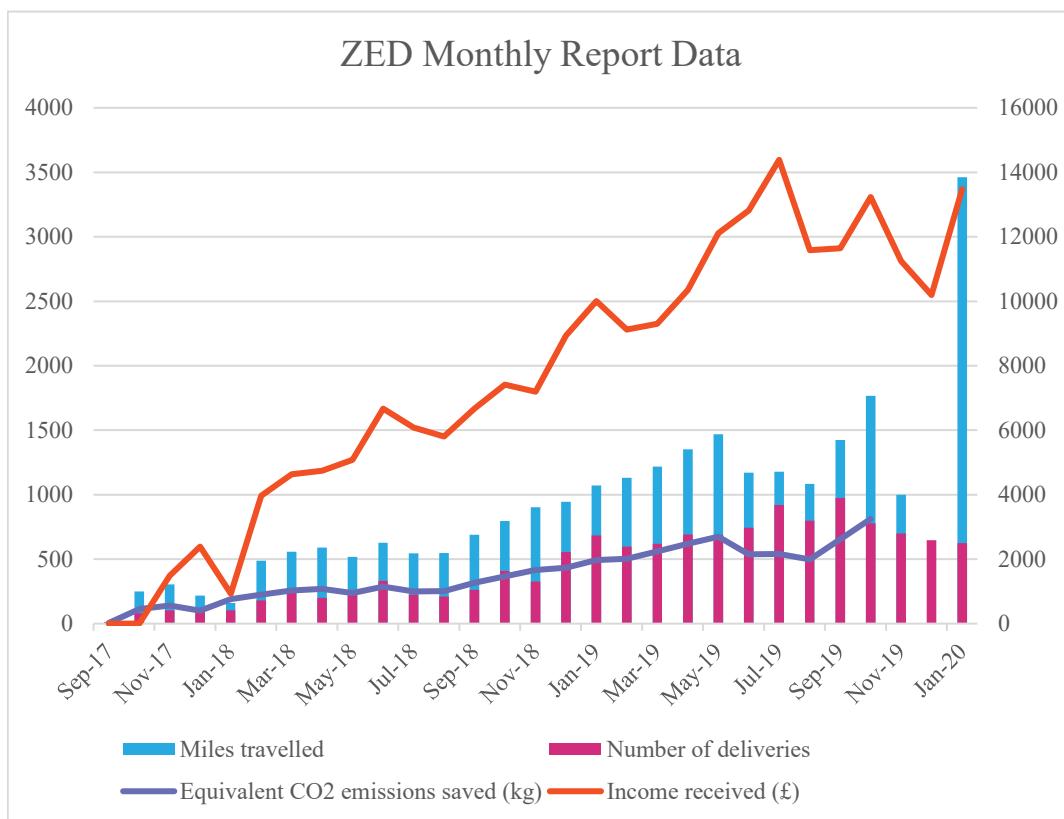


Figure 17 ZED monthly report data

3.2 New developments

Ultra-Low Emission Zone (ULEZ) expansion (2021)

The Mayor of London launched the ULEZ in central London in 2019 to reduce air pollution in order to improve the health of Londoners. The ULEZ imposes emissions standards on all vehicles entering the zone and requires payment to enter for those that don't. The ULEZ is expected to be extended by October 2021, to include the area south of the North Circular.

There are likely to be numerous positive impacts from the ULEZ in Waltham Forest including improved air quality, potential reduction in congestion and road traffic collisions. However, to maximise the benefit and minimise possible disruption which has been raised as a concern through stakeholder Workshop detailed in Section 3.5. Concerns relate to commuters aiming to park outside the ULEZ in the north of the Borough and then taking public transport to their final destinations, if this does occur there could be significant pressure on parking in the north and a further strain on the public transport system. This would exacerbate the existing differences in travel patterns between the north and the south of the Borough.

Crossrail Elizabeth Line (2021)

As mentioned in Section 3.1.3, the planned improvements to the Central Line and the expected delivery of the Crossrail Elizabeth Line will help mitigate some of the demand towards Central London. The latest update on the project indicates that the central section of the Line is expected to come into operation between Paddington and Abbey Wood by summer 2021. This would help relieve pressure from the tube network by providing an alternative route linking Stratford, Liverpool Street and other Central London stations.

To maximise these benefits, it will be key to ensure that there are good connections towards the stations that are on the Elizabeth Line outside of the Borough. Connections towards these stations including by active travel, by bus, and by means of Underground/Overground services. Attention should be given to ensuring smooth and accessible interchanges, the provision of good public realm and retail services along key routes for pass-by trips. This could not only make trips more attractive but also reduce the need to do further trips by placing activity centres along commuting routes.

Meridian Water (2019)

Meridian Water is a regeneration project taking place in Enfield, expected to provide a significant number of houses, employment opportunities, retail and cultural spaces, community facilities, health facilities, schools, and public spaces. As such, it is expected to become an important destination in close proximity to Waltham Forest.

A new Meridian Water Railway Station has been delivered already, which provides an opportunity to relieve congestion in some Waltham Forest stations, as it provides services to Stratford every half an hour (calling at Northumberland Park, Tottenham Hale and Lea Bridge), a once a day service in each direction to Liverpool Street Station and trains to Hertford East and Bishops Stortford during peak hours. The Station also provides step-free access.

From the latter, users can connect to other destinations such as Cambridge and Stanstead Airport. Upgrades to the station are on their way including a new track to enable two more trains per hour to run between Stratford and Meridian Water from September 2020.

Improving connectivity to Enfield will be key to catalyse the benefits from these developments. Currently, there are constraints in terms of active travel connections which are partly due to natural barriers (e.g. the River Lea, Metropolitan Open Land in the Lee Valley, Walthamstow Wetlands and reservoirs, alongside a lack of wayfinding and safe and convenient cycle routes.

Crossrail 2

Crossrail 2 is still in the early planning stages, however, if delivered, the project is expected to improve connectivity between out-of-London areas, Meridian Water and Central London locations. The specifics of the route are still under discussion, but in general terms, it will connect Surrey with Hertfordshire, delivering a number of step-free access stations along the route.

3.3 Population and growth

According to the population estimations of the Office of National Statistics (2018), the population of Waltham Forest reached 276,700 residents in 2018. Significant population growth is expected as the latest version of the New London Plan (2019) set out a target of 12,640 new homes to be delivered in Waltham Forest within the next 10 years. This growth is primarily planned to occur in the Upper Lea Valley and Lower Lea Valley Opportunity Areas set out in the respective Planning Frameworks, and the Strategic Growth Areas identified in the Draft Local Plan.

Figure 18, shows these proposed locations of growth in addition to the existing population densities across the Borough. This shows that the centre and south east of the Borough are much more densely populated than the north of the Borough and most of the growth within Waltham Forest will be concentrated towards the south and south west. These proposals are likely to intensify the difference in density between the north and south of the Borough, which can be linked to differences in travel patterns as greater population densities make a greater range of services viable locally, enhancing opportunities for car-free lifestyles.

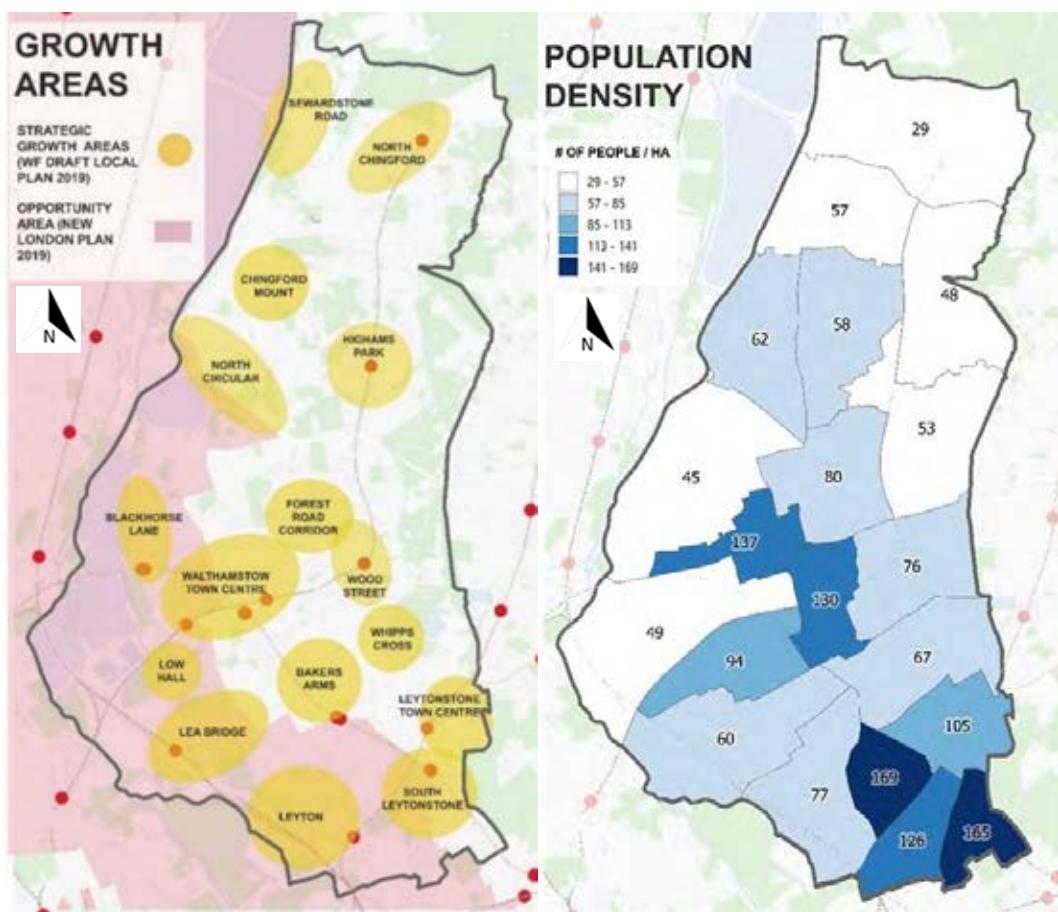


Figure 18: Existing population density and population growth areas

The Borough population is roughly evenly split between males and females with approximately 50.3% of the population being male compared with 49.7% female based on GLA (2017) estimates for 2020.

The Greater London Authority (GLA) Population Projections (2017) outline that Waltham Forest currently (2020) has a younger average population than other London Boroughs, with 22% of residents between ages 0-15 years old. Having a younger than average population provides an opportunity to develop active travel habits at a young age through interventions targeting schools, which are then more likely to be maintained into adulthood. The GLA (2017) also outlines anticipated growth in the Borough's population aged 65+, growing to 13.1% of the population in 2033, compared to 10.6% in 2020.

The existing spatial distribution of 0-15 year olds and 65+ is shown in Figure 19. This shows that there is a significant difference in age profile between the north and south of the Borough, with a greater proportion of young people living in the south of Waltham Forest and the converse true in the north.

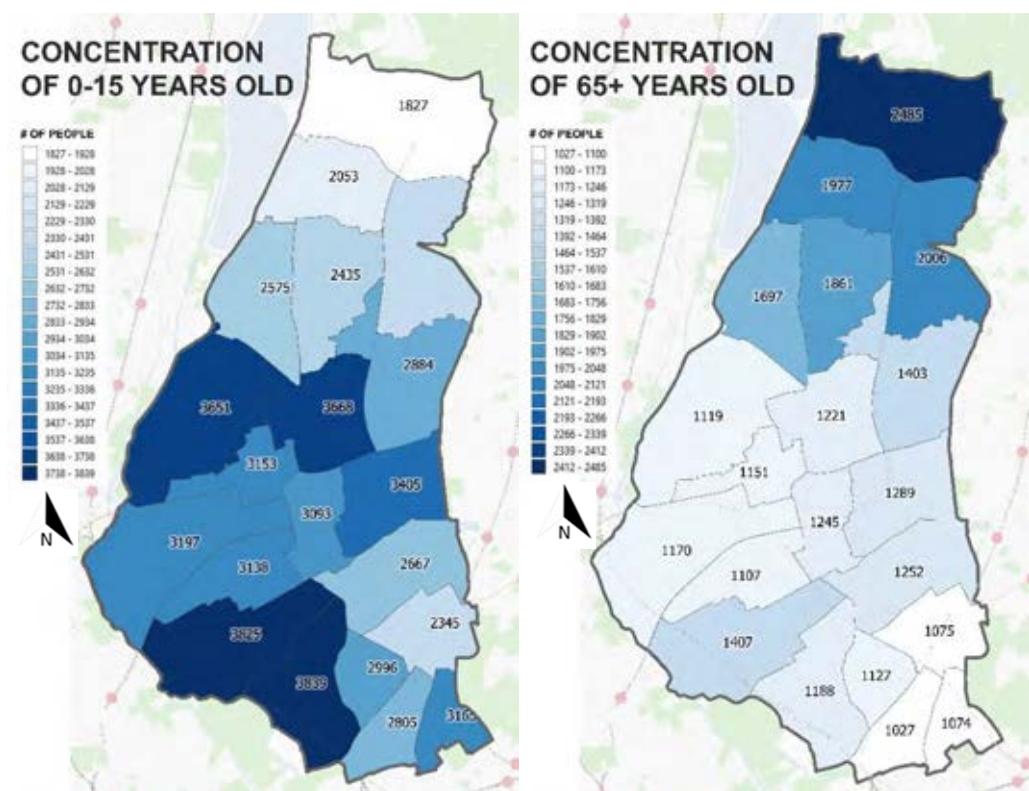


Figure 19 Age Distribution (Office of National Statistics, 2015)¹⁵

TfL research on Understanding Diverse Communities (2019) provides an insight into travel patterns for different age groups, specifically the report identified that older and younger age-groups tend to travel less frequently than the rest of Londoners and mostly by walking and the bus. The report finds that 87% of Londoners aged 65+ walk at least once a week. The figure is 97% for Londoners aged 5-10 and 98% for Londoners aged 10-15.

In general, older Londoners tend to travel less by all means of transport apart from bus and car where they have higher use rates compared to other age groups. This

¹⁵ ONS.gov.uk. 2016. Population Estimates by Output Areas, Electoral, Health and Other Geographies, England And Wales Statistical Bulletins - Office for National Statistics. Available at: <http://ons.gov.uk/ons/rel/sape/small-area-population-estimates/index>.

may be because likelihood of having a disability increases with age (e.g. around 80% of Londoners aged over 85 are disabled). Common barriers to transport cited by both groups are incidents related to antisocial behaviour and overcrowded services.

Given the existing and expected demographic composition of Waltham Forest, considering the needs of both younger and older residents of the Borough will be essential to ensuring transport interventions are inclusive to their different needs and preferences. One specific consideration relevant to younger and older residents is providing for step free access at stations, bus stops and on pavements to ensure sustainable travel is accessible to all. Attention to the spatial distribution of these groups within the Borough should also be thought when planning future transport interventions.

3.4 Health and physical activity

The Mayor's Healthy Streets for London report (2017) outlines the importance of increasing levels of physical activity of Londoners to tackle major health challenges. This is particularly relevant to Waltham Forest as a greater proportion of adults in the Borough (26.6%) are physically inactive compared to the London average (22%).

Clear links have been drawn between physical activity and health and wellbeing outcomes and subsequent treatment costs. For example, the Department of Health (2011) estimated that if every Londoner walked or cycled for 20 minutes each day, it would save the NHS £1.7 bn in treatment costs over 25 years. The Harvard Medical School (2019) found that participating in daily physical activity can reduce the risk of depression and dementia by 20-30%.

The current health and well-being challenges Waltham Forest faces which could be addressed by increasing physical activity are summarised below:

- Mental health: high prevalence of mental health disorders, affecting 22.5% of the population aged 16+, compared to a 16.9% average for England (data accounting to 2017). 6.8% of people over 18 have recorded prevalence of depression in the Borough (2017/2018)¹⁶;
- Cardiovascular disease: most common cause of death in Waltham Forest (24% of premature deaths);
- Hypertension: 11% of the patients in the NHS Waltham Forest Clinical Commissioning Group has recorded hypertension, similar to the London average (data accounting to 2018/2019)¹⁷;

¹⁶ Public Health England. *Mental Health and Wellbeing JSNA*. Available at: https://fingertips.phe.org.uk/profile-group/mental-health/profile/mh_jsna/data#page/0/gid/1938132922/pat/46/par/E39000018/ati/154/are/E38000192/cid/4/page-options/ovw-do-0

¹⁷ Public Health England. *Cardiovascular disease*. Available at: https://fingertips.phe.org.uk/profile-group/cardiovascular-disease-diabetes-kidney-disease/profile/cardiovascular/data#page/0/gid/1938133106/pat/46/par/E39000018/ati/154/are/E38000192/iid/219/age/1/sex/4/cid/4/page-options/car-do-0_ovw-do-0

- Obesity: 10.5% of children in Reception and 23.4% of children in Year 6 are overweight, higher than the 10.2% and 23.2% London averages (data from 2018/2019)¹⁸. For adults, the Borough performs better than London, still, 52.9% of residents 18+ are classified as overweight/obese (2018/2019)¹⁹; and
- Diabetes: high prevalence of diabetes (diagnosed and undiagnosed) accounting for 10.1% of the population, compared to an 8.5% average for England (2017)²⁰.

Based on the health implications of physical inactivity outlined above, opportunities for active travel should be prioritised to reduce negative health impacts with the additional benefits of savings to the public health system.

A disparity also exists in the levels of physical activity between social groups within the Borough. With lower levels of physical activity recorded among those in unemployment, with disabilities, people within the six most deprived areas within the Borough, aged over 55 and from Asian and Black ethnic groups (Public Health England). Projects looking to increase uptake of sustainable travel should therefore consider differences in travel patterns, needs and preference to provide inclusive interventions which are also able to target specific socio-demographic groups.

Air pollution is associated to a number of health issues including respiratory conditions, heart disease and cancer. It also tends to have a greater effect on the most vulnerable in society, such as children, older people, those with prevalent health conditions, and people living in less affluent areas which tend to suffer from poorer air quality conditions²¹. In Waltham Forest, air quality in terms of NO2 emissions is expected to improve between 2013 – 2020 based on forecasts for 2020, as shown in Figure 20 and Figure 21²². However, these figures also show that air pollution still exceeds limits along a significant number of the Boroughs highways and at junctions, specifically the A406, A12, A112 and A104. It must be noted that in the Borough nearly 65% of NO2 emissions come from road traffic²³.

¹⁸ Public Health England. *Child and Maternal Health*. Available at: <https://fingertips.phe.org.uk/profile/child-health-profiles/data#/page/0/gid/1938133228/pat/6/par/E12000007/ati/102/are/E09000031/cid/4/page-options/ovw-do-0>

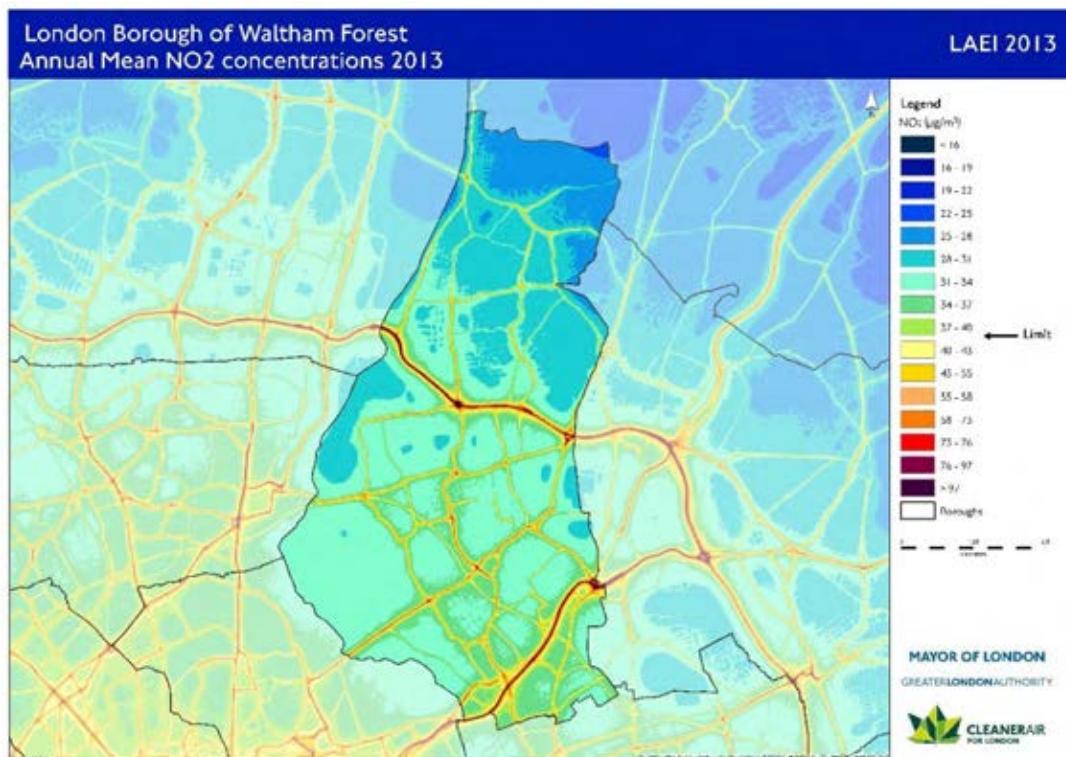
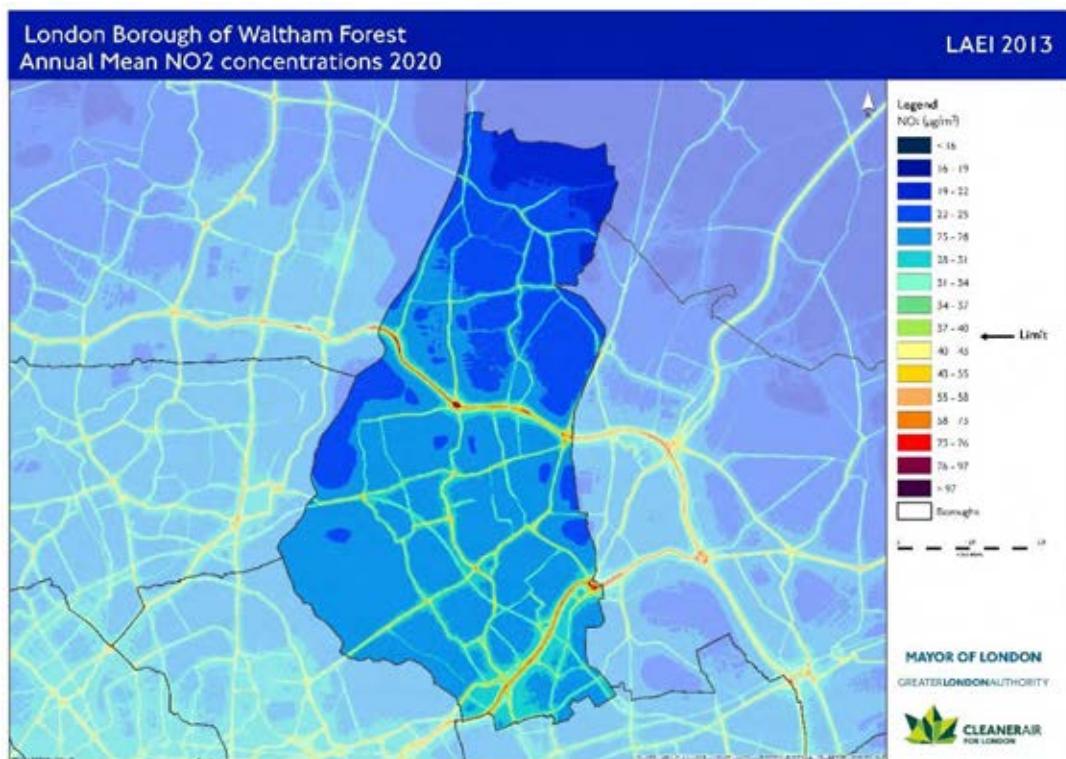
¹⁹ Public Health England. *Local Authority Health Profiles*. Available at: <https://fingertips.phe.org.uk/profile/health-profiles/data#/page/0/gid/1938132701/pat/6/par/E12000007/ati/202/are/E09000031/cid/4/page-options/ovw-do-0>

²⁰ Public Health England. *Diabetes*. Available at: <https://fingertips.phe.org.uk/profile-group/cardiovascular-disease-diabetes-kidney-disease/profile/diabetes-ft/data#/page/0/gid/1938133138/pat/46/par/E39000018/ati/154/are/E38000192/cid/4/page-options/ovw-do-0>

²¹ DEFRA (2006) *Air Quality and Social Deprivation in the UK: an environmental inequalities analysis*.

²² London Datastore. *Air Quality Data*. Available at: <https://data.london.gov.uk/air-quality/>

²³ GLA (2013) *London Atmospheric Emissions Inventory*. Available at: <https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013>

Figure 20 NO₂ concentrations 2013Figure 21 NO₂ concentrations expected for 2020 (forecast based on 2016 data)

Noise pollution also poses a challenge for the Borough as noise pollution can cause sleep disturbance, affect work performance for adults and school performance for children as well as being linked to hypertension and cardiovascular disease.

The road traffic noise based on 24 hour annual average noise level in decibels with weightings applied for the evening and night periods across the Borough is shown in Figure 22. Alongside 'Important Areas' identified relating to road traffic, which are those with the highest levels of exposure to road noise identified through the Environmental Noise Directive (END) noise mapping process. Parts of the Borough that are significantly affected by road traffic noise, are areas adjacent to the A112 and A406.

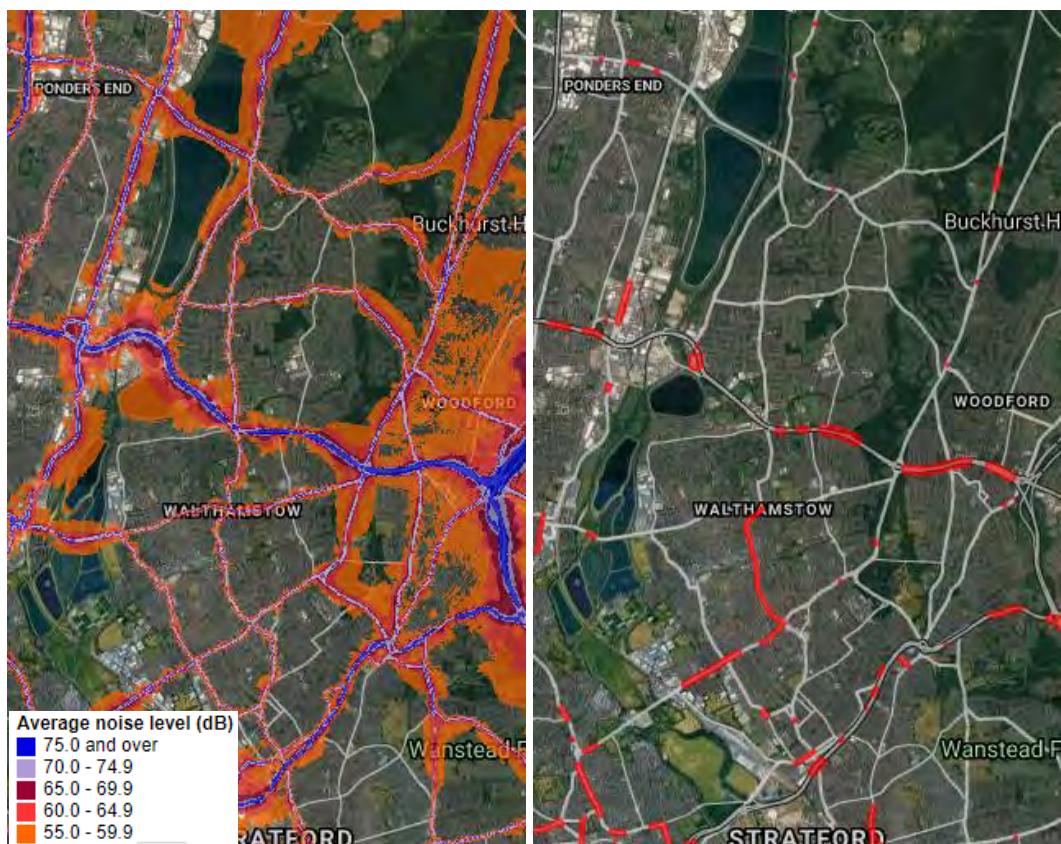


Figure 22 Noise pollution (2017)²⁴

²⁴ Burdett, M., 2020. Extrium > England Noise and Air Quality Viewer. [online] Extrium.co.uk. Available at: <<http://www.extrium.co.uk/noiseviewer.html>> [Accessed 7 May 2020].

3.5 Perceptions of transport

A number of surveys have been undertaken by Waltham Forest which relate to residents and visitors' perceptions of transport. A summary of these is included below to inform the current Strategic Transport Review identification of key challenges and opportunities within the Borough. Additionally, Arup has also undertaken engagement with Waltham Forest Council representatives and an Arup Peer Review panel with members of the Transport team who are current or former residents of Waltham Forest to supplement the desktop review undertaken.

Climate Emergency Research (2019)

Research to understand the perspectives of residents on the Climate Emergency was undertaken by Waltham Forest to inform the Climate Emergency Commission and the Council's climate emergency strategy and action plan. This targeted a mix of respondents via online surveys (3,090 people contacted) and focus groups in each neighbourhood area (45 residents per focus group). Some of the key points from this exercise are summarised below:

- About two-thirds of respondents said they use public transport (69%), cycle or walk (65%) and drive less (64%);
- Over a third said they would consider switching to an electric or low emissions car (56%) or car sharing (32%);
- Residents also said it is not easy to change behaviour and make a difference, due to time (42%), cost (61%), and knowledge (28%);
- Some residents said that significant behaviour change can only happen through force, by changing legislation and rules;
- 15% respondents thought climate change is affecting the local area through pollution;
- People from lower socio-economic grades (63%) are less likely to state than people from lower socio-economic groups (75%) that the council should address the climate emergency by reducing car journeys through good public transport and helping people to walk and cycle more easily;
- Disabled people are less likely (30%) compared to non-disabled people (48%) to support enforcing action through measures like making owning a vehicle more expensive, reducing the number of car parking spaces available, more segregated bike lanes;
- People age 55 and over they are less likely (31%) than younger age groups (52%) to support enforcing action through measures like making owning a vehicle more expensive, reducing the number of car parking spaces available, more segregated bike lanes;
- Residents in the North of the borough are less likely than other residents to think the council should take action to reduce car journeys (60% in North, compared with 77% elsewhere), enforce action through measures like making owning a vehicle more expensive, reducing the number of car parking spaces

available, more segregated bike lanes etc (28% in North, compared with average of 47% in other parts of the borough); and

- Cost and time are identified as the greatest barriers to taking action.

Draft Local Plan Consultation Responses -Transport (2019)

Responses to the Draft Local Plan Regulation 18 consultation for transport were provided by Waltham Forest, relating to Policies 17 and 67 -74. The main themes identified among comments for each policy have been summarised in a way to reflect opinions and concerns reported, therefore, they do not necessarily reflect the views of Arup or Waltham Forest Council.

Policy 17 North Waltham Forest

- Existing transport infrastructure (Overground services, buses and highways) and essential services are already operating at capacity and there is not capacity for the proposed housing growth;
- Environmental and safety concerns relating to proposed housing growth;
- The Chingford to Liverpool Street service is at capacity and interventions are needed to relieve this service, introduction of Hall Farm Curve suggested as solution;
- A number people living in the north of the Borough use a vehicle for work therefore reducing parking could be detrimental to these residents;
- Bus services have reduced in frequency and are not adequate, particularly lack of service to Whipps Cross;
- Links to Crossrail 2 by bus will be needed to prevent congestion worsening;
- Electric vehicles noted as being more appropriate to support existing car use in a more sustainable way;
- Concern for local businesses and retail vitality if parking is reduced; and
- A greater proportion of older people live in this part of the Borough and they, along with people with disabilities, need accessible parking in residential areas.

Policy 67 Liveable Neighbourhoods for All

- Aims to reduce car ownership exclude older people as they rely more heavily on cars, particularly in north where there are hills and cycling is not as accessible;
- Development and promotion of active travel is generally supported and happy for there to be set mode share targets;
- Public transport needs to be a greater priority across the Borough;
- Sufficient consideration is not given to links towards Enfield and Essex.

Policy 68 Walking and Cycling

- Painted cycle infrastructure does not feel safe;

- Walking and cycling need more attention;
- Walking and cycling are not accessible to all, particularly older populations in the north of the Borough; and
- Promotion of walking and cycling generally supported and connections are needed towards green spaces and rivers and lakes.

Policy 69 Public Transport

- Reported that the existing Chingford – Liverpool street service is over capacity, and there are concerns around how housing growth will be supported and accommodated;
- Underground, Overground and bus services are perceived to be operating over capacity; and
- North Chingford lacks basic bus routes to key services (Whipps Cross).

Policy 70 Deliveries Freight and Servicing

- Limitations on construction activity is a concern relating to housing growth goals;
- Concern over stipulated need for FORS membership as this can be costly and not fully represent quality;
- Possibility for freight to be moved by water or rail to reduce road congestion;
- Concern around differentiating between essential commercial vehicle journeys and non-essential travel by private vehicle, social benefit/service of deliveries and access to supplies/business;
- Need sufficient provision of loading bays to allow for freight servicing; and
- Positive views on consolidated pick up locations.

Policy 71 Construction Logistics Plans

- Construction Logistic Plan requirements are stricter than London Plan and National Planning Policy Framework
- Financial incentives should be provided to encourage commercial vehicles to switch to lower impact fuels and refuelling infrastructure should be supported by the Council; and
- Need distribution centres with facilities (toilets, showers etc.) for freight drivers which and support electric and alternatively fuelled.

Policy 72 Managing Vehicle Travel Traffic

- Reducing parking has perceived negative impact on retail vitality, specifically in the north of the Borough;
- Providing low or no car housing developments may exacerbate existing parking problems;
- Support for low and no car development policies as well as some supporting introduction of CPZ's to manage demand;

- Use of car clubs supported in the north of the Borough to reduce car dependence;
- Parking at services (GPs and schools) is already constrained, concerns around impact of this from housing growth and parking reductions;
- Car free developments limit access by trades which require vehicle access; and
- Older people and those with disabilities rely on cars for transport.

Policy 73 Electric Vehicles

- Need more charging infrastructure for electric vehicles;
- Electric vehicle charging points need to be accessible for commercial operates as well as private users, including for residents parking vehicles at home; and
- Too much EV parking could incentivise parking and driving in certain areas at the detriment to other modes.

Policy 74 Assessing, Mitigating and Monitoring Transport Impacts

- Considered excessive for all developments to be required to produce a Transport Assessment.

Road Safety Trust Report

The Road Safety Trust undertook an extensive consultation on perceived safety across Waltham Forest's roads. Street users were asked about the main issues they experience when travelling by different modes. The results of these surveys are shown graphically in Figure 23.

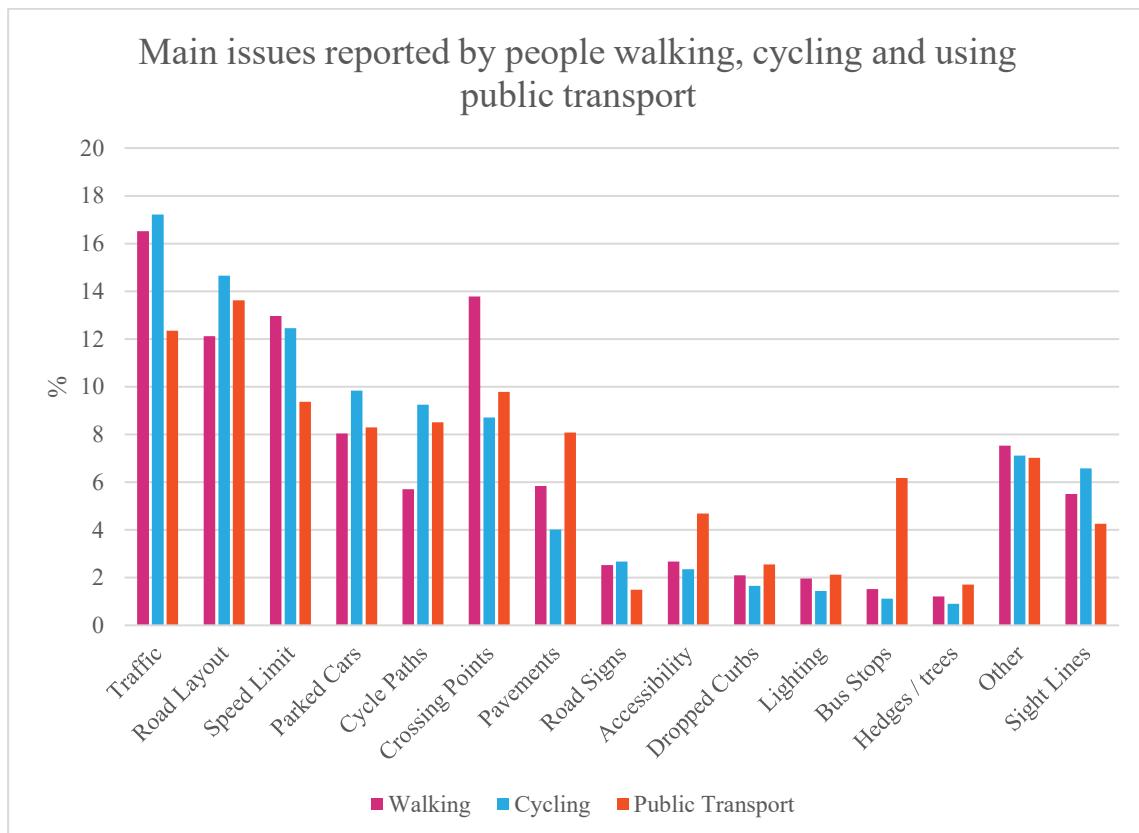


Figure 23 Main issues reported by people walking, cycling and using public transport

As shown, people walking, cycling and public transport users all identified traffic, road layout and speed limits amongst the main issues. Pedestrians in general also identified crossing points as a significant issue in some parts of the Borough.

Many comments focused on the Borough's major roads where interventions have recently been made, such as Forest Road, Lea Bridge Road, Blackhorse Lane, etc. In general, even though the introduction of cycle lanes and other forms of public realm improvements were viewed favourably, some common issues were raised associated with:

- Conflicts between pedestrians and speeding cyclists e.g. cyclists not respecting the traffic signals and issues regarding crossing of the cycle lanes to reach bus stops. Some of the more frequent comments suggested implementing education programmes for cyclists to improve this.
- A lack of distinction between footway and raised cycle lanes, comments were made relating to pedestrians (including children) not paying attention and accidentally entering the cycle lane, creating a conflict with cyclists. Additionally, the high mobility that these lanes currently achieve for cyclists represent a higher risk for pedestrians if they accidentally enter them. It was suggested that a form of distinction such as different surface colours on the cycle lane could help.
- Perceived conflicts between cars driving and parking in cycle lanes. Respondents suggested that more continuity on the road layout would be

helpful, as in some places cycle lanes are stopped in favour of car parking, and in some locations cycle infrastructure can vary from a narrow on-the road layout, to segregated and raised lanes.

- The general level of vehicular traffic was heavily criticised across the Borough. In particular, public transport users were concerned about traffic, extended loading and on-street parking on Sundays slowing buses down along key routes in the Borough.

This is the largest survey undertaken of residents in the Borough and their views on the existing transport network. Any future proposals or interventions that are set out within the emerging Local Plan should address these comments or seek to bring forward alternatives that will ease these issues/concerns.

Highams Park Survey

An online perception survey was undertaken in Highams Park to capture the resident's thoughts on parking in the Highams Park area²⁵. It is of specific relevance given the future expansion of the ULEZ and its potential effect on parking around the Highams Park area.

The survey shows a varied range of opinions, but some recurring comments were associated with:

- Non-residents parking outside resident's homes;
- The impact that restricting parking will have on the viability of small businesses and shops;
- Potential impact on accessibility to services for residents who rely on us of a car;
- Car parking in the area is already over capacity. However, some respondents noted that the fact that Highams Park is one of only two Overground stations which does not have an extensive CPZ around allows people to drive and park around the station to then take public transport.

As mentioned in previous sections, implementing CPZ's in northern parts of the Borough could help manage the effects of the ULEZ expansion. However, any implementation project should consider addressing the underlying issues behind the received comments. For example, in terms of accessibility, it will be especially important to increase accessibility for all to reduce reliance on private car usage.

Workshop Findings

Two workshops were held, the first being an Arup Peer Review panel with members of the Transport team who are current or former residents of Waltham

²⁵ Highamsparksurvey.commonplace. 2020. Highams Park Area Parking Perception Survey. [online] Available at: <<https://highamsparksurvey.commonplace.is/comments/5e5d81d3f52e170010f606e1>> [Accessed 7 May 2020].

Forest as well as with key stakeholders from Waltham Forest's Council. These helped identify some perceived connectivity gaps and potential areas for improvements at a local level. These include:

- Improving connectivity:
 - a) Locations identified were the north-west of the borough, which is expected to accommodate growth, but already experiences connectivity constraints due to the distance to Underground/Overground stations. Additionally, the reservoirs and the forest to the west and east of the Borough create natural barriers constraining connectivity to neighbouring boroughs to a few congested routes.
 - b) Connectivity between Boroughs could be improved, specifically potential to improve connectivity between Chingford and Woodford (currently there is no bus route connecting both). Active travel infrastructure could also allow residents in the north of the Borough access the central line directly. Another key opportunity to explore is linkages to Meridian Water in Enfield, which is expected to further develop as a centre of activity.
- Improving wayfinding:
 - a) Specifically, connections between Blackhorse Lane Station and St James Street Station is easily walkable, however, is not easy to follow.
 - b) Linkages between Whips Cross and the stations in this vicinity (Wood Street, Walthamstow Central, Leyton Midland Road, Leytonstone, Snaresbrook) were identified as disconnected to some given that walking to these stations would usually take 15-30 minutes depending on the starting point and speed. These journeys could be walkable if appropriate wayfinding and the quality of the built environment is improved. Additionally, journey times between the stations and hospital could be reduced by cycling.
- An integrated approach to quality and quantity of active travel facilities: It was mentioned that the improvements along main roads have improved speeds and safety for cyclists, however, conflicts are encountered with pedestrians and public transport users at some points along these routes. It was mentioned that interventions should seek to enhance both mobility but also improve place-making along these routes in order to make them pleasant places to travel but also gather. The potential to improve the public realm along these routes was highlighted.

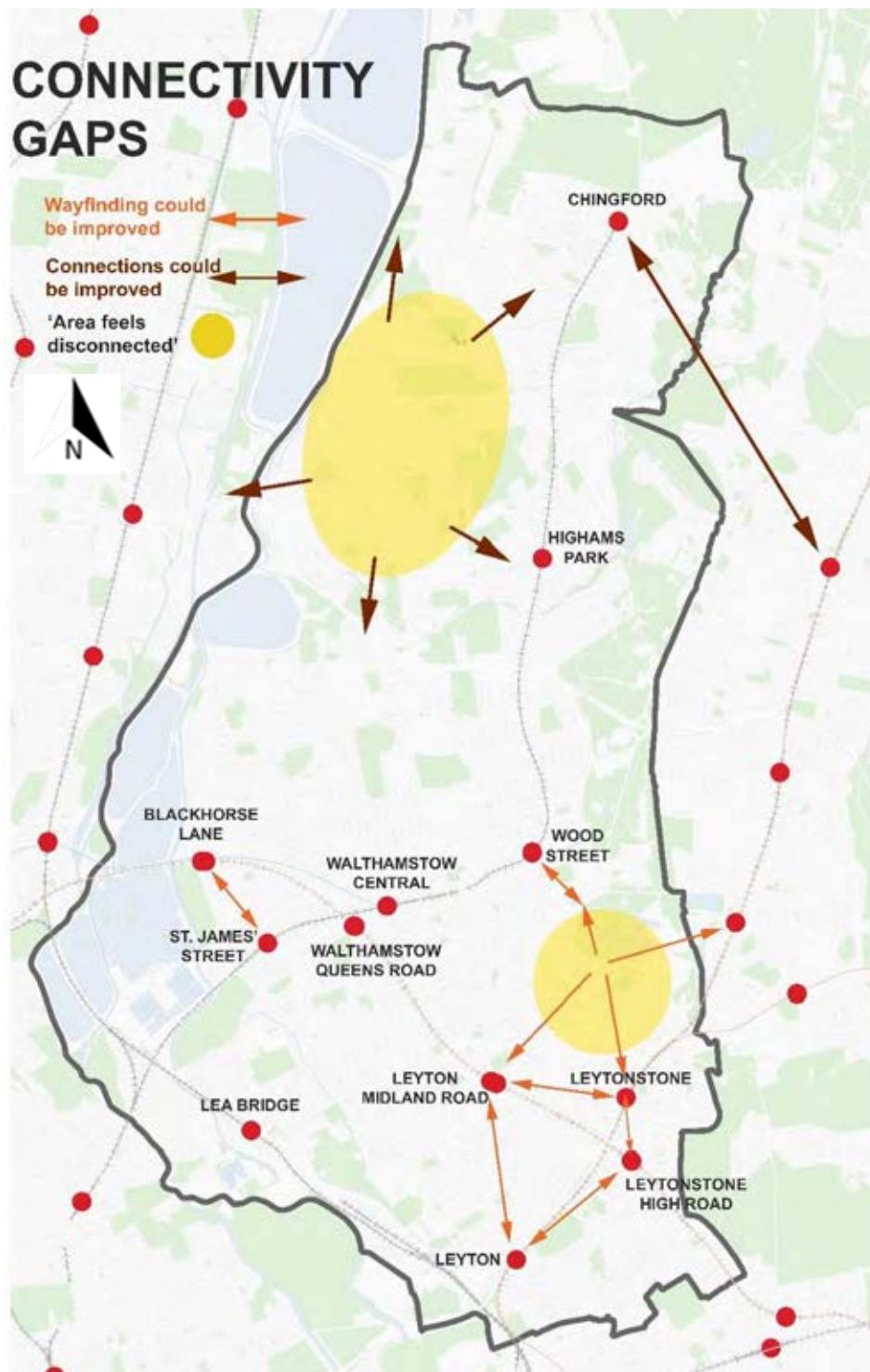


Figure 24 Connectivity Gaps

4 Strategic Review of Current Transport Strategy

This section evaluates the transport policies currently being put forward in the Draft Local Plan alongside the existing evidence base and proposed interventions, followed by an assessment of the proposals against the vision and objectives for the Borough outlined in Section 1. This is followed by a summary considering the Borough's existing strengths and opportunities.

4.1 Assessment of the proposed policy

This section outlines the transport policy included in the Draft Local Plan, the evidence base set out within this, alongside opportunities to enhance this with existing information available to the Borough and high level gaps which will need to be filled by further work. The proposals identified in Section 4.2 which would help meet these policies are also identified alongside brief commentary on how well these match or work to achieve the proposed policy and further work which may be required.

Policy

Policy 67 Liveable Neighbourhoods for All

This policy centres around meeting Healthy Streets indicators, by enhancing opportunities for use of public space, walking, cycling and public transport and reducing motor dominance to improve safety and work towards Vision Zero.

This would be contributed towards through wayfinding, improved permeability for active modes, more attractive neighbourhoods and a subsequent improvement in air quality.

Evidence base

The LIP (2019) identifies challenges relating to health and specifically physical activity, which is related to obesity, diabetes, mental health and cardiovascular disease. The Mayors 'Healthy Streets for London' guidance also sets out how physical activity can reduce risk factors for these health challenges.

Opportunities - The Vision Zero Action Plan outlines how Liveable Neighbourhoods contribute towards reduced road danger. The Waltham Forest 2020 Vision identifies impact of Mini-Holland schemes in increasing cycling, both could be utilised more as part of the evidence base.

Transport and carbon modelling work undertaken as part of the Climate Emergency Commission should be utilised in developing the evidence base for further Liveable Neighbourhoods.

Gap – Thorough scheme evaluation to identify the most successful schemes, specifically relating to cost and scale of interventions.

Interventions which address policy

- Workstream Making Liveable Neighbourhoods for Everyone, successful bid for Coppermill Liveable Neighbourhood and proposals at Newham and Higham Hill/Lloyd Park;
- Strategic cycle infrastructure proposals will contribute towards Liveable Neighbourhoods by allocating more space to cyclists; and
- Improving station gateways will improve public realm and step free access will improve accessibility for all to public transport.

Proposed Liveable Neighbourhoods work, and public realm improvements are well linked to this policy and will generally improve the environment in the Borough. There is also a good basis for development of this in existing Enjoy Waltham Forest work undertaken.

Policy

Policy 68 Walking and Cycling

Walking, developments should contribute towards delivery of Liveable Neighbours for all through enhanced walking connections, and maximised permeability between developments and the locality for sustainable travel.

Cycling, support delivery of strategic or local cycle network, provide accessible, secure, and convenient accessible cycle parking at key locations catering to adapted cycles, and provide accessible facilities including showers, changing rooms and lockers.

Evidence base

Healthy Streets for London outlines how physical activity can reduce risk factors for health challenges which exist in the Borough in addition to TfL Walking and Cycling Action Plans which advise how walking and cycling can be encouraged, barriers and the need for this.

TfL Analysis of Walking Potential (2016) which identifies 73,400 additional walking trips possible in the Borough each day.

Opportunities - Utilisation of Road Trust Survey perceptions around what would encourage residents of the Borough to walk and cycle more, specifically that high road traffic makes walking unappealing.

The Waltham Forest 2020 Vision identifies impact of Mini-Holland schemes in increasing cycling, this could be utilised as part of the evidence base.

Gap – Thorough scheme evaluation to identify the most successful schemes, specifically relating to cost and scale of interventions.

Interventions which address policy

- Workstream Making Liveable Neighbourhoods for Everyone, successful bid for Coppermill Liveable Neighbourhood and proposals at Newham and Higham Hill/Lloyd Park, will have a positive impact on walking and cycling opportunities in existing neighbourhoods;
 - Strategic cycle infrastructure proposals and installation of Cycle Hubs at stations will contribute towards this by allocating more space to cyclists; and
 - Improving station gateways will improve public realm and access to stations by walking.
- Opportunity** - Generally a greater focus on cycling improvements, despite walking being the most accessible form of transport as it requires no equipment. Liveable Neighbourhoods incorporate Healthy Streets Approach but there could be a greater focus on walkability to key locations across the Borough to address this policy.

Policy

Policy 69 Public Transport

Buses, developments should mitigate impacts on capacity or operation of the network based on assessment of cumulative impact of proposed and surrounding development. Major developments with low bus provision should contribute towards improved connectivity and operation.

Underground, Overground and National Rail, major developments should contribute to delivery of Rail/Underground/Overground and new public transport infrastructure to unlock growth.

Evidence base

Opportunities - Further background information around capacity challenges is set out in the LIP and Growth and Investment Strategy which could be utilised here.

Connection between PTAL scores across the Borough to determine accessibility to public transport and locations which need enhanced services could be added.

Information gathered through the Bus Network Review undertaken is required to enhance the evidence base.

Gaps – No evidence is provided in the Local Plan outlining capacity of Overground/ Underground or bus networks or where specific works will be required to support growth. Further studies or information from TfL regarding bus network performance will be required.

Interventions which address policy

- Capacity improvements at Walthamstow Central, for buses and Underground/Overground;
- Redevelopment of Leyton Underground Station;
- New station at Ruckholt Road and possible reinstatement of the Hall Farm Curve subject to funding constraints;
- Lea Bridge Road station improvements;
- A smarter greener bus network, improving capacity and provision; and
- Station gateways and step free access.

Opportunity – All of the major proposals identified in the LIP target improvement to public transport capacity. Trigger points should be developed based on estimated capacity increase or baseline PTAL score which link public transport improvements to developers with anticipated significant capacity impacts.

Policy

Policy 70 Freight and Servicing

Developments should seek to minimise adverse impacts of deliveries, freight and servicing by, reducing trips during operations and construction phases of developments, consolidating deliveries, reducing waste collection trips, arranging deliveries outside of peak hours, utilising zero emissions vehicles, utilise efficient online retailing and incorporating Delivery and Servicing Plans in scheme design.

Evidence base

Connection made to TfL Freight and Servicing Action Plan and general growth in service vehicles occurring based on Department for Transport reports.

Opportunity – Freight has a significant impact on safety and managing this could help the Borough achieve Vision Zero, this connection could be made more explicitly. Nearly two-thirds of cyclist deaths and around a quarter of pedestrian deaths involve a heavy goods vehicle.

Gaps – Baseline study on impact of freight and servicing across the Borough, alongside impacts relating to future growth of this sector.

Interventions which address policy

- Continuation of Zero Emission Delivery scheme will continue to reduce the impact of freight;
- Leytonstone Business Low Emission Zone (BLEN), including Virtual Loading Bay system and kerbside scoping studies will reduce freight and servicing impact at a localised level; and
- Based on comments the Borough is considering implementing freight consolidation hubs although this is not a confirmed project.

Gap - Neither the LIP or Growth and Investment Strategy policies specifically target freight and servicing and how these could be affected by expansion of the ULEZ.

Policy 71 Construction Logistics Plans (CLPs)

Policy 71 sets out the minimum requirements for the Construction Logistics Plans for residential and commercial developments. It considers the potential impacts on the road network as well as on communities and vulnerable road users. Specifically, when the development is located in

The policy identifies relevant standards for construction logistics vehicles, the Fleet Operator Recognition Scheme (silver) and the need for CLPs to mitigate negative impacts of development.

- Construction Logistics Plans to be submitted as part of planning process and criteria outlined which would necessitate detailed CLP

Gap - Impact of construction in the Borough relating to housing and employment growth is not

Policy

close proximity to town centres, transport hubs, near the Borough cycle network, etc.

Evidence base

Opportunities - The LIP provides a summary on where vehicular traffic tends to concentrate and key congestion areas.

Gap – Strategic transport modelling across the Borough could be used to ascertain and manage the impact of construction related to housing and employment growth across the Borough.

Interventions which address policy

considered in the LIP or Growth and Investment Strategy and isn't specifically targeted by any of the major transport policies identified.

Policy 72 Managing Vehicle Travel Traffic

Includes considerations of (i) Car Parking Standards, (ii) Parking management, (iii) Estate Regeneration, and (iv) Car Clubs.

The policy generally supports car free developments in the centre and south of the Borough, with maximum standards applying in the north. Developers are required to produce Parking Management Plans and where appropriate contribute to the car club network.

The Local Plan acknowledges that having tighter car parking policies and encouraging car clubs will contribute towards the objectives set in the Waltham Forest's Transport Growth and Investment Strategy and the LIP.

Opportunity - Levels and difference in car ownership across the Borough are relevant here, but not expanded on these are clearly set out in the LIP.

Gaps – Existing parking policy is outdated (2008) and does not support the Boroughs Local Plan and aspirations to achieve 80% sustainable transport target across the Borough. A Parking Study will be required to determine

- Planned Business Low Emission Zone in Leytonstone; and
- Support of car free developments in the south and centre of the Borough and application of maximum car parking standards in the north (although these are still under development).

Gaps – Updated parking policy across the Borough to support introduction of low and no-car developments in the south and maximum car parking standards proposed for the north, in alignment with the new London Plan and the MTS

Policy

Evidence base

how parking can be managed across the Borough and progressively reduced to discourage driving and encourage trip switching to active and sustainable modes. The expansion of the ULEZ and the impact on road traffic levels and car parking considerations should also be considered in this section.

Interventions which address policy

objectives for increased active travel and London-wide mode shift.

Policy 73 Electric Vehicles

Policy focused on the ability of new developments to contribute to the uptake of electric vehicles mostly through contributions on the provision of charging infrastructure within and outside the development, subsidies and parking-space management, providing for minimum 20% EV charging spaces at new residential developments, etc.

The Electric Vehicle Charging Point Strategy (2018) provides a good evidence base to support this policy. This includes the underlying issues associated to pollution and their health impacts as well as the existing trends around EV ownership and usage. It also highlights the opportunity that new developments and emerging technologies provide in contributing to a more rapid EV uptake.

Opportunity - The Local Plan mentions that there is evidence of high pollution concentration along the two TfL Strategic Network roads and other major roads. It also mentions asthma recurrence within Waltham Forest. However, it does not point directly to

- London Borough of Waltham Forest Electric Vehicle Charging Point Strategy (2018-2022) sets out how EVs will be supported; and
- Planned Business Low Emission Zone at Leytonstone will be a good case study for schemes that could be rolled out further across the Borough.

Policy

Evidence base

all the work done at the Electric Vehicle Charging Point Strategy (2018).

Gap – Parking review and policy will be required to support proposal of EV parking requirements at new residential developments.

Interventions which address policy

Policy 74 Assessing, Mitigating and Monitoring Transport Impacts

The policy sets out transport requirements for new developments including the submission of Transport Assessments, Travel Plans and a Construction Logistics Plan.

It is advised that these are prepared in accordance with regional policies (e.g. TfL's Healthy Streets Transport Assessment (2019), Travel Plan Guidance (2019), and CLP Guidance (2017). This will then serve to inform the appropriate level of transport contributions/mitigations expected from the development.

Gap – Strategic modelling could be used to support understanding of growth potential and the impact of proposed developments.

- Requirement for developments to submit Transport Assessments, Travel Plan and Construction Logistics Plan.

Opportunity – Undertaking monitoring of Travel Plans, and the developments schemes that have conditions placed upon them, to ensure compliance. Evidence from other London Boroughs suggest that cycle parking provided in new developments based on planning conditions rarely meets the standards required (e.g. WestTrans report indicated that only 1 out of 164 parking locations met standards required and 40 out of 71 developments provided less spaces than conditioned)²⁶, therefore, greater oversight of compliance is required.

²⁶ WestTrans, 2016. Bicycle Parking Monitoring Pilot - Summary Report. [online] WestTrans, pp.1-25. Available at: <[http://www.westtrans.org/WLA/wt2.nsf/files/WTA-219/\\$file/Cycle%20Monitoring%20Report.pdf](http://www.westtrans.org/WLA/wt2.nsf/files/WTA-219/$file/Cycle%20Monitoring%20Report.pdf)> [Accessed 7 May 2020].

4.2 Assessment of the proposed interventions

The transport proposals for the Borough are set out within the Waltham Forest Transport Infrastructure: Growth & Investment Strategy (2018) and Local Implementation Plan (2019). These set out the case for the proposals, how and when they aim to be financed and delivered, and how the schemes align to the Boroughs objectives.

The Growth & Investment Strategy sets out five priority projects and two workstreams which aim to unlock growth opportunities through transport improvements across the Borough. In addition, the LIP outlines the same schemes alongside long-term proposals up to 2041, including development of the Boroughs primary cycle network.

The Strategic Locations for growth identified in the Draft Local Plan and the existing and proposed cycle network are included in Figure 25. The locations of the proposals identified in the Growth & Investment Strategy alongside the existing and proposed cycle network are shown in Figure 26.

From Figure 25 and Figure 26 it is clear that the majority (11 out of 16) of the Strategic Locations in the Borough are concentrated south of the A406. Alongside the concentration of existing and proposed infrastructure, which is planned to support this, meaning that there is less of a focus on the north of the Borough where fewer growth areas are located.

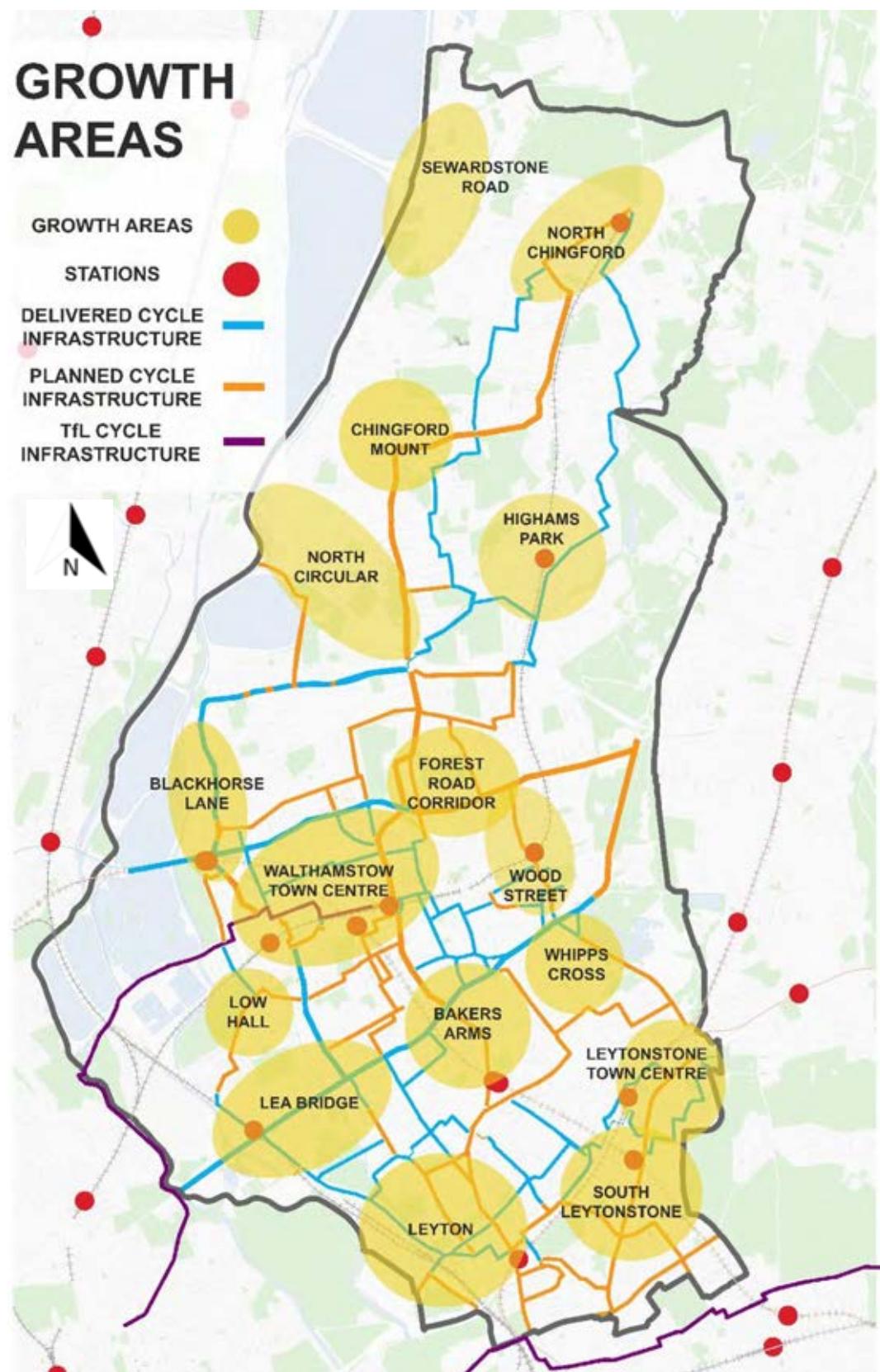


Figure 25 Growth areas and proposed and existing cycle network

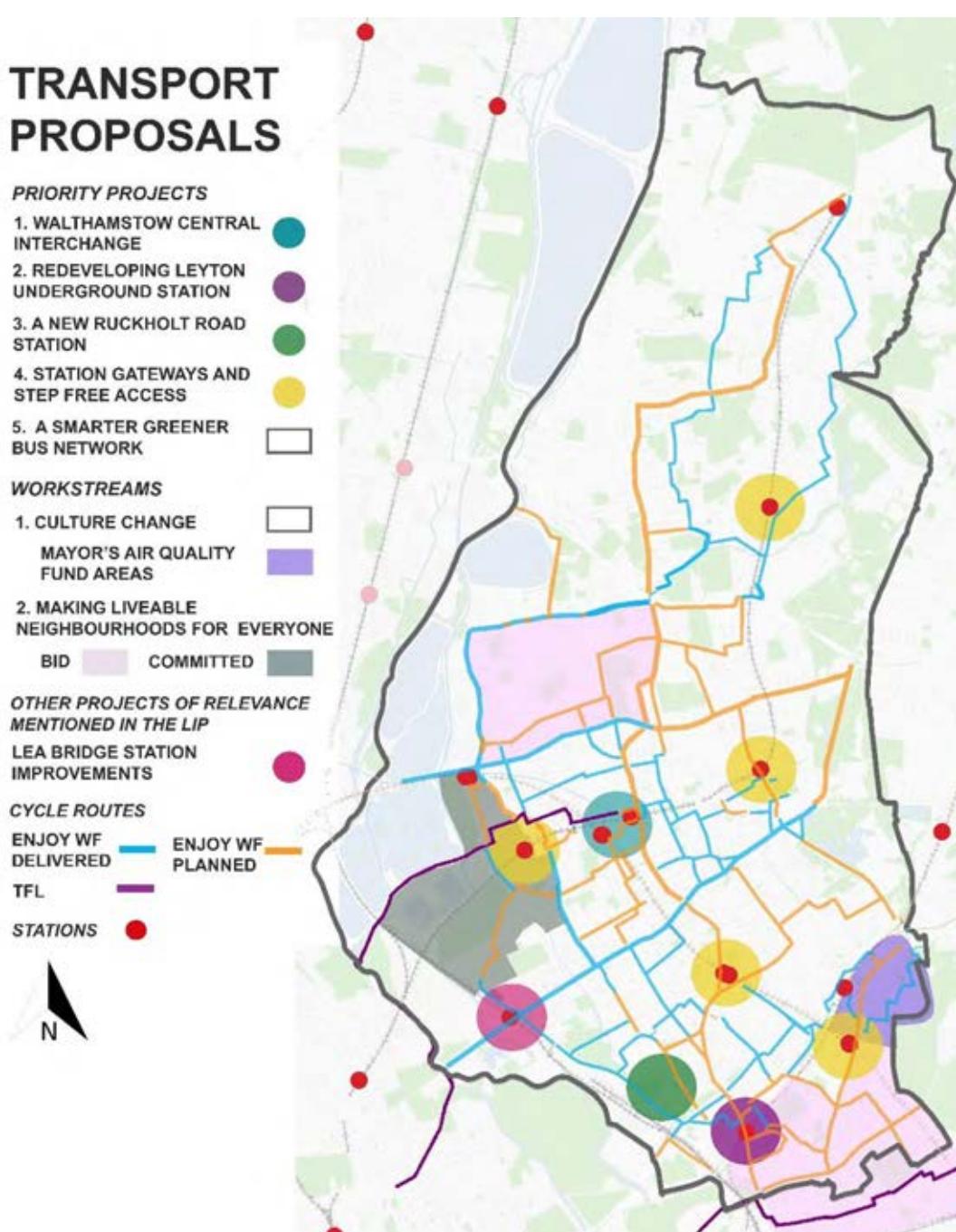


Figure 26 Local Implementation Plan 3 and Growth and Investment Strategy proposals

The five long-term priority projects, two workstreams and strategic cycle infrastructure plans are outlined below alongside anticipated funding source and approximate delivery dates (based on the LIP). These schemes are evaluated against the six key objectives identified for the Borough in Section 2 and outlined below:



Ensuring housing and economic growth is delivered sustainably;



Creating liveable and safe neighbourhoods by enhancing placemaking and maximising the unique strengths of the Borough.



Ensuring transport is accessible for all;



Enabling access across the Borough by reliable and efficient alternatives to private car use;



Supporting local town centres to enhance the local economy, reduce the need to travel and increase travel by active modes; and



Contribute to improved health and wellbeing of those who live, work and study in the Borough.

Proposal

Walthamstow Central

Walthamstow Central is the borough's main town centre providing Underground, Overground and bus links for the borough and has plans for a minimum of 2,000 homes and extension to the Mall shopping centre.

Proposals include enhancements to Walthamstow Central Station and bus station, Town Square, street market and creation of a new civic neighbourhood at the Town Hall and Assembly Halls. Alongside investment in space for creative businesses and growth in the cultural and evening economy.

Funding: TfL Growth Fund, Step Free Access Fund or developer contributions

Delivery: 2020 - 2025

Redeveloping Leyton Underground Station

The Station will be redeveloped in order to support regeneration of the Lea Valley Eastside area and the development of at least 2,500 new homes.

The proposals include providing step free access at the station, a larger ticket hall, new footbridge over the tracks. Broader improvements are

Alignment to six key objectives



The scope of this proposal is in line with the Borough's planned housing growth and is focussed in a sustainable location alongside enhancements to increase station capacity to support the growth and development of the local economy and public realm. Therefore, this goes some way to meeting all the six key objectives identified.

This proposal may bring wider benefits to the Borough by reducing the need to travel beyond the Borough for some leisure, however, benefits will likely accrue mostly to those closest to Walthamstow and in the south of the Borough, who already benefit from high frequency rail services and Enjoy Waltham Forest programmes.



This proposal supports key objectives in delivering housing growth sustainably, enhancing the public realm at the Station and providing step free

Proposal

also planned to the public realm around the station which is a gateway to Leyton Town Centre and Growth Area.

Funding: TfL Growth Fund, Developer Contributions, TfL Step Free programme

Delivery: 2020 - 2025

A new Ruckholt Road Station

This station in the Lea Valley Eastside area would provide direct access to Stratford, relieving local bus routes and the Central Line. Enabling regeneration plans in the south of the borough and development of sites with potential for 2,500 homes.

In connection with this proposal, the Council is also considering reinstatement of the **Hall Farm Curve**, connecting between Chingford – St James Street Overground and the Lea Valley Line to Lea Bridge and Stratford. This would improve connectivity and access from the north of the borough into the city via Stratford. However, significant constraints to delivery exist including providing an additional platform at Stratford, Highams Park level crossing capacity. The Hall Farm Curve proposals are not supported by the Department for Transport or TfL and therefore funding would have to be provided by the Council which may be prohibitive.

Funding: TfL Growth Fund (not confirmed), Developer Contributions

Delivery: 2030 – 2041
including Hall Farm Curve

Alignment to six key objectives

access. Providing access over the railway tracks and step free access will also increase the population who can benefit from the station, enhancing opportunities for sustainable travel.

As with redevelopment of Walthamstow Central the benefits will be concentrated among existing and new residents in the area.



Developing a new Station at Ruckholt Road could have a significant impact on modal shift in the area and unlock land for sustainable growth and relieve congestion by providing access to the Overground.

If this is delivered alongside reinstatement of the Hall Farm Curve there is potential to extend the benefit of this across Waltham Forest, specifically the north of the Borough. However, the significant cost for the Council and possible challenges relating to delivery including Highams Park level crossing would need to be given serious consideration compared to the possible benefits derived and alternative schemes.

Proposal

Lea Bridge Road Station Improvements

Improvement works are planned at Lea Bridge station to support significant planned housing growth in the area. Services have also recently increased on this route from two to four trains per hour to cater to demand, increasing accessibility to Stratford.

Funding: Developer Contribution

Delivery: 2021

Station Gateways and Step Free Access

None of the Overground stations at Wood Street, St James Street, Leyton Midland Road and Leytonstone High Road have step free access, and most have poor environmental quality and underused assets.

The proposals include investment in step free access at Highams Park, Wood Street, St James Street, Leyton Midland Road and Leytonstone High Road.

Additional opportunities for place-making, improving walking and cycling links and revitalising business at some stations is being pursued.

Funding: TfL Step Free programme, DfT Access for All programme, Developer Contributions

Alignment to six key objectives



The proposals at Lea Bridge road will support the Boroughs plans for housing growth in sustainable locations, this is particularly enhanced by increased service provision. However, as with the other station improvements benefits will accrue mostly to those in close proximity to the station.



This proposal will address a number of key objectives due to the range of stations included in the proposals there is likely to be an impact across the Borough in improved accessibility for all and improving liveability. Station redevelopment is also likely to have knock on benefits to the areas and businesses in the vicinity of stations.

Wayfinding should be included in these proposals to sign post local destinations and improve onwards connectivity for active travel from stations.

Proposal

Planning a Smarter, Greener Bus Network

Bus services can connect communities without access to Underground or Overground stations to rail services and can also unlock regeneration sites.

The key proposals are, re-design of Walthamstow Bus Station, realignment of Whipps Cross Roundabout, improved north -south provision at Blackhorse Lane, Chingford Mount and neighbourhoods without Overground services, towards more high frequency services. In addition to north-south routes through Lea Valley East Side, links to Crossrail 2 and live technology improvements.

Funding: TfL and Developer Contribution

Delivery: 2018-2025

Primary Road Cycle Network

The proposal aims to deliver the Boroughs aspirational cycle network through high quality, segregated cycle facilities across a number of main roads, expanding on the Enjoy Waltham Forest Network.

In parallel with this the Borough are also planning to install Cycle Hubs across all stations in the Borough, adding to the seven currently installed. Cycle Hubs enable multi-stage trips (cycle to station before onward

Alignment to six key objectives



Developing the bus network will play a key role in enabling mode shift across the Borough, particularly where stations are not accessible.

Improvements to the bus network will need to be undertaken alongside improved route efficiency/priority measures to allow bus to be a competitive mode of transport, particular attention should be given to provision in the north of the Borough which isn't well served by stations.



Increasing uptake of cycling through increased cycle infrastructure provision, could have knock on benefits for health and wellbeing, by increasing levels

Proposal

journey) and therefore provide public health benefit and relieve parking stress.

Funding: LIP funding and Developer Contribution, further funding streams will be required

Delivery: 2019-2025

Alignment to six key objectives

of physical activity, enabling multi-stage trips and reducing travel by less sustainable modes.

Development of further cycle infrastructure will need to take serious note of concerns raised through perception surveys included in Section 3.5 around increased interactions between cyclists and pedestrians. This will need to ensure development of cycle infrastructure does not occur to the detriment of walking facilities.

Making Liveable Neighbourhoods for Everyone

The Council is looking to expand the Enjoy Waltham Forest programme based on previous success so that more neighbourhoods can benefit from these interventions through projects such as the TfL funded Liveable Neighbourhoods. The proposed projects are outlined below.

Coppermills Liveable Neighbourhood plans (funding secured 2018)

The aim of the scheme is *to encourage residents, businesses and visitors to use more sustainable modes of transport in their day-to-day lives, in order to reduce congestion, tackle air pollution and improve the health and wellbeing of local people.*

The proposals build on the Mini Hollands with modal filters, improved cycle routes, crossings for pedestrians, resurfacing, improved lighting, public realm, landscaping and a bus gate. The behaviour change team is also implementing activities in the Coppermills area to support the physical infrastructure, this includes activities to enable walking and



The Boroughs ambitious plans for three Liveable Neighbourhoods schemes could have a significant impact on health, wellbeing and liveability for the residents of these areas and anyone passing through. Also, the delivery of physical infrastructure supported by behaviour change initiatives are much more likely to be successful in encouraging mode shift.

Collaborating with Newham to provide cross-Borough develop is a good opportunity to take a strategic approach to encouraging active and sustainable travel.

Proposal

cycling including an all ability cycle club, cycle loans, Dr Bike and Second-Hand Bike Markets.

Higham Hill Lloyd Park Liveable Neighbourhood bid (2019 bid pending)

Newham / Waltham Forest Liveable Neighbourhood bid (2019 bid pending)

Leyton Green Liveable Neighbourhood (identified in LIP 2019)

Funding: TfL Liveable Neighbourhood fund **Delivery:** 2019 -2041

Culture Change: Shift to Sustainable Travel and Green Vehicles

To support mode shift the Council intends to deliver sustainable travel initiatives which support housing development, business growth and improve local environmental quality.

The primary proposals are to increase the number of electric charge points, encourage car clubs, implement CPZ's and continue use of ZED. The Council also secured TfL funding in 2020 for a Business Low Emission Neighbourhood (BLEN) which is outlined below.

Leytonstone Business Low Emissions Neighbourhood (secured 2020)

Plans include improving cycle connectivity between residential developments and the town centre, increased cycle parking and

Alignment to six key objectives

While the Liveable Neighbourhood schemes are likely to provide a number of benefits, they are all concentrated in the south of the Borough where there is already a greater density of cycle networks, and lower car use.

The potential to implement Liveable Neighbourhoods schemes tailored to communities north of the A406 should be seriously investigated as these locations will need significant intervention to meet the MTS target of 80% mode share for sustainable travel.



By providing opportunities for housing growth, improved environmental quality, and health and wellbeing this proposal helps meet a number of the objectives identified. These proposals are the core of Waltham Forest's plans to accommodate an increased uptake of EV's which may increase following implementation of the ULEZ.

The BLEN offers a good opportunity to trial schemes which prioritise low emission and shared vehicles on a local scale. To widen the benefits of this

Proposal

pedestrian improvements at key junctions. Increase of green infrastructure including parklets, cleaner air maps and live air quality reporting.

Alongside scoping studies into kerbside activity, Virtual Loading Bay system, a ULEZ and ULEV priority parking controls to inform future proposals. New EV charging points and EV car share for businesses are also planned alongside improvements to Leytonstone gyratory.

Funding: LEN bid via Mayors Air Quality fund, TfL Liveable Neighbourhoods

Delivery: 2020 - 2030

Alignment to six key objectives

proposal successful schemes should be evaluated for suitability for expansion, using the existing track record to secure funding.

There is specifically a significant opportunity to develop similar schemes in communities north of the A406 which have significantly higher levels of car usage and are likely to have significant scope for improvement. The possibility of implementing CPZ's in the north of the Borough should also be pursued as a priority relating to the Culture Change proposals.

4.3 Identification of strengths and opportunities

Based on both the existing context set out in Section 2, the policies and objectives identified in Section 3 and the proposals outlined above the Boroughs current strengths and opportunities relating transport are outlined below.

Transport strengths

Enjoy Waltham Forest

Significant work and progress has been made through the Enjoy Waltham Forest programme to improve the environment for active travel within the Borough, with knock on benefits to town centre vitality and resident's health and wellbeing. The existing basis and network which has been developed provides a good foundation for further development and it is important that future proposals consider which interventions have had the most significant positive impact in the past to continue to refine the approach. This is particularly relevant in light of comments around cyclists coming into conflict with pedestrians.

Accessibility

The proposals to provide step free access at all stations in the Borough are key to increasing accessibility for all in line with the Mayors Transport Strategy and objective 3 identified within this Transport Strategy. This will help the Borough cater to the needs of the forecast growth in older populations and large young families living in the Borough.

Behaviour change initiatives

The Borough has been successful in balancing physical infrastructure improvements where these are necessary and supporting this with behaviour change campaigns which encourage and enable mode shift among a broad group of the population, through initiatives such as cycle training, bike swap shop and Dr Bike.

ZED

ZED is an example of the Borough's forward-thinking approach to existing challenges and based on its successful uptake, and positive impact on congestion, air quality and climate change this programme should be continued.

Together these initiatives support a number of the objectives identified in this report, including the Draft Local Plan and Mayors Transport Strategy to support sustainable growth and enhance access to sustainable transport for all members of the Borough.

Transport opportunities

Throughout Section 3, seven key challenges were identified and are listed below.

1. Lack of internal connections north-south through the Borough;
2. Concentration of transport infrastructure developments south of the A406;
3. Higher rates of physical inactivity in the Borough compared to the London average;
4. Station capacity constraints;
5. Road traffic collisions and conflicts between people cycling and walking;
6. Existing bus network and services which a large proportion of the Borough rely on do not provide a viable alternative to private car use; and
7. Harnessing the effects of the ULEZ expansion.

The current proposals meet a number of the strategic objectives a number of opportunities have also been identified below to address the existing challenges and increase sustainable travel uptake in the Borough.

North south differences

A key area to address is the divide in existing travel patterns and level of proposals being targeted at the north and the south of the Borough. The individual proposals go some way to meeting the key objectives identified, however, it is important to consider the total impact these will have and where this will be concentrated. As shown in Figure 25 the proposals are concentrated in the south of the Borough to unlock land for development in areas with sustainable infrastructure. This maximises benefit from the existing infrastructure, however, this means significant parts of the Borough in the north are not receiving any direct benefit and therefore the objectives are not being met equally.

The Borough should seek to identify and prioritise public transport improvements that can take place in the north of the Borough, including connections towards higher frequency rail services, broadening the benefit of station capacity proposals. This has potential to create a significant mode shift and achieve progress towards the MTS target of 80% travel being by sustainable modes.

Cross Borough collaboration

Cross Borough collaboration is essential to creating a strategic sustainable transport network. This is particularly notable as there is significant growth planned in the Upper Lea Valley, possible connections east towards the Central line from the north of the Borough and north of the Borough towards Essex through Epping Forest SAC. The impact of transport along these routes needs to be considered in order to maximise benefits to those living in the Borough and deter increases in vehicle traffic along these routes.

Growth areas sustainability

A key priority of the Draft Local Plan is unlocking and providing sustainable growth, but there is a need to consider existing communities in the north and the

Strategic Growth Areas. The Sewardstone Road (450 new homes) and North Circular Road (900 homes) Strategic Growth Areas have been identified but are a considerable distance from existing stations and existing and proposed cycling infrastructure. Concerns were raised in Section 3.5 around providing additional homes in an area with poor existing sustainable transport access. Appropriate Transport modelling identifying baseline conditions and identifying impact of growth is required to ensure growth can be accommodated sustainably whilst improving people's health by getting them to be more active in their transport behaviours and choices.

High quality public transport, walking and cycling links comparable to those being planned for Strategic Growth areas in the south will be needed to ensure healthy travel patterns when people move in. This will include links to the Meridian Water development for the latter.

CASE STUDY: 20-minute neighbourhoods Melbourne²⁷

The Plan Melbourne 2017-2050 outlines the 20-minute neighbourhood concept which encourages 'living locally' by developing places which allow people to fulfil most of their daily needs without the need to drive. The strategy identifies policies to encourage jobs, services and transport close to homes in order to accommodate future population and employment growth sustainably and in healthy environments.

20-minute neighbourhoods provide pleasant walking environments, access to safe cycling and local transport options to local populations with the goal of creating healthy communities. Their main elements include: diverse housing, good access to local public transport, attractive streets and open spaces, availability of varied local services and destinations, availability of local businesses, etc.



²⁷ Victoria State Government (2020) *20-minute neighbourhoods*. Available at: <https://www.planning.vic.gov.au/policy-and-strategy/planning-for-melbourne/plan-melbourne/20-minute-neighbourhoods>

Developing trigger points for transport interventions

To establish impact of developments and when interventions are required trigger points should be identified at which point schemes to improve conditions should be considered. Temporary, experimental measures can also be quickly and easily trialled to see if they work and achieve popularity amongst local people, providing a case for further development. This will allow developer funding to be leveraged in improving access and conditions at stations, bus stops, walking and cycling routes which could become overcapacity due to increased users.

ULEZ and parking

The extension of the ULEZ presents an opportunity to improve air quality, reduce congestion and encourage a mode shift away from private car usage. However, the Borough will need to accompany this with appropriate support and information to businesses and residents in the Borough and consider complimentary measures which will harness this opportunity.

Parking is an important demand management tool which can regulate car use. The current Borough Parking Policy has not been updated since 2008, restricting opportunities for implementing new parking restrictions which will be key to encouraging a mode shift in the north of the Borough and preventing negative externalities relating to the ULEZ.

Specific attention needs to be given to the existing higher car dependency in the north of the Borough and how this impacts current parking conditions and will be impacted by future interventions. Such as possible environmental impacts related to increased applications for dropped kerbs which may be caused if CPZs are introduced.

CASE STUDY: Workplace Parking Levy (WPL)²⁸

Nottingham's WPL works by both providing funding for major transport infrastructure initiatives and acting as an incentive for employers to manage their workplace parking provision.

The levy requires employers whose work premises have more than 10 employee parking spaces to pay £424 per parking space per year. This is a transport demand management tool and has raised over £61 million for reinvestment in public transport and active travel including extending the tram and Nottingham Station.

²⁸ Nottingham City Council. (2020). Workplace Parking Levy. [online] Available at: <https://www.nottinghamcity.gov.uk/information-for-residents/transport-parking-and-streets/parking-and-permits/workplace-parking-levy/>

CASE STUDY: SFpark San Francisco

SFpark manages parking demand in the city by providing real-time data on parking location and availability matched with demand responsive parking, making parking easier to find and reducing congestion²⁹.

The program was piloted in 2011-2013 at 18,000 spaces, before being fully rolled out in 2018 across 28,000 parking spaces and 14 garages by SFMTA (San Francisco Municipal Transportation Agency).

To monitor parking availability in-ground parking sensors were added in each on-street space to adjust rates up or down to help achieve the target occupancy rate of 60-80%. Parking rates increased by \$0.25 if occupancy exceeded this and reducing by the same amount if it was below this. With a comparable system being implemented in state run off-street parking removing ‘early bird’ parking which encourages peak-hour commuting.

Linking growth areas in the Upper Lea Valley

Connections north east along A110, linking to Meridian Water and Crossrail 2 in the future are currently at capacity as identified in the Stakeholder engagement exercise and Draft Local Plan consultation responses. Improving sustainable transport links or increased services along this corridor should be considered to relieve congestion and accommodate planned growth.

Monitoring

Build on the success of current monitoring schemes to refine interventions, maximise their benefit for further roll out and act as an evidence base to obtain further scheme funding. Specifically monitoring of the BLEN should be undertaken to establish the most successful interventions for possible wider implementation.

Monitoring of Travel Plan outcomes is also recommended to ensure compliance. As outlined previously, evidence suggests that cycle parking provided where planning conditions were in place, rarely meets the standards required (1/164 parking locations met standards required, 40/71 developments provided less spaces than conditioned), therefore, greater oversight of compliance is required.

Bus review and investigate potential for demand-responsive bus services

To increase opportunities for active travel in the Borough a review of existing bus service use should be undertaken to identify where excess demand could be accommodated and the routes which should be prioritised. This would enable S106 achievement. Alongside improvements to accessibility of bus stops to ensure this mode of transport is accessible for all. This is particularly important in the north of the Borough where a significant number of residents do not live within walking distance of an Overground Station.

²⁹ San Francisco Municipal Transportation Agency, 2014. *Sfpark Pilot Project Evaluation Summary*. [online] San Francisco: San Francisco Municipal Transportation Agency, pp.0-11. Available at: http://sfpark.org/wp-content/uploads/2014/06/SFpark_Eval_Summary_2014.pdf

Implementation of demand-responsive services could also supplement the primary bus network in the north of the Borough where the population is generally older and therefore may require a more localised service. Demand responsive bus services are encouraged in the MTS (Proposal 126) in order to make travel by public transport more competitive in areas with lower housing densities and complex journey patterns. However, how these are run needs careful consideration to ensure they complement the existing transport infrastructure and don't reduce bus ridership or active travel journeys. It is understood initial discussions on this are underway with TfL.

Dockless bike

Expansion of existing dockless-cycle hire and electric-cycle hire schemes into the north of the Borough could improve flexibility for cycle trips within the Borough, particularly those which are then used to access stations. Providing electric hire bikes would also improve inclusivity and harness the cycle potential in the north where the steep environment poses an additional challenge for cycle uptake. A wider Borough strategy is required to ensure that these are located in the most appropriate locations with bays provided off the carriageway for parking cycles.

CASE STUDY: Hackney dockless bike bays

In 2019 the Council introduced 70 new dockless bikes bays into the Borough replacing existing car parking spaces. This helps to reduce friction between dockless bike users by ensuring pavements remain fully accessible to all. Installation of the bays was finances in partnership with Beryl Bikes and JUMP which respectively provide standard dockless and e-bikes.

Develop a freight strategy

The Borough has made good progress in progressing ZED to reduce the congestion and environmental impact of freight services. However, there is a need for a more strategic and co-ordinated approach to this to ensure the continued effective running of businesses and minimal impact on the road network. It is understood that consideration is currently being given to introduction of freight consolidation hubs although this is at a very early stage.

CASE STUDY: Sustainable Distribution Centre - Southampton City Council (SCC)³⁰

Southampton City Council partnered with Meachers Global Logistics to develop The Sustainable Distribution Centre (SDC) to consolidate deliveries, reducing congestion and pollution across Southampton. The SDC offers services to both public and private sector to consolidate and therefore reduce the number of logistics trips around the city. A framework agreement for public bodies within a 20-mile radius of the SDC gave the operation critical mass needed for initial success. Therefore, key users include SCC,

³⁰ Southampton.gov.uk. (2019). Case Study 2 - Meachers Global Logistics. [online] Available at: <https://www.southampton.gov.uk/environmental-issues/pollution/green-city/case-study-meachers.aspx>

Southampton Hospital, Southampton University, Solent University and a range of other private and public companies.

The SDC includes freight consolidation, shared storage solutions, reduction in HGV movements, out-of-hours utilisation and consolidated deliveries.

Funding for this was initially provided through the central government Local Sustainable Transport Fund to kick-start the service but there was no commitment to funding from the Council following this.

Increase physical activity across the Borough

The Borough has proposed a number of physical infrastructure interventions aiming to encourage active travel. Additional consideration should be given to community related activities and events which encourage residents to explore their local area. Building on existing positive work by the Behaviour Change team.

CASE STUDY: Ciclovias (multiple locations)

Ciclovias are the periodic closure of streets to motorised traffic, to provide access to open space and active travel for all, ciclovias take place in over 400 cities around the world including Edinburgh, Paris and Mexico City.

Every city can implement ciclovias in their own way at a scale that suits them. The core themes of ciclovias include:

Taking a partnership approach with different agencies, local authorities, health departments, non-profit organisations, private businesses & sponsors, etc.;

Regularity, the more regularly these events are held the greater benefit they bring in terms of community, mode shift and more;

Free and accessible to the whole population;

‘Recreovia’ concept with **free activities** along the ciclovia routes e.g. cycling lessons, aerobics, dance workshops, etc.; and

Volunteering, many of the staff supporting the initiative are volunteers.

Edinburgh became the first UK city to implement Open Streets in 2019, events now take place on one Sunday every month.

CASE STUDY: Beat the Street, Reading³¹

The Beat the Street initiative aims to make active travel fun by using the street as the setting for a real-life game. The initiative took place from April to May for three consecutive years and was funded by Reading Borough Council. People were challenged to see how much they could walk, run, or cycle. By tapping their cards or fobs on “Beat Boxes” located across town, they collect miles which then translate into

³¹ Intelligent Health (2020) Beat the Street. Available from: <https://www.beatthestreet.me/>

rewards. For example, some towns implemented lucky prize draws, team competitions, vouchers to be spent locally, etc.

Intelligent Health helps Local Authorities implement the Beat the Street initiative within their jurisdiction. Sometimes these are funded by the council itself, sometimes by partnering with local stakeholders or National Lottery Funds.

Reducing road traffic accidents

Improving road safety in the Borough for all users is essential to meeting the Mayor's Vision Zero target and reducing barriers to active travel for all users. Reduced accidents also supports the Boroughs existing and proposed work relating to Liveable Neighbourhoods. Further consideration of existing accident hot spots and both localised and Borough wide measures which could tackle this will be required.

5 Recommendations and Next Steps

This report has included the first stage of a review of the transport and related studies, strategies and programmes that have been undertaken to date in the London Borough of Waltham Forest. A review of how the transport network currently operates, constraints within this and strengths and opportunities for further work has been undertaken in order to support development of the new Local Plan.

In summary, the key opportunities for transport in the Borough are outlined below:

- Harnessing north south differences in travel patterns to achieve mode shift;
- Working with neighbouring Boroughs to deliver a holistic transport system;
- Assessment of the effects of proposed growth areas utilising appropriate transport modelling;
- Develop trigger points for transport interventions to leverage funding sources and trial low-cost temporary projects when appropriate;
- Consider the impact of the ULEZ on parking in the north of the Borough and how parking controls can be used to manage car dependence;
- Ensuring sustainable links towards growth areas in the Upper Lea Valley;
- Undertaking monitoring to refine interventions and evaluate success;
- Review existing bus network and potential to introduce demand-responsive bus services;
- Implement a dockless bike sharing strategy across the Borough and consider dockless bike parking areas;
- Develop a freight strategy to manage the impact across the Borough;
- Increase physical activity across the Borough to improve health outcomes; and
- Reduce road traffic incidents.

The next steps required to address these opportunities and develop the evidence base for the Local Plan are set out below alongside project examples.

Update the current review to account for the ongoing Covid-19 pandemic and **complete the proposed Stages 2 to 4** of the Transport Review Study as proposed. Completing the remaining stages would comprise of:

- **Stage 2** which would look to clearly identify all transport-related opportunities and constraints alongside high-level prioritised actions for the short, medium and long term and a detailed gap analysis between committed and planned interventions;
- **Stage 3** which would involve further development of the gap analysis, which would aid the development of trigger points for interventions and possible funding sources; and

- **Stage 4** which would enable the finalisation and delivery of a fully comprehensive Strategic Transport Review report outlining actions and investment opportunities.

Develop a comprehensive **Integrated Transport Strategy** for the Borough, including:

- appropriate levels of **transport modelling**;
- a detailed **parking appraisal** (which would specifically identify opportunities for introducing CPZs in the north of the Borough and updating parking policy); and
- a **freight review** including existing and future conditions.

The Strategy should take into account the impacts of Covid-19 on changing travel patterns, alongside changes to funding and existing proposals such as the Elizabeth Line and the ULEZ. This will provide a solid transport evidence base for the Local Plan and can be used as a baseline to assess future growth scenarios against.

Galway Transport Strategy

Arup were commissioned by Galway City Council, Galway County Council and the National Transport Authority to prepare a Transport Strategy for the Galway Metropolitan Area. This included long-term transport strategy including walking, cycling, bus-priority and rail measures. Arup liaised and co-ordinated with numerous organisations and disciplines to determine the necessary transport interventions across the entire network.

Arup undertook a comprehensive review of Galway's transport network, across all modes, to prepare an evidence-based transport strategy for Galway City and suburbs, for the next 20 to 30 years.

This included modelling and appraisal of the existing highway network within the town and the surrounding suburbs to establish how the most efficient and sustainable use of the limited available road space.

The creation of a network of shared streets and spaces improves the quality of service for public transport, walking and cycling and helps ensure that the city develops in a way which will provide a better living and working mixed-use environment for residents and visitors alike. Arup undertook a thorough baseline review of literature and of the existing network and working with the NTA developed a new city bus network, cycle network and proposed road network intended to remove non-essential traffic from Galway City Centre.

<https://www.arup.com/projects/galway-transport-strategy>

Improve **internal collaboration** through a central data store and the production of a **Dashboard** to collate and store project information to visualise, monitor and manage regeneration programmes across the Borough in an easily accessible location, available to all parts of the Council. This review has revealed that significant good work is being done across the different teams within the Council,

however, there is generally a lack of cross-team collaboration. Bringing together the various workstreams and enhancing collaboration particularly between the Planning, Enjoy Waltham Forest and Climate Commission workstreams will improve outcomes through knowledge sharing. This will allow an understanding of cumulative project impacts within a central data repository.

London Borough of Croydon Programme Delivery Dashboard

Arup's tailor-made, web-based Programme Delivery Dashboard helped London Borough of Croydon to visualise, monitor and manage a complex five-year regeneration programme in an integrated manner. The dashboard captures all of the programme's 169 regeneration projects in an interactive map that allows users to navigate central Croydon and add a range of background layers, such as master plan areas or political boundaries. Drilling down on individual projects is as simple as clicking on a location for an information pop-up.

This provides an intelligent, interactive 'single point of truth' that enables the real-time, intuitive interrogation of programme information and allows the cumulative impact of projects to be easily understood and balanced.

The Programme Delivery Dashboard has facilitated communication across the Olympic scale regeneration programme by sharing and making information transparent. It has engaged and reassured stakeholders, allowed them to bring projects forward and grasp new opportunities, identified areas of infrastructure requiring investment, and helped secure funding commitments.

The dashboard offers the potential to radically transform regeneration schemes influencing all layers of development, from planning (e.g. the cumulative impact of schemes on surrounding areas) through to delivery.

For example, traffic movements to each scheme can be predicted up to five years in advance, enabling the impact on the city centre to be designed and planned for, and mitigated.

<https://www.arup.com/projects/pdd-croydon>

Appendix A

Arup peer review panel

File Note

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Project title LB Waltham Forest Strategic Transport Review

Job number

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File reference

Prepared by Hayley Al-Siaidi

Date

26 February 2020

Subject Arup peer review panel

Introduction

A peer review panel was hosted by Arup 26th February 2020 with current or former residents of LB Waltham Forest, as part of the Strategic Transport Review currently being undertaken by Arup. The workshop was structured around the existing conditions for transport modes in the Borough as well as identifying key areas for improvements. A summary of the key points from the workshop are included below and also presented in Figure 1.

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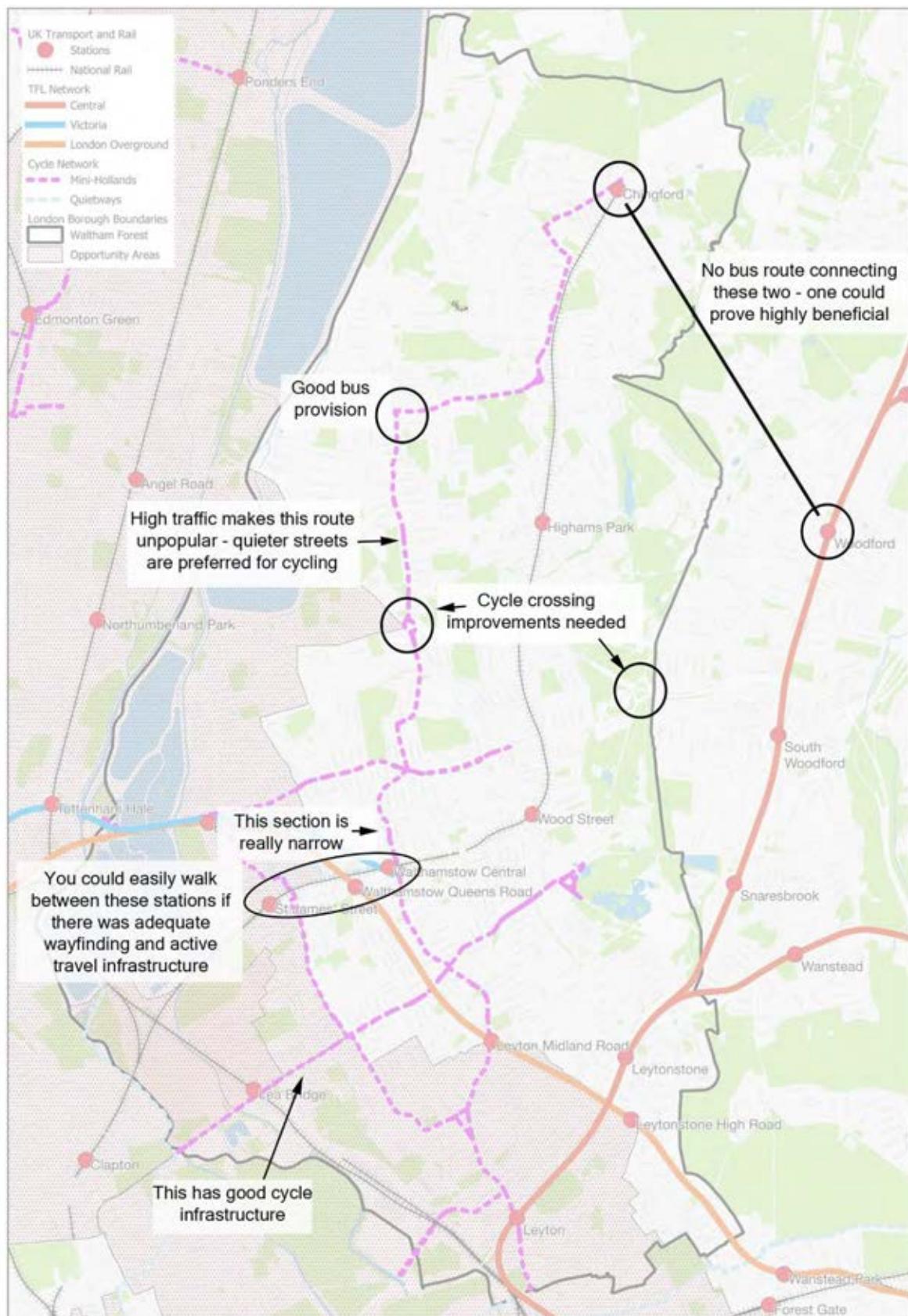


Figure 1 Peer review key issues identified

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Stations

- Large car park provided at Leytonstone Station, some users may park before travelling onward;
- Walthamstow Central has a large car park, as well as paid parking at the adjacent shopping mall, commuters could use this site for all day parking;
- The majority of passengers boarding at Walthamstow Central arrive by bus, lots from national rail and Overground;
- Majority of passengers arriving at Leytonstone station travel by bus, few people observed cycling to station;
- There is a reasonable level of cycle parking currently provided at Walthamstow Central;
- Leyton station is a busy bus corridor and footways around the station are too narrow to allow adequate space for waiting;
- Prioritising improvements at stations (which are mainly in the south) gives the highest benefit due to greater population densities;
- Removing non-terminating buses from stopping at Walthamstow Central is logical for bus routing but inconvenient for transferring passengers, High Street bus stops aren't large enough to accommodate the number of waiting passengers and it is hard for people that are not familiar with the area / the routes, to make their connections. Wayfinding and the provision of information could be improved; and
- Bus stops at Waltham Central station on Hoe Street (south bound) are poorly positioned and the route to the station from these is convoluted, some people cross the road at unofficial points to avoid this which is dangerous as it is at the top of the hill and may not be visible to vehicles.

Bus

- Whipps Cross hospital is relatively well served by buses, less well served from north/middle of the Borough, routes pass through the hospital with multiple stops;
- Travelling to Stratford by bus from north or south Chingford would take a significant amount of time and would be much quicker driving (approximately halving the journey time);
- Travelling to Stratford from south of the Borough most likely to go by bus or Overground, the route is covered by multiple bus routes;
- There is good bus provision at the intersection between the A1009 and the A112; and
- There is no bus route from Chingford to Woodford. Adding one could help connect more people to the Central Line and could potentially reduce pressure from other stations.

Active travel

- Traffic speeds are quite high along A112 section of the mini Holland route, people may rather cycle through alternative north-south routes;
- Quality of cycle infrastructure (paths, segregated or not) are highly variable in quality;

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- Specially in the south, there is better cycle infrastructure. This diminishes towards the north where most cycle routes are on-road;
- Cycle provision from Whips Cross towards Lea Bridge roundabout is good due to heavy infrastructure;
- Low cycling rates towards the north could also be associated with steep topography;
- From the northern parts of the Borough large number of people cycle north towards Epping forest (leisure cycling), not significant level of cycling observed otherwise;
- Key severance – Highams Park level crossing;
- Freebike electric dockless bike sharing operate in the Borough but stops at A406;
- Underpasses under A406 are poor quality and can be intimidating; and
- School catchments are small so shouldn't have significant impact on local traffic.

North/south differences

- North generally more affluent but less well connected, south much better transport links but less affluent;
- In the north of the borough residents are generally driving out north/east/west;
- Second highest increase in house prices in the Borough compared to the rest of the UK;
- Limited public transport connectivity if you want to travel north outside of the borough, causing a preference to drive;
- Parking isn't a significant issue in the north bigger houses tend to have driveways, in places cars parked both sides of the road squeezing road space;
- No connectivity to west due to reservoirs cutting off transport;
- Schools in the Borough are good and a draw for residents;
- Not a significant east-west movement to or from the borough, just passing through – not a priority;
- Borough of culture last year mainly focussed on south of the Borough; and
- Upcoming developments in the north - Walthamstow stadium redevelopment, rebuilding Chingford hall estate.

Opportunities

- Hall farm curve – disused rail line – plans have been in development long-term, uncertainty if this is being brought forward;
- The stations in the south of the Borough are close together but aren't clearly linked. All have ample cycle stores and lockers, therefore there is an opportunity to improve way-finding and active travel infrastructure between these which would make cycling and walking more viable;

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- Installing an additional entrance at the eastern end of Leyton station would increase the stations accessibility from residential areas;
- Cycle connectivity across the Borough doesn't link up;
- Access to stations by bus and active travel in the north of the Borough could be improved to improve wider connectivity;
- Connecting north of borough to the Central Line would take pressure off other services and gives access into central London and out towards Epping; and
- Ruckholt Road station possibly coming forward, through Leyton mills – makes sense walkable route, and would bring significant benefits.

Servicing and ULEZ

- Servicing is not perceived as a significant problem for the area;
- Lots of residents already using click and collect drop-off services. There are always queues at these points;
- Cargo bike delivery service is operational in the south;
- ULEZ would be challenging to implement in the north of the Borough due to reliance on car, ULEZ only in the south would be logical and follow existing pattern;
- There is a general lack of understanding of the ULEZ and the vehicles this will impact; and
- Not enough information has been provided by the Council to inform choices around ULEZ. Making information about this more accessible should be a high priority.

DOCUMENT CHECKING (not mandatory for File Note)

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Signature			

Appendix B

Waltham Forest Parking Map

