



LB Enfield

Local Plan 2019-2041

Transport Assessment





LB Enfield

Local Plan 2019-2041

Transport Assessment

Type of document (version) Public

Project no. 70081462

Date: March 2024

WSP

WSP House
70 Chancery Lane
London
WC2A 1AF

Phone: +44 20 7314 5000

WSP.com



Quality control

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	DRAFT for comments	DRAFT 2	Draft 3	Final
Date	05/03/2024	06/03/2024	06/03/2024	08/03/2024
Prepared by	MF, AR	MF, AR	MF, AR	MF, AR
Signature				
Checked by	RT	RT	RT	RT
Signature				
Authorised by	RT	RT	RT	RT
Signature				
Project number	70081462	70081462	70081462	70081462
Report number				
File reference				



Contents

Executive summary

1	Introduction	1
<hr/>		
1.1	Introduction	1
1.2	Purpose and structure	1
1.3	Duty to Cooperate	2
2	Policy Context	3
<hr/>		
2.1	Review	3
2.2	National Planning Policy Framework	3
2.3	London Plan	5
2.4	Mayor's Transport Strategy	7
3	Baseline Assessment:	9
<hr/>		
3.1	Methodology and data sources	9
3.3	Public Transport and Accessibility	11
3.4	Highway Network and Road Safety	18
3.5	Walking and Cycling	21
3.6	Baseline context gap identification and capacity assessment	24
3.7	Future planned provision	25
4	Forecasting and Modelling	28
<hr/>		
4.1	Modelling process	28
4.2	Forecast	28
4.3	Modal Shift	31
5	Transportation Needs Assessment	33
<hr/>		
5.1	Capacity Assessment	33



5.2	Active travel	33
5.3	Highways	34
	Capacity Assessment Screening	34
	Strategic Road Network	36
	Transport for London Road Network (TLRN)	40
	Local Road Network	41
5.5	Railways, TfL London Underground and Overground	42
5.6	Buses	46
6	Mitigations and Monitoring	49
<hr/>		
6.1	Highways	49
	Strategic Road Network	49
	Transport for London Road Network	49
	Local Road Network	49
6.2	Railways, TfL London Underground and Overground	50
6.3	Buses	50
6.4	Active Travel	52
7	Conclusion	53
<hr/>		

Tables

Table 4-1 Enfield Growth (Local Plan and beyond plan)	28
Table 4-2 Enfield daily travel demand forecast (MoTioN model It7 version)	31
Table 5-1 M25 Junction 24 and 25 LoHAM model assessment summary	38
Table 5-2 LoHAM Future Baseline base link Volume over Capacity (90% plus) Peak hours	40
Table 5-3 LoHAM Local Plan base link Volume over Capacity (90% plus) Peak hours	41

Figures

Figure 3-1 Enfield's Underground, Oveground and Rail Network	11
Figure 3-2 Enfield Daytime bus service coverage	14
Figure 3-3 Enfield Daytime bus service frequency	15
Figure 3-4 Enfield Night-time bus service coverage	16
Figure 3-5 - PTAL, London Borough of Enfield (source: WebCAT)	17
Figure 3-6 - Enfield Highways Network	19
Figure 3-7 - Road collision severity (2017-2021 data)	20
Figure 3-8 - Enfield's Local Centres Walking Accessibilty	21
Figure 3-9 - Enfield's Cycle Network	22
Figure 3-10 - Map of Enfield's Cycling Accessibility	23
Figure 4-1 Local Plan housing growth map	29
Figure 4-2 Local Plan employment growth map	30
Figure 4-3 Enfield housing led site allocations with 500+ units multi-modal travel forecast (MoTioN model)	32
Figure 4-4 Enfield key employment site allocations multi-modal travel forecast (MoTioN model)	32
Figure 5-1 - Highway Assessment Summary - Junction Impacts Morning Peak Hour	35
Figure 5-2 - Highway Assessment Summary - Junction Impacts Evening Peak Hour	36
Figure 5-3 Rail, Lu and LO Future Baseline AM crowding level (source: Railplan)	43
Figure 5-4 Rail, Lu and LO Future Baseline PM crowding level (source: Railplan)	44
Figure 5-5 Rail, Lu and LO Local Plan AM crowding level (source: Railplan)	44



Figure 5-6 Rail, Lu and LO Local Plan PM crowding level (source: Railplan)	45
Figure 5-7 Bus patronage changes AM (source: Railplan)	46
Figure 5-8 Bus patronage changes PM (source: Railplan)	47



Executive summary

This report provides an overview of the Transport Assessment review carried out in relation to the Enfield Local Plan (2019-2041). The document evidences the technical assessment followed, methodology, consultation, and reports on the outcomes of the baseline context review, and the assessment of the likely impact of the Local Plan. The Transport Assessment outlines policy alignment, context and capacity assessment based on strategic modelling outputs.

Overall, the Local Plan sets a target for 33,604 homes to be delivered over the next 15 years, in line with GLA targets. The Transport Assessment of the Local Plan growth has found the Enfield network is largely fit for purpose provided the Local Plan policies, Mayor Transport Strategy and NPPF sustainable transport objectives can be achieved.

On balance the committed and planned future infrastructure and transport programmes described in this review, alongside the continued Council investment in sustainable transport initiatives such as new sustainable transport infrastructure, road safety mitigation measures, noise and air quality management and public transport improvements working alongside TfL and Network Rail will provide the basis to facilitate a modal shift and safe operation of the transport network, supporting the Local Plan growth.

Contact name Rea Turohan

Contact details +44 020 30572295 | rea.turohan@wsp.com

1

Introduction



1 Introduction

1.1 Introduction

- 1.1.1. Transport plays a pivotal role in shaping the sustainable development and liveability of our communities, aligning closely with the principles and requirements outlined in the UK National Planning Policy Framework (NPPF) . As part of the Local Plan making process, this Transport Assessment report serves as a critical tool for ensuring compliance with national planning policies and guidance while addressing local transportation needs and challenges.
- 1.1.2. The purpose of this document is to establish a robust and evidence-based framework for the formulation of transportation policies and proposals within the Local Plan. It seeks to align with the strategic objectives and core principles set forth in the NPPF and PPG, plus the regional policy in the London Plan and Mayor’s Transport Strategy, emphasising the importance of sustainable transport, accessibility, and integration with land use planning.
- 1.1.3. Within the scope of this document, comprehensive analysis and assessment of transport issues have been outlined, covering key aspects such as transport network infrastructure, public transport networks, active travel facilities, and accessibility considerations. The document is structured to ensure alignment between national policy objectives and local planning initiatives.

1.2 Purpose and structure

- 1.2.1. The key objectives of this assessment are to:
 - Evaluate the existing transport networks in accordance with the criteria and indicators specified in the policy, identifying areas of congestion, capacity constraints, and deficiencies.
 - Apply industry recognised forecasting methodologies and assessment techniques recommended to predict future travel patterns and anticipate the impact of development on the transport networks.
 - Develop strategic interventions and policies that reflect the principles of sustainable transportation, integration, and accessibility outlined in the NPPF and PPG, fostering modal shift and reducing dependency on private car travel.
 - Conduct impact assessments considering environmental, social, and economic factors in the formulation of transport proposals and policies.
 - Establish mechanisms for monitoring and reviewing outcomes, consistent with the Local Plan policy objectives, to ensure the ongoing effectiveness and relevance of transport policies and interventions.
- 1.2.2. The document is structured as follows:
 - Chapter 1 - Introduction
 - Chapter 2 - Policy Context

- Chapter 3 - Baseline Assessment
- Chapter 4 - Forecasting and Modelling
- Chapter 5 - Transport Needs Assessment
- Chapter 6 – Mitigations and Monitoring
- Chapter 7 - Conclusion

1.3 Duty to Cooperate

- 1.3.1. Throughout the preparation of this evidence document, active engagement with stakeholders has been conducted and stakeholders' input has been instrumental in shaping transport policies and proposals that reflect local needs.
- 1.3.2. Summary of Duty to Cooperate engagement as follows:
- April 2021 – TfL, National Highways, Network Rail and adjoining boroughs – Introduction to the Local Plan, Assessment Approach and Baseline review.
 - July to September 2021 – TfL, National Highways, Network Rail and adjoining boroughs – Update on programme and engagement, assessment progress, Regulation 18 Plan approach (emerging spatial strategies, placemaking areas, growth typologies), policies.
 - June to September 2021 – Draft Local Plan public consultation.
 - October 2022 to January 2023 – TfL, National Highways and Network Rail – Forecast assessment assumptions.
 - July to September 2023 – TfL, National Highways, Network Rail and wider adjoining planning and highway authorities – Summary of Local Plan consultations, Local Plan update and Transport Assessment outcomes, follow on actions.
- 1.3.3. A Statement of Common Ground is presented alongside the Transport Assessment as evidence supporting the Local Plan.

2 Policy Context

2.1 Review

2.1.1. Below is a summary of pertinent national and regional transport policies, including guidance from the National Planning Policy Framework (NPPF), London Plan and other relevant planning documents.

2.2 National Planning Policy Framework

2.2.1. Several paragraphs within the NPPF are of relevance to the transportation considerations in the formulation of the Local Plan, given their emphasis on achieving sustainable development, transportation planning, and integration with land use policies.

2.2.2. Here are some key paragraphs and their significance:

- Paragraph 8: Achieving Sustainable Development

Paragraph 8 states that *“achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways”*: an economic objective, a social objective and an environmental objective.

- Paragraph 11: Presumption in favour of sustainable development

Paragraph 11 states that *“plans and decisions should apply a presumption in favour of sustainable development. For plan-making this means that:*

- a) *all plans should promote a sustainable pattern of development that seeks to: meet the development needs of their area; align growth and infrastructure; improve the environment; mitigate climate change (including by making effective use of land in urban areas) and adapt to its effects;*
- b) *strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas, unless:*
 - i. *the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan area; or*
 - ii. *any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.”*

- Paragraph 15 and 16: Plan-making

Paragraph 15 outlines the priorities of a plan-led planning system, plans should be up-to-date, set a vision, provide a framework for housing, economic, social and environmental priorities and be a platform for local people to shape their surroundings.

Paragraph 16 states *“Plans should:*

- a) be prepared with the objective of contributing to the achievement of sustainable development;*
- b) be prepared positively, in a way that is aspirational but deliverable;*
- c) be shaped by early, proportionate and effective engagement between planmakers and communities, local organisations, businesses, infrastructure providers and operators and statutory consultees;*
- d) contain policies that are clearly written and unambiguous, so it is evident how a decision maker should react to development proposals;*
- e) be accessible through the use of digital tools to assist public involvement and policy presentation; and*
- f) serve a clear purpose, avoiding unnecessary duplication of policies that apply to a particular area (including policies in this Framework, where relevant).”*

■ Paragraph 17, 18 and 19: The plan-making framework

Paragraph 17 states that *“the development plan must include strategic policies”* to address local authorities’ priorities.

Paragraph 18 introduced the development plans as joint or individual local plans or/ or spatial development strategies produced by an elected Mayor or combined authority.

Paragraph 19 clarifies that the development plan for an area comprises both strategic and non-strategic policies which are in force at a particular time.

■ Paragraph 20 to 23: Strategic policies

Paragraphs 20 to 23 outline the strategic policy function, these should make provision for housing, infrastructure, community facilities and conservation and enhancement of the natural built and historic environment. Strategic policies should have minimum period of 15 years look-ahead, should be supported by diagrams, designation and land use allocation policies maps.

■ Paragraph 24 to 27: Maintaining effective cooperation.

Paragraphs 24 to 27 reinforce the duty to cooperate with local planning authorities, county councils and prescribed bodies on strategic and cross boundary matters. In particular, joint working is encouraged to identify additional infrastructure and development needs.

■ Paragraph 28, 29 and 30: Non-strategic policies

Paragraphs 28, 29 and 30 introduces the scope of non-strategic policies and neighbourhood planning. Non-strategic policies should be used to set more detailed policies for specific areas. Neighbourhood planning gives communities the power to develop a shared vision for an area, whilst the neighbourhood plan should not seek

to promote less development than set in strategic policies, once adopted takes precedence over non-strategic local plan policies.

- Paragraph 31, 32 and 33: Preparing and reviewing plans

Paragraph 31 states:” *The preparation and review of all policies should be underpinned by relevant and up-to-date evidence. This should be adequate and proportionate, focused tightly on supporting and justifying the policies concerned, and take into account relevant market signals.*”

Paragraphs 32 and 33 set the timescale for local plan and spatial policies review to five years, reviews should account for local circumstances as well as policy changes. The evidence supporting the local plans should be informed by a sustainability appraisal, addressing economic, social and environmental objectives. Significant adverse effects should be avoided or mitigated.

- Paragraphs 108 to 113: Promoting sustainable transport.

Paragraphs 108 to 113 highlight the importance of promoting sustainable transport through early consideration of transport issues in planning and development proposals. It highlights the need to address potential impacts on transport networks, utilise existing or proposed transport infrastructure efficiently, and identify opportunities to promote walking, cycling, and public transport.

The planning system should focus significant development on sustainable locations to reduce congestion, emissions, and improve air quality and public health. Planning policies should support mixed-use areas, involve local authorities and transport providers, protect critical infrastructure sites, and provide for well-designed walking and cycling networks.

Additionally, policies should consider local parking standards based on accessibility, public transport availability, and car ownership levels, with maximum parking standards justified by clear necessity. Adequate overnight lorry parking facilities are also emphasized to reduce the risk of parking issues in locations lacking proper facilities.

- 2.2.3. The NPPF provides clear guidance and requirements for integrating transportation considerations into the process of formulating the Local Plan. By adhering to these principles and policies, local planning authorities can promote sustainable transportation solutions, create accessible and well-connected communities, and contribute to the overall objectives of sustainable development.

2.3 London Plan

- 2.3.1. The London Plan emphasises creating a sustainable, accessible, and integrated transportation network that supports the city's growth and enhances the quality of life for all Londoners. The vision prioritises active travel, public transportation, and measures to reduce car dependency and air pollution.

- 2.3.2. The London Plan promotes walking, cycling, and public transport as the preferred modes of travel in the city. It seeks to increase the share of trips made by sustainable modes and reduce reliance on private car travel, particularly for shorter journeys.
- 2.3.3. The plan prioritises improving public transport accessibility and connectivity, ensuring that all Londoners have convenient access to high-quality public transportation services. It emphasizes the need to invest in public transport infrastructure, enhance service frequencies, and improve accessibility for people with disabilities.
- 2.3.4. The London Plan includes policies to promote the development of safe, attractive, and interconnected walking and cycling networks across the city. It encourages the provision of dedicated cycle lanes, pedestrian-friendly streets, and secure bicycle parking facilities to encourage active travel and enhance road safety.
- 2.3.5. The plan addresses the management of road space and traffic congestion, emphasising the need to prioritise sustainable modes of transport over private car travel. It supports measures such as road pricing, congestion charging, and low-traffic neighbourhoods to manage traffic volumes, reduce congestion, and improve air quality.
- 2.3.6. The London Plan highlights the importance of integrating transportation and land use planning to create sustainable communities and reduce the need for car travel. It encourages the development of mixed-use neighbourhoods with good access to public transportation, amenities, and employment opportunities.
- 2.3.7. The plan includes policies to promote environmental sustainability and improve air quality within Greater London. It supports measures to reduce vehicle emissions, increase the uptake of electric vehicles, and create cleaner and greener streets for all Londoners.
- 2.3.8. Overall, the Transport chapter of the London Plan provides a comprehensive framework for shaping transportation policies, investments, and initiatives across Greater London. It reflects the city's commitment to promoting sustainable modes of transport, enhancing public transportation services, and creating healthier, more liveable communities for residents and visitors alike.
- 2.3.9. The 2021 London Plan includes several policies specifically related to transport, aimed at shaping the transportation network, promoting sustainable travel modes, and integrating transportation with land use planning. Here are some key transport-related policies from the 2021 London Plan:
- Policy T1 Strategic approach to transport
 - Policy T2 Healthy Streets
 - Policy T3 Transport capacity, connectivity and safeguarding
 - Policy T4 Assessing and mitigating transport impacts
 - Policy T5 Cycling
 - Policy T6 Car parking
 - Policy T6.1 Residential parking
 - Policy T6.2 Office Parking

- Policy T6.3 Retail parking
- Policy T6.4 Hotel and leisure uses parking
- Policy T6.5 Non-residential disabled persons parking
- Policy T7 Deliveries, servicing and construction
- Policy T8 Aviation
- Policy T9 Funding transport infrastructure through planning

- 2.3.10. The London Plan 2021 advocates for ‘*good growth - growth that is socially and economically inclusive and environmentally sustainable*’. Through its transport specific policy objectives, the London Plan promotes sustainable travel and aims to achieve 80 per cent of London travel by public and active travel modes by 2041. The policy objectives aim to promote public transport schemes, with a promise to work with stakeholders to deliver schemes and safeguard land for future public transport improvements, as well promote active travel by securing walking and cycling infrastructure and by making the network safer reducing car travel and fossil fuel vehicle emissions.
- 2.3.11. The London Plan references transport specific schemes (Table 10.1 London Plan 2021), that will contribute to achieve the objectives set targeting Healthy Streets and active travel projects.
- 2.3.12. The London Plan is backed by the Mayor’s Transport Strategy (TfL, 2018) which relies on the Healthy Streets approach, thus focusing on three principles:
- *‘Healthy Streets and healthy people – streets make up 80 per cent of London’s public spaces making them Healthy Streets will improve the quality of life for everyone in London.*
 - *A good public transport experience - public transport is the most efficient way for people to travel distances that are too long to walk or cycle. A seamless, ‘whole-journey’ experience will provide an attractive alternative to using the car.*
 - *New homes and jobs - London needs 65,000 new homes every year to meet demand, plus around 1.3 million more jobs by 2041. We have an opportunity to reshape London and make sure it grows in a way that improves the quality of life for everyone.’*

2.4 Mayor’s Transport Strategy

- 2.4.1. Overall, the 2018 London Mayor's Transport Strategy sets out a bold vision and a comprehensive set of policies to transform London's transportation network, promote sustainable travel modes, and improve the quality of life for all Londoners.
- 2.4.2. The Mayor’s Transport Strategy is supported by Action Plans: the Bus Action Plan, the Cycling Action Plan 2, the Walking and Leisure Walking Action Plan, the Freight and Servicing Action Plan and the Vision Zero Action Plan and progress reports.
- 2.4.3. In the 2018 London Mayor's Transport Strategy, several references are made to outer London boroughs, recognizing their unique transportation needs and priorities. Here are some specific references to outer London boroughs in the strategy.

- Improving Public Transport Accessibility

The strategy acknowledges that outer London boroughs often have lower levels of public transport accessibility compared to central and inner London areas. It highlights the importance of improving public transport services and connectivity in outer London to enhance accessibility and promote sustainable travel options for residents.

- Investment in Cycling Infrastructure

The strategy recognises the potential for cycling to play a greater role in outer London as a mode of transport for both commuting and leisure trips. It calls for investment in cycling infrastructure, including segregated cycle lanes, cycle parking facilities, and traffic-calmed streets, to encourage more people to cycle in outer London boroughs.

- Addressing Traffic Congestion

The strategy acknowledges the challenges of traffic congestion in outer London boroughs, which can impact journey times, air quality, and road safety. It supports measures to manage traffic volumes, improve traffic flow, and reduce congestion in outer London through initiatives such as intelligent traffic management systems and congestion charging schemes.

- Promoting Sustainable Travel Modes

The strategy emphasises the importance of promoting sustainable travel modes, including walking, cycling, and public transport, in outer London boroughs. It encourages the development of safe and attractive walking routes, cycling networks, and public transportation services to provide residents with viable alternatives to car travel.

- Integrated Transport and Land Use Planning

The strategy highlights the need for integrated transport and land use planning in outer London boroughs to create well-connected and sustainable communities. It calls for the development of mixed-use developments, employment hubs, and recreational facilities around public transportation nodes to reduce the need for car travel and enhance local amenities.

- Community Engagement and Participation

The strategy recognises the importance of engaging with communities and stakeholders in outer London boroughs to understand their transportation needs and preferences. It emphasizes the importance of consultation and collaboration with residents, businesses, and local authorities in shaping transportation policies and initiatives that reflect the diverse needs of outer London communities.

2.4.4. Overall, the 2018 London Mayor's Transport Strategy acknowledges the specific challenges and opportunities facing outer London boroughs and outlines a range of policies and initiatives to improve transportation accessibility, promote sustainable travel modes, and enhance the quality of life for residents across the city's diverse neighbourhoods.

3 Baseline Assessment:

3.1 Methodology and data sources

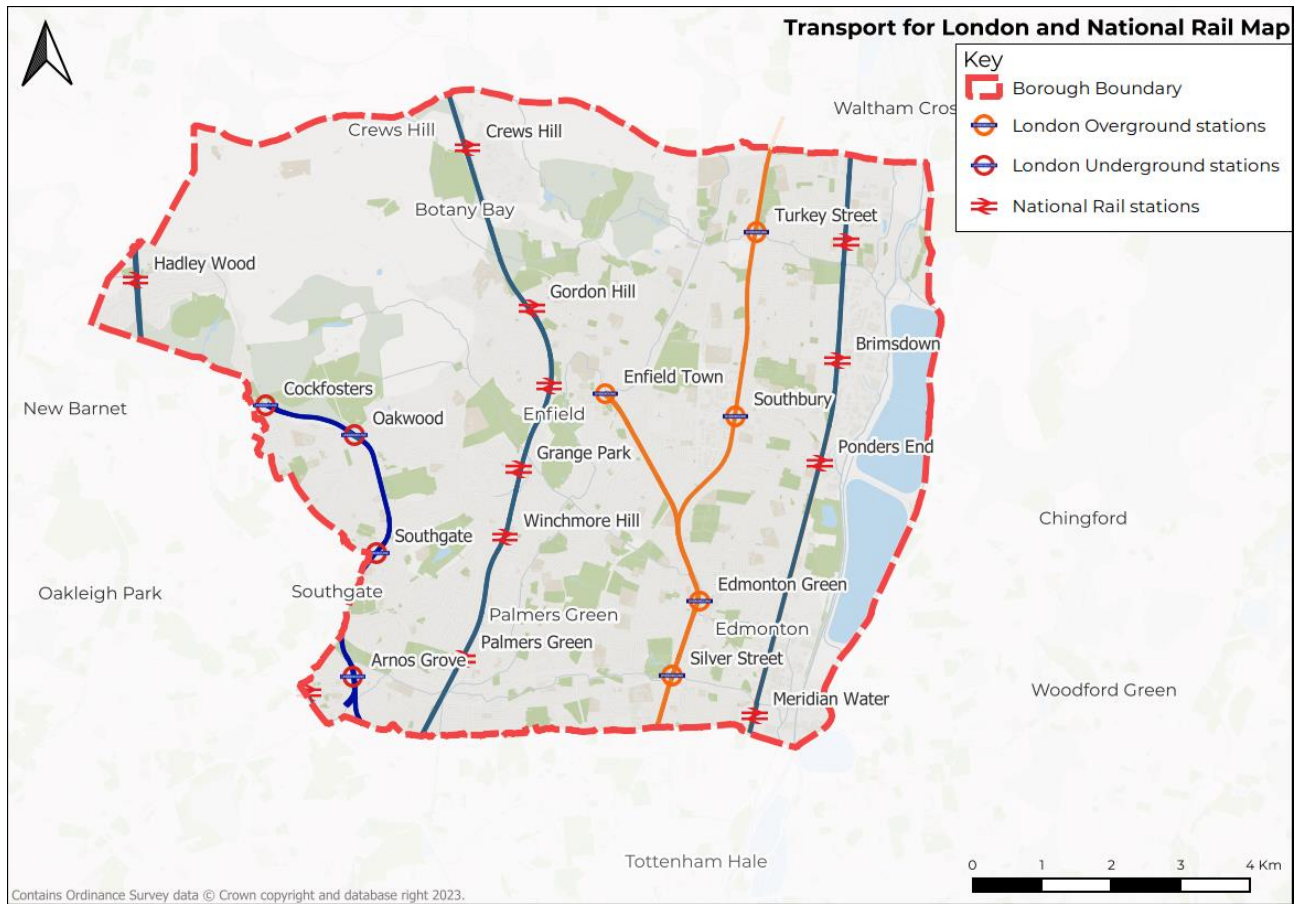
- 3.1.1. A benchmarking of the current (baseline) transport network is necessary to establish opportunities and constraints and set the proposed Local Plan growth in context. An overview and assessment of the transport network has been undertaken both quantitatively, to ascertain public transport and highway capacity implications, and qualitatively to look at broader network coverage, accessibility, active travel offering and potential for mode shift.
- 3.1.2. The quantitative review of the potential impacts and testing of associated mitigation effectiveness on the highways and public transport networks was undertaken using the TfL strategic modelling suite including:
- MoTioN, a Multi-modal strategic transport ‘mode of travel’ in London model.
 - LoHAM, a strategic London-wide highway assignment model.
 - Railplan, a public transport strategic model.
- 3.1.3. The transport model analysis included the established industry standard approach steps as follows:
- Base year model scenario
Establish the ‘fitness for purpose’ of the models through review of the baseline scenario and discussion with TfL and the local highway authority. Where there is risk that the model may not be realistic or sensible due to an error of the parameters, limitation or extent to which the model represents human behaviour it is essential to check that the model produces credible outputs by comparing these with observed data. Following the Base year model review, a local model validation was carried out, including changes to the model parameters were suitable and, in the case of the LoHAM model including the re-validation of flows through a new local traffic count dataset.
 - Future year baseline (Future baseline) scenario
Build a future scenario representing the likely evolution of the current state “without the Local Plan” by capturing future committed development and infrastructure completions only and growth outside of the Borough.
 - Local Plan (Regulation 19 and beyond) future scenario
To assess the impact of the Local Plan growth by ways of comparison with the Future year baseline scenario. The Local Plan scenario includes the Future Baseline *plus* the Local Plan forecast.
- 3.1.4. The modelling process and methodology have been discussed and agreed with TfL who audited the process, National Highways and Network Rail. The process is captured in technical notes and reports published under separate cover.

- 3.1.5. The impacts and mitigations required, documented at the end of this note, have been determined through the comparison of the future baseline and Local Plan scenarios and the outcome of the qualitative review.
- 3.1.6. In order to establish the baseline transport network coverage and operation a comprehensive review of data was carried out, drawing from available sources including:
- TfL strategic modelling suite (MoTioN, Railplan, LoHAM)
 - TfL WebCAT Public Transport Accessibility Level (<https://tfl.gov.uk/info-for/urban-planning-and-construction/planning-with-webcat/webcat> accessed July 2023)
 - London Datastore – Greater London Authority ([London Datastore – Greater London Authority](#) accessed July 2023)
 - TfL Bus Action Plan (<https://content.tfl.gov.uk/bus-action-plan.pdf> accessed August 2023)
 - TfL Cycling and Walking Action Plans (<https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/encouraging-cycling-and-walking> accessed September 2023)
 - Basemap DataCutter, Bus Route Public Transport Lines dataset Wednesday AM period (07:00-09:00) (<https://datacutter.basemap.co.uk/DataCutter> accessed July 2023)
 - DfT Road Safety Data 2022 (<https://www.data.gov.uk/dataset/cb7ae6f0-4be6-4935-9277-47e5ce24a11f/road-safety-data> accessed July 2023)
 - National Highways Delivery Plan 2020-2025 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910866/5-year_Delivery_Plan_2020-2025_FINAL.pdf accessed July 2023)

3.3 Public Transport and Accessibility

- 3.3.1. Public transport accounts for 20 per cent of travel in the borough¹. The coverage and accessibility of public transport across the borough varies significantly, an overview is presented following on.
- 3.3.2. Figure 3-1 shows the London Underground, Overground and rail network in Enfield. Considering 40 per cent of Enfield is green belt land, the borough is reasonably well served by the rail network albeit mostly in a north-south direction. Enfield is served by the London Underground Piccadilly Line, London Overground and two national rail lines, providing connections into central and south London (via Liverpool Street and Moorgate) and outer London connections to Hertford, Stevenage, and toward Stansted Airport.

Figure 3-1 Enfield's Underground, Oveground and Rail Network



¹ https://www.enfield.gov.uk/data/assets/pdf_file/0019/4825/enfield-transport-plan-2019-2041-roads.pdf, page 34

London Underground

- 3.3.3. The western extent of the Borough of Enfield is served by the Piccadilly Line. There are a total of four Piccadilly stations in Enfield, these are Arnos Grove, Southgate, Oakwood and Cockfosters which is where the Piccadilly Line terminates. Oakwood and Cockfosters are step-free accessible stations. The Piccadilly Line provides connections into the centre of London via Kings Cross St Pancras and provides east to west connections terminating at Heathrow and Uxbridge in the outer borough of Hillingdon.
- 3.3.4. Service frequency is from between six trains an hour, this rises to 24 trains an hour during peak hours. This is expected to rise to 27 trains per hour in mid-2027 with the introduction of a new fleet of trains, which will equate to one train every 135 seconds.
- 3.3.5. The Piccadilly Line does not intersect with any other tube stations within the borough; the nearest intersection point is at Finsbury Park Underground station, where the line meets the Victoria Line, providing connections to Brixton in the south and Walthamstow in the north-east.

London Overground

- 3.3.6. The central-eastern extent of Enfield is served by the London Overground, which serves Silver Street and Edmonton Green (step-free access) before splitting into branches: one serving Bush Hill Park and Enfield Town (both step-free access) and the other Southbury, Turkey Street and Cheshunt stations. Southbound, the London Overground provides an important interchange with the Victoria Line at Seven Sisters together with a direct service to Liverpool Street.
- 3.3.7. Edmonton Green service frequency is two to six trains per hour, both south and northbound, Monday-Friday, reaching a maximum of six trains during morning and evening peak. On weekends service frequency is slightly reduced, with around three to four trains per hour.
- 3.3.8. After the line branches off, two services per hour continue to Cheshunt and the rest terminate at Enfield Town.

Great Northern Line

- 3.3.9. National Rail also serves the borough north to south. There are six rail stations in the borough which are served by the Great Northern Line. These stations are Palmers Green, Winchmore Hill, Grange Park, Enfield Chase, Gordon Hill and Crews Hill.
- 3.3.10. Enfield's stations provide southbound journeys to Moorgate (41 minutes from Crews Hill and 28 minutes from Palmers Green) and northbound services to Stevenage. Monday to Sunday the stations receive two trains an hour in both directions, reflecting a regular service pattern.
- 3.3.11. The Great Northern Line also stops at New Southgate and Hadley Wood (step-free access), on a separate Moorgate to Welwyn Garden City.

West Anglia Main Line

- 3.3.12. Greater Anglia operates services along the West Anglia Main Line which serves the very eastern extent of Enfield. There are four stations in the borough boundary these are Meridian Water, Ponders End, Brimsdown and Enfield Lock all of these stations are step-free access. These provide southbound connections to Stratford and London Liverpool Street and northbound connections towards Stanstead Airport.

London Buses

- 3.3.13. Figure 3-2 shows that the borough is reasonably well served by daytime bus services. Each of the five local centres are served by multiple bus routes which provide connections between local centres and transport hubs within the borough as well as journeys to the neighbouring boroughs of Barnet, Haringey and Waltham Forest. All of Enfield's train stations, aside from Crews Hill Station, are served by a bus route providing opportunities for onward travel by public transport.
- 3.3.14. Most of the boroughs bus corridors receive between eight and 24 buses per hour. There is a more regular service through Enfield, Edmonton, Palmers Green and Southgate town centres which receive between 24-120 buses per hour.
- 3.3.15. Figure 3-3 shows the daytime bus frequency in the borough. Bus routes that provide connections between the local centres receive a high number of buses per hour (24-120 buses). Edmonton Green town centre to the train station and a small area around Enfield Chase receive the highest number of buses within the borough (over 120 per hour). These local centres are likely to be points when multiple bus routes converge, thus have the highest service.
- 3.3.16. The north-west of the borough appears to have low bus service provision. However, both A roads, Stag Hill and The Ridgeway, are bus routes which receive 8-24 buses per hour; the 298, 692, 699 (school bus route) and 610 Dragonfly route along Stag Hill and the 355 and the 356 (school bus) route along The Ridgeway. The area between Stag Hill and The Ridgeway is within Enfield's Green Belt. Current land use (very few residential plots) has little requirement for bus services within the Green Belt.
- 3.3.17. There are a few areas that are poorly served by the bus network, receiving a maximum of eight buses per hour. Crews Hill and Brimsdown are two areas that are not often frequented by bus services, and this impacts public transport accessibility as shown in Figure 3-5.
- 3.3.18. There is currently no bus service provision north of Crews Hill to and beyond the M25. This area is also currently part of Enfield's Green Belt so there is little requirement for bus services at present.

3.3.19. Figure 3-4 shows Enfield’s night and 24-hour bus services network coverage. These services primarily provide north-south connections through the borough. Only one route, the N279, extends north beyond Enfield Town terminating at Waltham Cross. Enfield’s Green Belt does not receive any night-time bus service. The town centres all receive 24-hour buses but there is little bus service offering connections between local centres.

Figure 3-2 Enfield Daytime bus service coverage

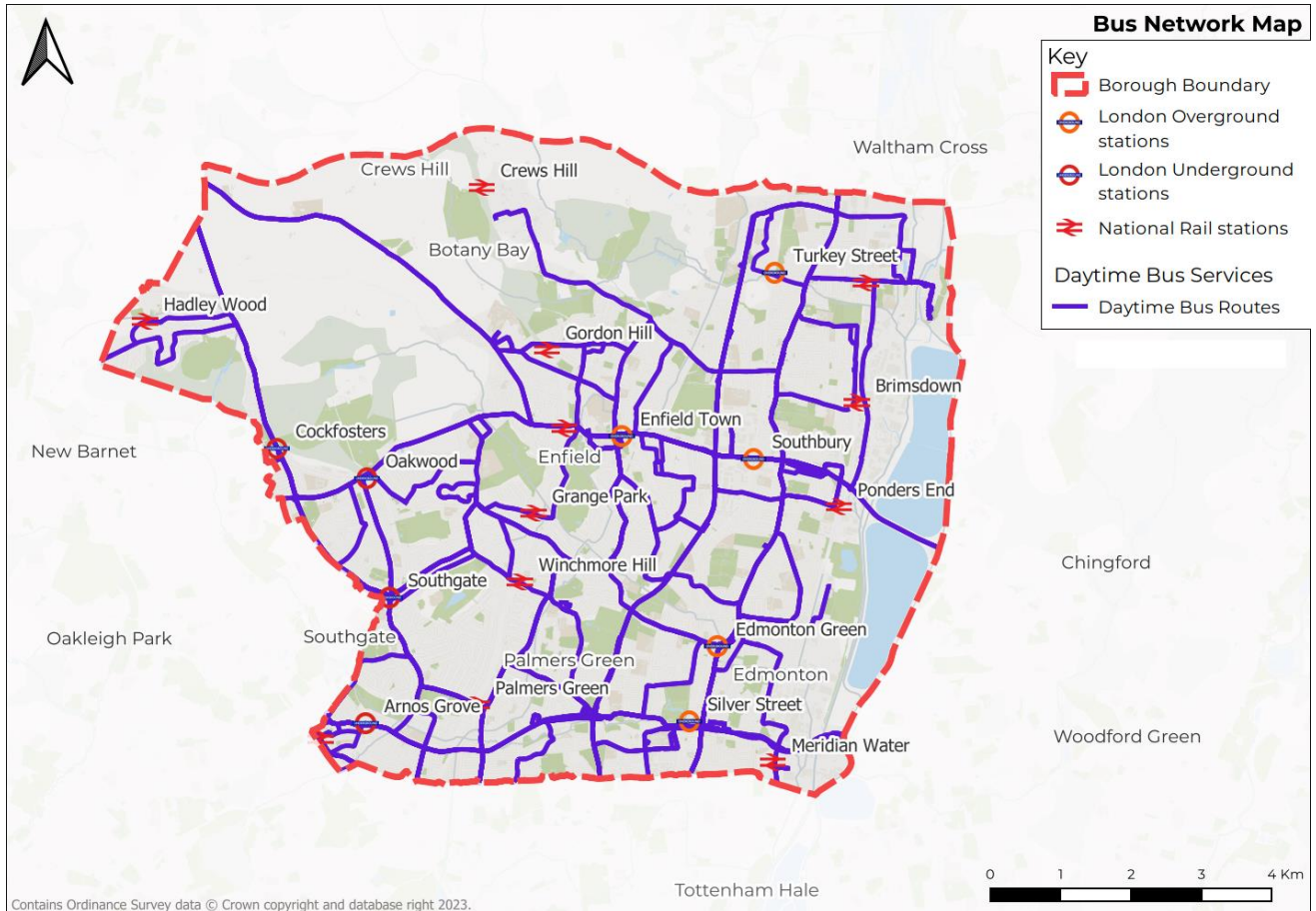


Figure 3-3 Enfield Daytime bus service frequency

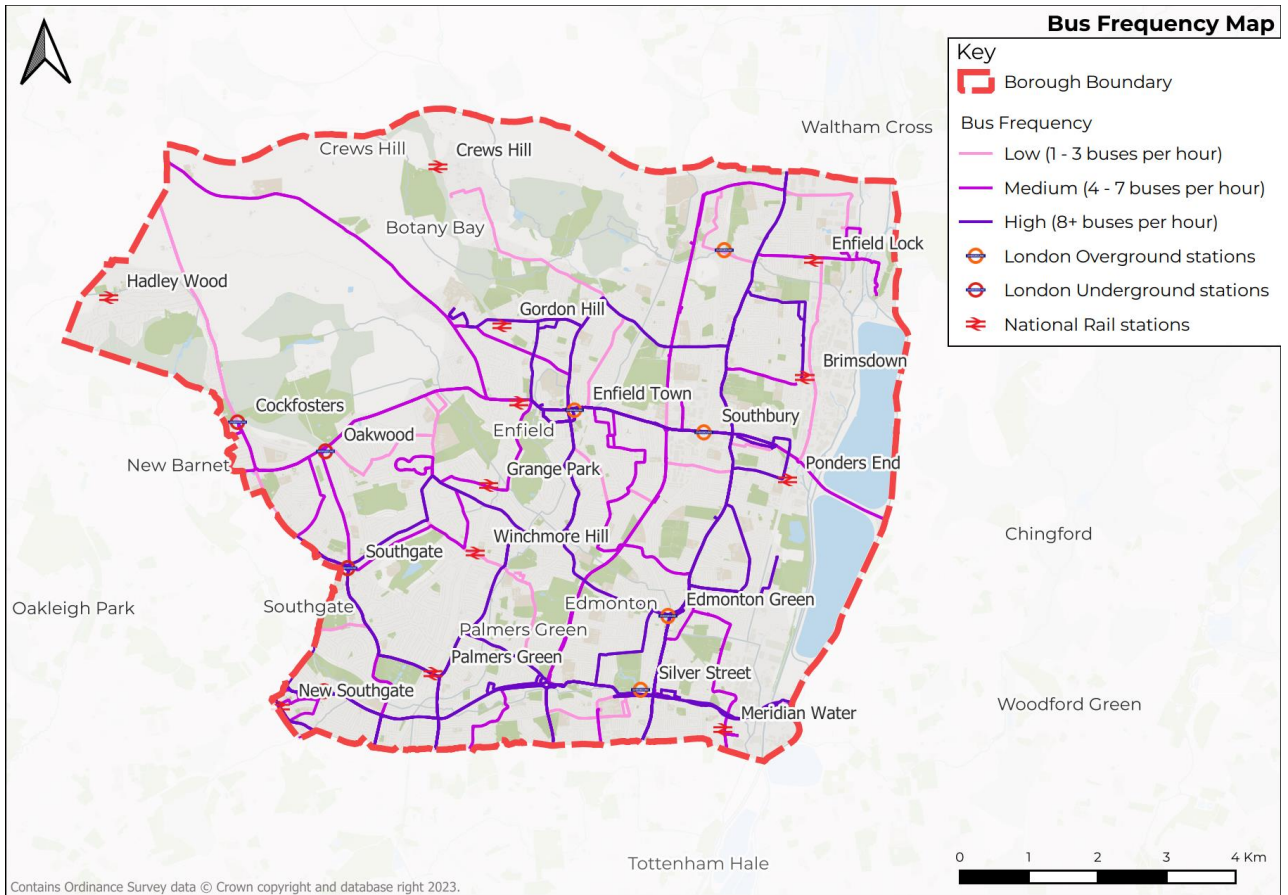
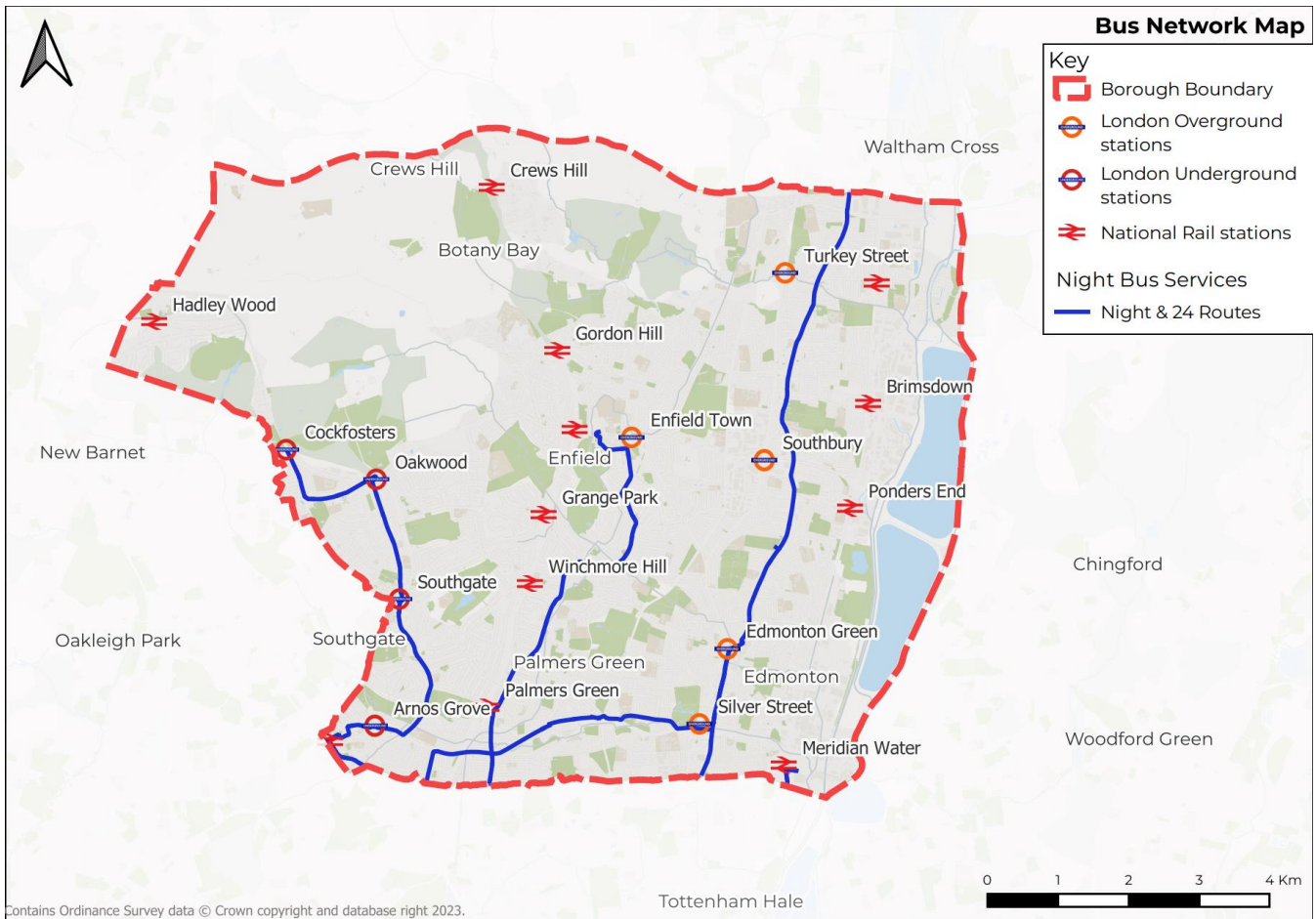


Figure 3-4 Enfield Night-time bus service coverage



- 3.3.20. TfL’s Connectivity Assessment Toolkit (WebCAT) shows PTAL across London. PTAL assesses a place’s level of connectivity to the public transport network based on distance, frequency and type of service available.
- 3.3.21. Figure 3-5 shows the PTAL assessment for the Borough of Enfield. The map reflects of very good to excellent public transport accessibility in Enfield Town, Edmonton Green, Silver Street and Southgate. Fair to low public transport accessibility in the remainder of the borough.
- 3.3.22. Notably the good PTAL value is located around the town centres and public transport hubs; Enfield and Edmonton town centres are assessed as ‘6a’ and ‘6b (Best)’ implying that they are very well connected to the public transport network. Both town centres are within close proximity to the London Overground (Enfield Town and Edmonton Green stations) and Great Northern route (Enfield Chase) which provide a frequent service to London city centre as well as a high number of bus routes. Correspondingly, the Piccadilly line corridor is better connected than the remainder of the borough.

3.3.23. Figure 3-5 shows that large sections of the borough have a score of '2' or below implying that public transport is not as well accessible for many residents. The lower levels of accessibility are located in the northern part of Cockfosters, Ridgeway and Whitewebbs wards. All of these areas are within Enfield's Green Belt large parts of which have very low residential density. The areas surrounding the two reservoirs, the King George's and William Girling, in the east of the borough are also shown to have very poor public transport accessibility, and these areas are also not as well connected to transport hubs due to rail and waterways severance, but also have low residential densities.

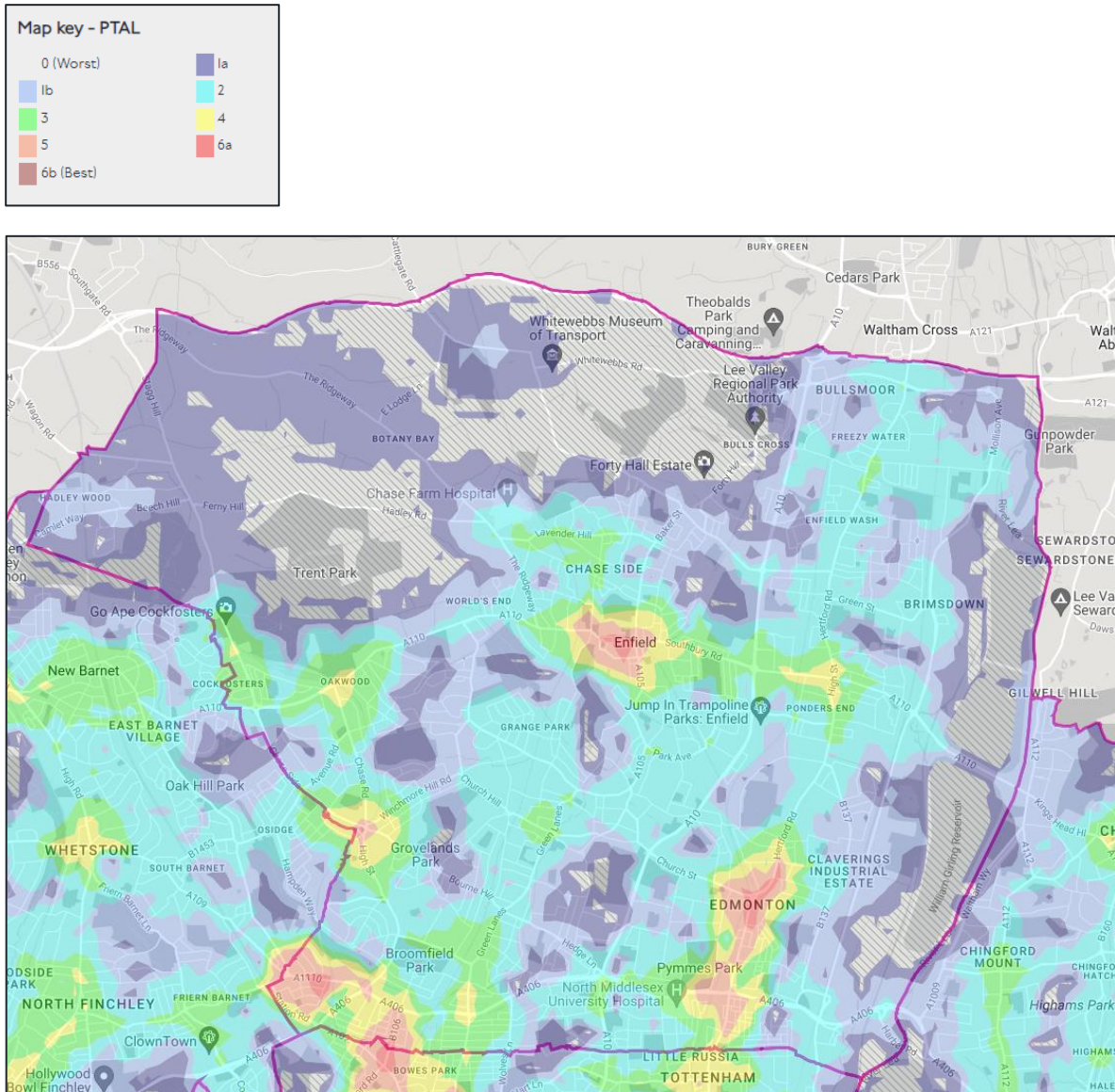


Figure 3-5 - PTAL, London Borough of Enfield (source: WebCAT)

Adjoining Local Highway Authority public transport services

- 3.3.24. As well as TfL services, Enfield benefits from University Bus (Uno) operated Dragonfly 610 service which runs between Cockfosters and Luton. The service provides connections to Hertfordshire and Bedfordshire via Potters Bar, Hatfield, Harpenden and Luton, where the bus route terminates. The journey time from Cockfosters to Luton is approximately 1 hour 35 minutes.
- 3.3.25. Sullivan Buses also provide a school bus connection from Enfield to St Albans. The route starts at Carterhatch Lane, travelling out of Enfield via Botany Bay. From the M25, the bus route goes north via Potters Bay and Welham Green, terminating at Nicholas Breakspear School in the east of St Albans. The total journey time of the route is approximately 55 minutes. There is no service during school holidays or on weekends.

3.4 Highway Network and Road Safety

- 3.4.1. Figure 3-6 shows the borough's road network. As an outer London borough, Enfield has good links to the national motorway system. The north of the borough is bounded by the M25 which is the orbital route around outer London, providing fast east to west links.
- 3.4.2. Within Enfield, the A10 and A406 are part of the TLRN (Transport for London Road Network). The A10 provides a link from Inner London towards Cambridge and the A406 North Circular, an inner circular route around inner London boroughs, are both high-capacity trunk roads, with dual carriageway and multiple traffic lanes.
- 3.4.3. There are also several A-roads which are key links through the borough. North to south links include: the A111, the A1005, the A1010 and the A1055. Orbital routes include the A110 lining the adjoining Barnet and Chingford areas.
- 3.4.4. Collision data for the period 2017-2021 indicates (Figure 3-7) some fatalities of which:
- Seven along the A10,
 - Four along the A406 North Circular,
 - Two along the A1055 and the A1005, and
 - One at Crews Hill.
- 3.4.5. Limited reports were available for these collisions. Overall, it appears the serious casualties are located along the A-road corridors, namely the A1010, A406, A110, A111 which appear to have a higher concentration of collisions.

Figure 3-6 - Enfield Highways Network

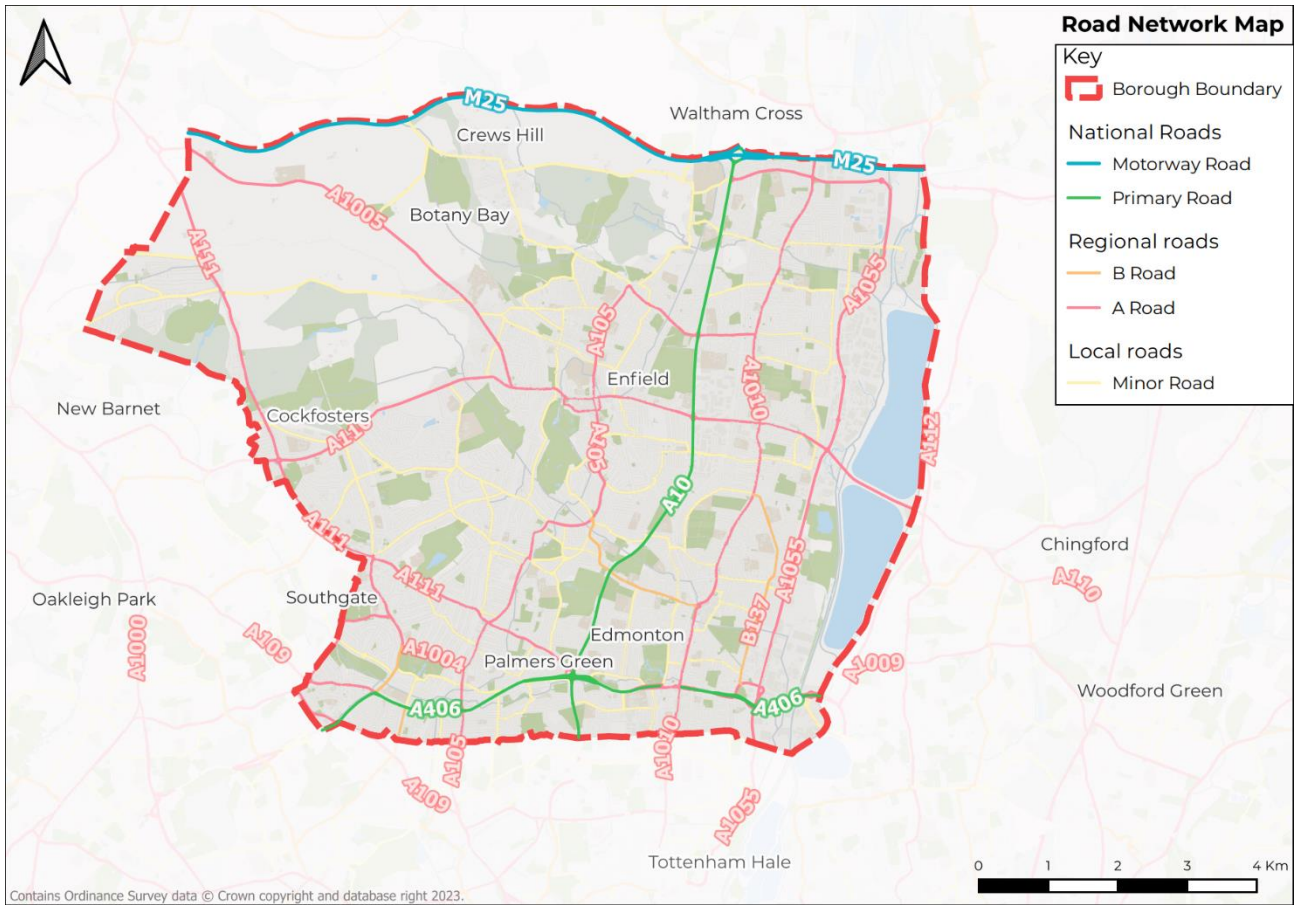
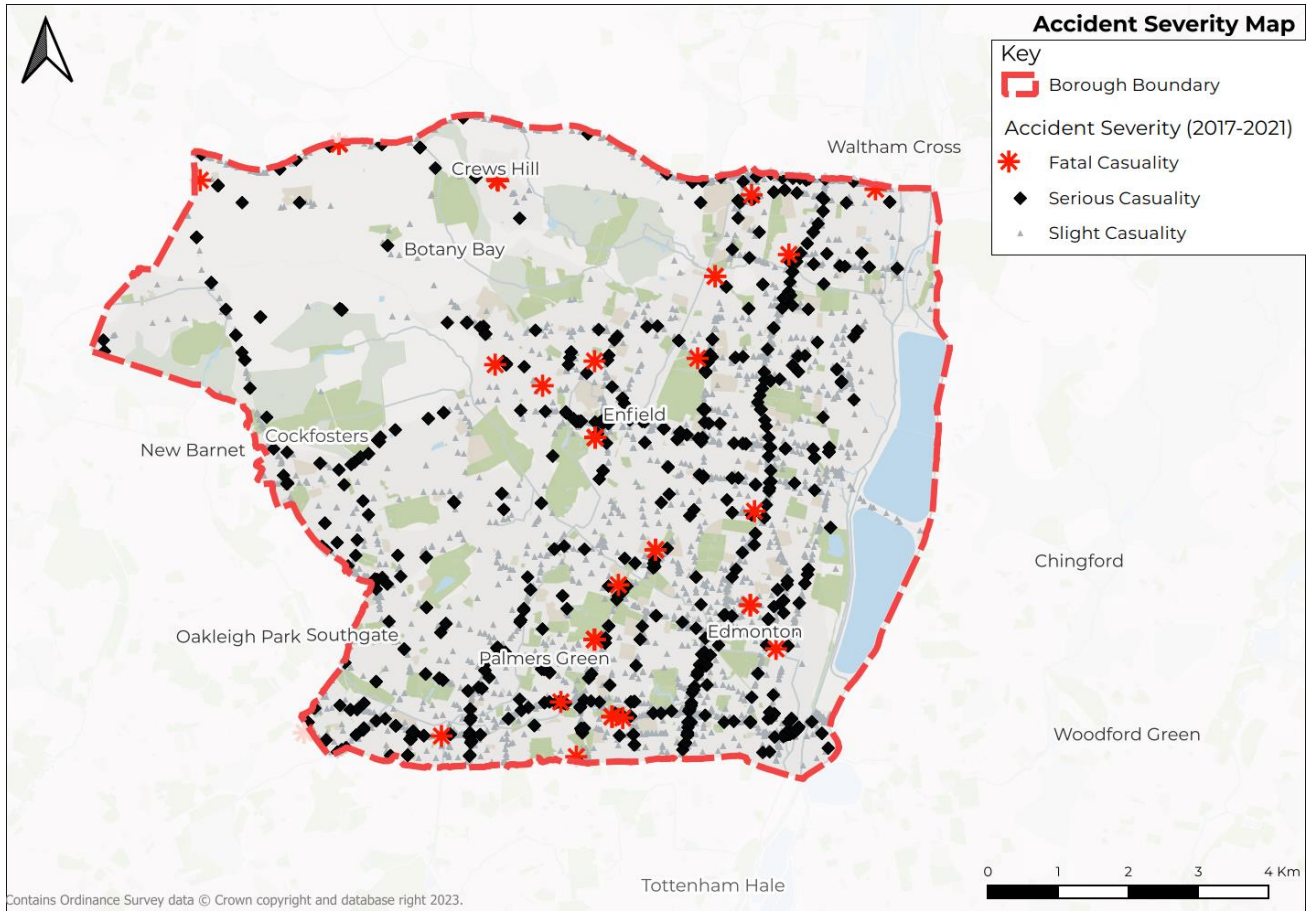


Figure 3-7 - Road collision severity (2017-2021 data)

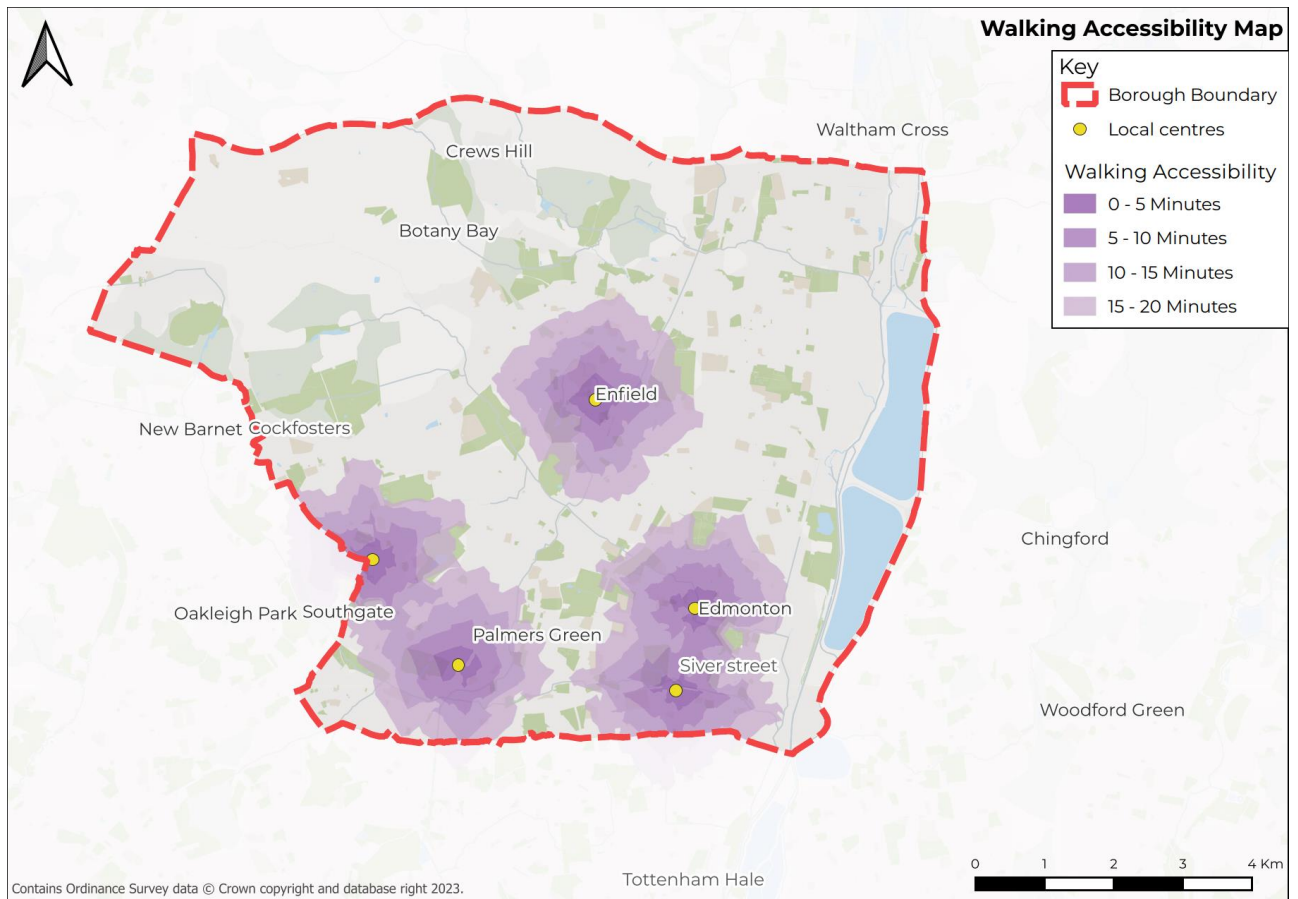


3.5 Walking and Cycling

Spatial Accessibility

- 3.5.1. Figure 3-8 shows the distances that can be covered up to 20 minutes cycling from Enfield’s local centres in Enfield. The local centres are identified in the London Plan Chapter 2 town centre network. Major centres such as Enfield town can have a functional catchment beyond the borough, attracting people to retail, office, civic, cultural, leisure and services offered by a range of sustainable travel. District centres, such as the other ones identified in Enfield, support the local communities providing access to amenities.
- 3.5.2. The local centres are located around the south/centre of the borough, which also means that most of the northern area of the borough is further away than 20 minutes walking from local centres. Proximity to a local centre is an indicator of the opportunity to foster walking travel for daily needs.

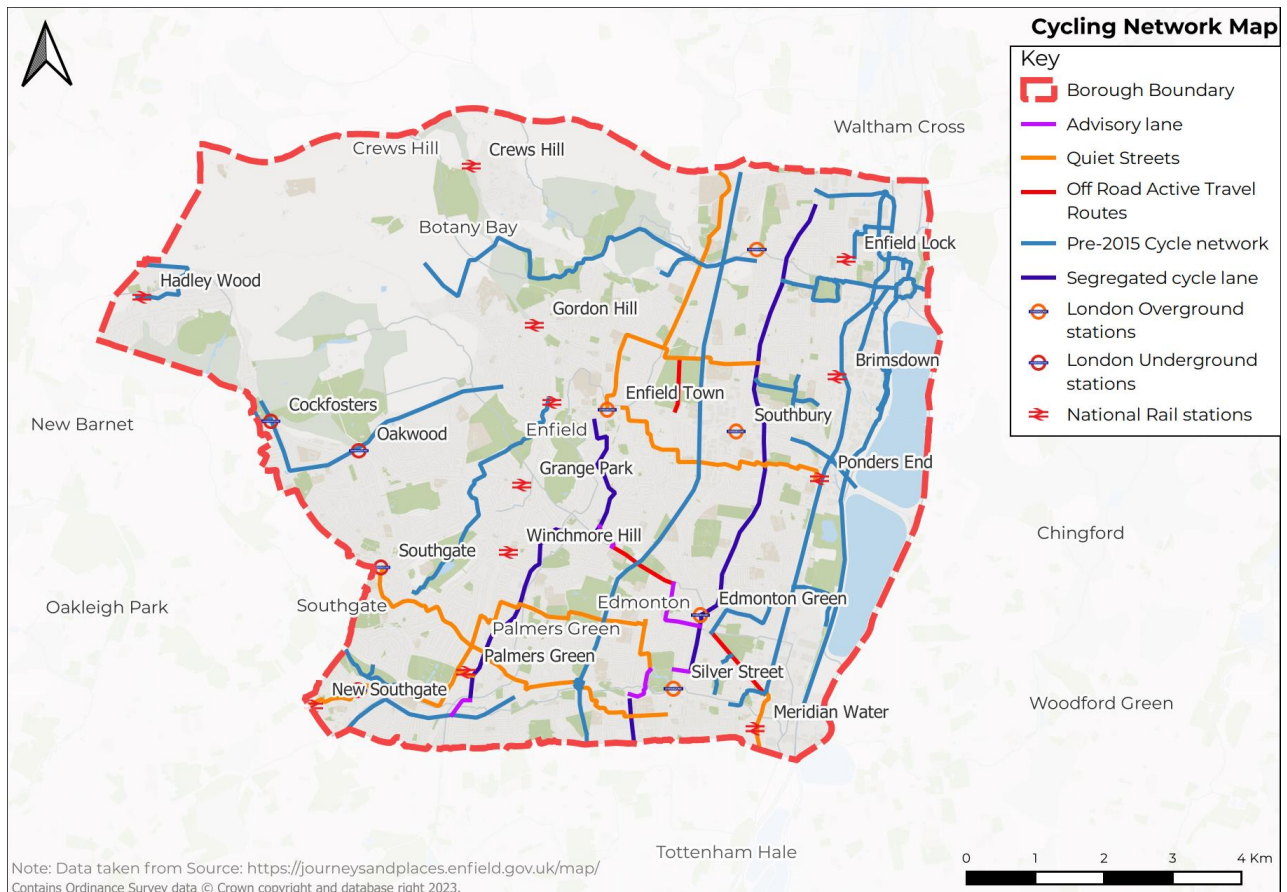
Figure 3-8 - Enfield's Local Centres Walking Accessibility



Cycling

- 3.5.3. Enfield's cycle accessibility is relatively good compared to other Outer London boroughs.
- 3.5.4. Figure 3-9 shows the extent of Enfield's cycling provision. In 2014 Enfield was one of three London Boroughs awarded £100M to deliver cycle improvements.
- 3.5.5. There are two routes that pass through the extent of the borough from North to South and these are both located in the centre-east of borough.
- 3.5.6. In comparison the western side of Enfield has less cycle infrastructure provision. Aside from a 1.7km route in Hadley Wood, the north-west of the borough including Crews Hill is served by leisure walking and cycling routes off track (London Loop).
- 3.5.7. There are plans to further extend and connect this network across the whole Borough in the future.

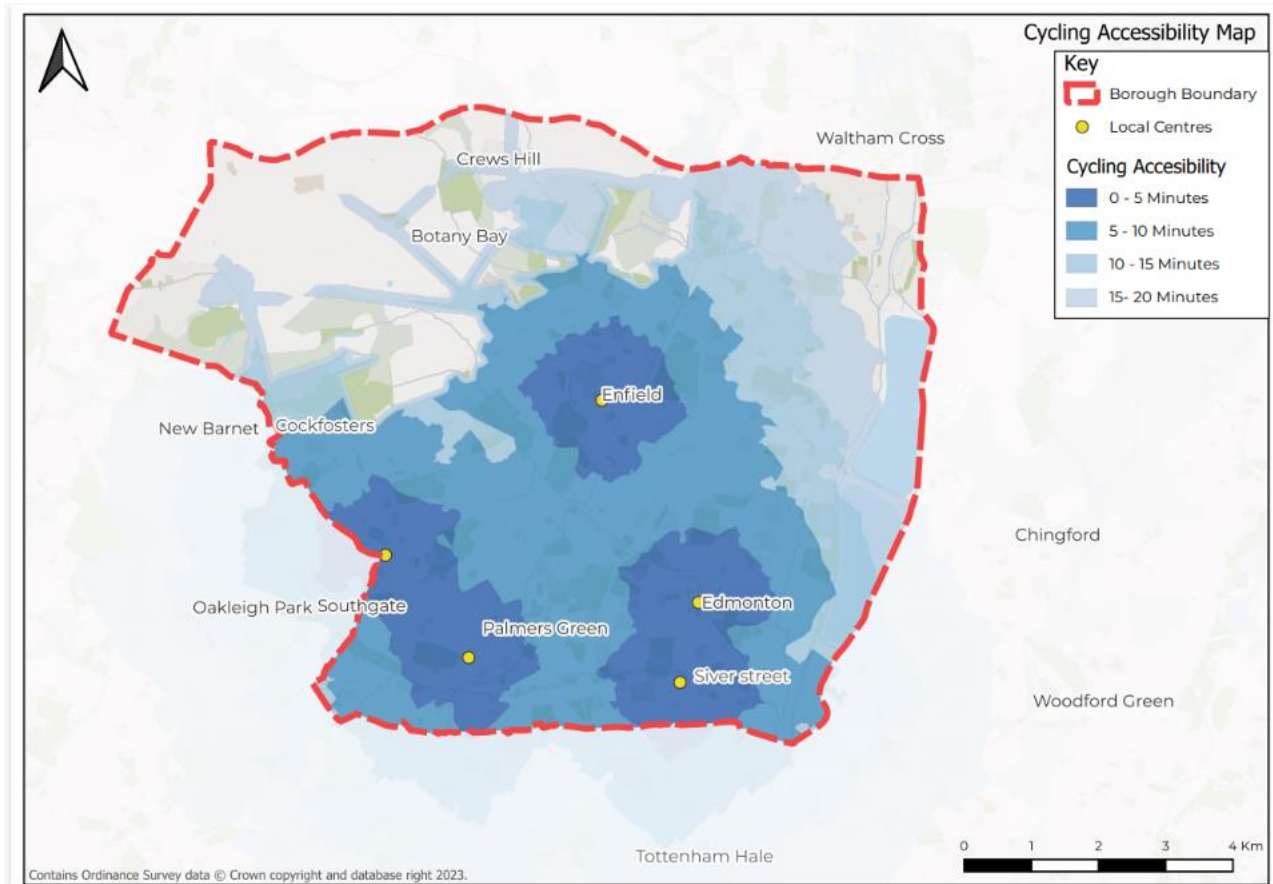
Figure 3-9 - Enfield's Cycle Network



Cycling Accessibility

- 3.5.8. Figure 3-10 shows the distances that can be covered up to 20 minutes cycling from Enfield’s local centres. As is shown in the map, the majority of the south and centre of the borough can be accessed within a 5-10 minute cycle, while much of the eastern side of the borough can be reached within 20 minutes.
- 3.5.9. Gaps in cycling accessibility are evident in the north-western extent of the borough, where the greenbelt is currently located, and just south of the M25 by Crews Hill station, but where residential density is very low.

Figure 3-10 - Map of Enfield's Cycling Accessibility



3.6 Baseline context gap identification and capacity assessment

- 3.6.1. As evidenced in this chapter Enfield's consolidated urban area is reasonably well connected to the public transport network, with multiple transit lines providing fast and reliable links to Central London and key destinations north of the borough.
- 3.6.2. The rail, overground and Piccadilly line stations are served by a bus network of low, medium and high frequency services covering both day and nighttime hours.
- 3.6.3. Highway access is provided to the Motorway network via Junction 24 and 25 to the north of the borough and strategic London destinations are linked via the A10 and A406 road. A network of local roads is maintained by the Council and covers well the urban area and albeit in more limited way the greenbelt zone to the north of the borough.
- 3.6.4. The active travel network comprises routes of varying quality that cover the urban area of the borough providing links to the adjoining local authority networks as well.
- 3.6.5. The key gaps in sustainable transport provision are in proximity of the Lee Valley Park to the east and the Greenbelt area to the north, where residential density is low.
- 3.6.6. A comprehensive capacity network assessment was carried out by way of the TfL strategic modelling base year model review. The process of baseline capacity assessment also included the identification of the local Area of Influence, the review of the model performance in the local areas and the local re-validation of the public transport and local highway models.
- 3.6.7. The Baseline Transport Review² was published in 2021 as part of the Local Plan consultation and can be found within the evidence base as a standalone document. The summary per mode of the finding is reproduced below for ease of reference.

Highway capacity performance

- 3.6.8. The baseline plots show that there are significant delays experienced by car trips along the main strategic network which includes the M25, A10 and A406. The M25 junction 25 and Bullsmore Lane also show a high V/C ratio and delays which will be improved as part of the Whitewebbs development mitigations to relieve congestion on the highway network. The M25 junction 24 also shows high traffic flows with delays particularly along Stagg Hill (A111). There is an opportunity for vehicles to use Waggon Road which links the M25 to A111 Stagg Hill and has a V/C ratio of less than 20% which would reduce the congestion at M25 junction 24.

² https://www.enfield.gov.uk/__data/assets/pdf_file/0010/12142/Transport-baseline-review-WSP-2021-Planning.pdf

- 3.6.9. It appears that due to the delays along the M25 there appears to be large flows along the country lanes particularly A1005, Cattlegate Road and Whitewebbs Road as vehicles attempt to avoid using the strategic roads. There are significant car trips made to the north and northwest of the Borough which can be inferred is due to the poor public transport connections towards the Upper Lee Valley Area.
- 3.6.10. It should be noted that the M25 junction 25 upgrades completed in 2022 is not included in the base year models.

Bus network capacity performance

- 3.6.11. The bus services provide good connectivity within the Borough particularly between key employment sites but lacks sufficient connections to northwest of the borough. The bus passenger flows towards northwest of the borough are significantly low which could be due to the frequency of services.
- 3.6.12. The base year models revealed that there are significant number of passengers boarding and alighting along the strategic routes which include the A10 from Bowes to Edmonton Green, along the A1010 corridor north of Edmonton Green, A110 between Enfield Chase and Southbury and along the A406 between Palmers Green and the A10.
- 3.6.13. The plots also show Edmonton Green, Amos Grove and Southgate stations are particularly important as they appear to have the most significant number of passengers making a transfer alighting in the AM and PM peak.

Rail network capacity performance

- 3.6.14. The borough is well served by the rail network which includes Piccadilly Line, London Overground, National Rail and West Anglia Main Line. There appears to be significant demand for these stations in the borough that provide medium-high frequency services.
- 3.6.15. The results from the baseline plots show that the Piccadilly line has significant demand particularly at Southgate station and Amos Grove station and including alighting or boarding for bus transfers. The proposed Piccadilly line frequency upgrades at Southgate and Oakwood station will improve efficiency and quality of the service for users.

3.7 Future planned provision

- 3.7.1. The transport environment is in constant state of change, even as this document was being prepared planned schemes became operational, these are:
- ULEZ (Ultra Low Emission Zone) expansion to all boroughs implemented as off 29 August 2023 to improve air quality.
 - A new bus Superloop programme of express orbital London links, the SL1 route between North Finchley and Walthamstow Central will link New Southgate, Arnos Grove and Silver Street in Enfield, as off July 2023.

- 3.7.2. National Highways have recently upgraded J25 of the M25 (completed September 2022), in the 5-year Delivery Plan 2020-2025 there are no future upgrades of the strategic road network (SRN) within, or in proximity of, LB Enfield.
- 3.7.3. The GLA and TfL have made the following commitments within/in proximity of Enfield:
- Piccadilly Line frequency upgrades to 27 train per hour in the peak from mid-2027.
 - New 94 Tube trains (Siemens Mobility) for London Underground to replace the 1970s-built Piccadilly line fleet from 2025.
 - Arnos Grove is being considered for step free access. Great Northern have applied for funding to make Enfield Chase and Gordon Hill step free.
 - Enable and support London's sustainable growth and development through improved bus services and journey experience. (TfL Bus Action Plan)
 - To support walking as mode of transport in Outer London by identifying opportunities for new walking trips, improving access to town centres and transport interchanges, and reducing the impact of traffic on local streets and increase walking to school. (TfL Walking Action Plan)
 - TfL is committed to work with Outer London boroughs to plan new cycle routes focused on town centres and deliver on the objective of 70 per cent of Londoners living within 400m of a cycle route by 2030. TfL Cycle Action Plan and strategic cycle analyses show that future cycle routes priorities are include the A110, A105, A111 and A10.
 - A commitment to develop and promote the tools that support London boroughs in the planning of balanced outcomes, maximising efficient use of road space such as through supporting the Low Traffic Neighbourhood and 20mph road programmes. (TfL Cycle Action Plan)
 - To continue to safeguard the Crossrail 2 corridor, following the decision to stop the design development in October 2020, until such a time the railway can be progressed. Crossrail 2 runs along the West Anglia Main Line branch and New Southgate branch serving the Meridian Water, Ponders End, Brimsdown and Enfield Lock stations.
- 3.7.4. Enfield Council and TfL have agreed a comprehensive package of interventions that will improve bus capacity and connectivity to support the homes and jobs planned at Meridian Water (TfL Bus Action Plan). These include:
- Expanding the bus network so it connects the site to local rail stations, increasing the number of destinations.
 - Establishing a central public transport and active travel spine.
 - Ensuring high-quality bus priority remains at the heart of the development.
 - Restructuring and simplifying local bus routes to integrate the site with neighbouring communities and town centres.
 - Redirecting local bus routes away from the A406, which offers a poor walking and waiting environment for bus customers.



- 3.7.5. Through the Local Implementation Plan (LIP) Programme TfL works with the local authorities to deliver transport schemes, with the objective to meet the Mayor Transport Strategy and London Plan objectives.

4 Forecasting and Modelling

4.1 Modelling process

- 4.1.1. The purpose of the transport modelling assessment is to take into consideration the current transport network provision and the future commitments and compare these with the planned growth. Then comparisons can be made with regards to constraints and gaps in the future provision. These considerations have been made based on general network coverage and capacity in relation to planned growth and ability of the network to accommodate the planned growth.
- 4.1.2. The transport modelling methodology has been discussed with stakeholders, in particular TfL, National Highways and Network Rail, and agreed on a step-by-step basis. Details underpinning the modelling methodology and assumptions have been captured in standalone technical notes and the Local Model Validation Reports (LMVR).
- 4.1.3. Similarly, the strategic modelling forecasting assumptions have been discussed and agreed with TfL, Network Rail and National Highways. The modelling assumptions technical notes can be found under separate cover.
- 4.1.4. The transport capacity test covered in this report is the forecast demand modelling (MoTioN), the highway network (LoHAM model) and the public transport network (Railplan model) outcomes. Detailed outputs from the transport models can be found under a separate cover.
- 4.1.5. The constraints and gaps have been identified by ways of comparison between the “Local Plan” growth scenario and the “Future Baseline”. The Local Plan growth scenario includes the projection stated in the table below.

4.2 Forecast

- 4.2.1. It should be noted that although the Local Plan housing objective is 33,604 homes, for the purpose of the capacity assessment any ‘committed’ development is accounted in the Future Baseline scenario, therefore the level of growth tested includes the ‘planned’ portion of the overall objective, which in this case is 25,044 homes.

Table 4-1 Enfield Growth (Local Plan and beyond plan)

Growth type	Quanta
Housing (number of units)	25,044
Jobs (number of)	28,721
Retail (sqm)	64,145
Retail jobs* (number of)	3,665
<i>*Estimated using Employment Density Assumptions (GLA, 2016)</i>	

4.2.2. The spatial distribution of the Local Plan growth is illustrated in Figure 4-1 and 4-2, for housing and employment respectively, on the basis of the traffic model zones.

Figure 4-1 Local Plan housing growth map

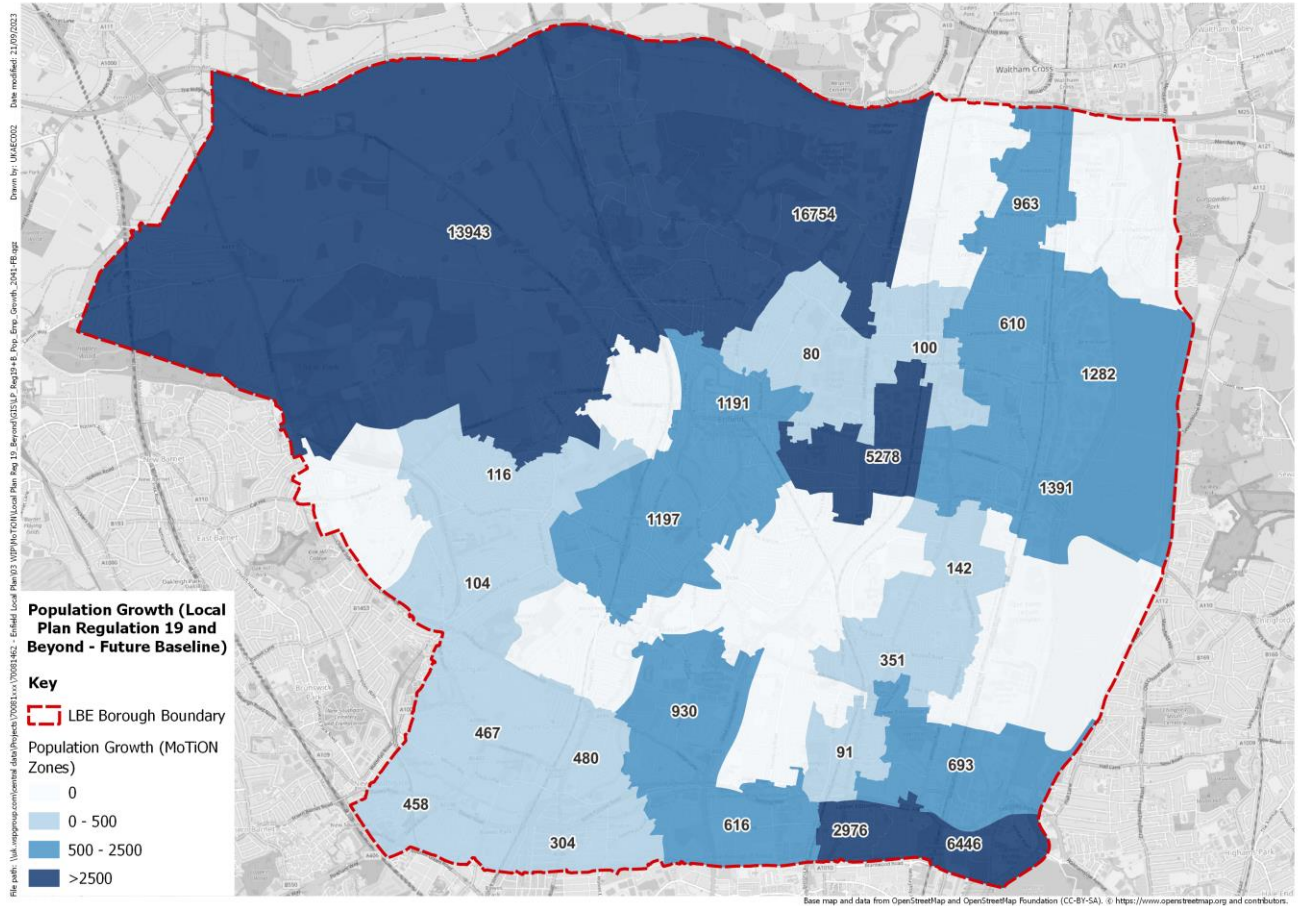
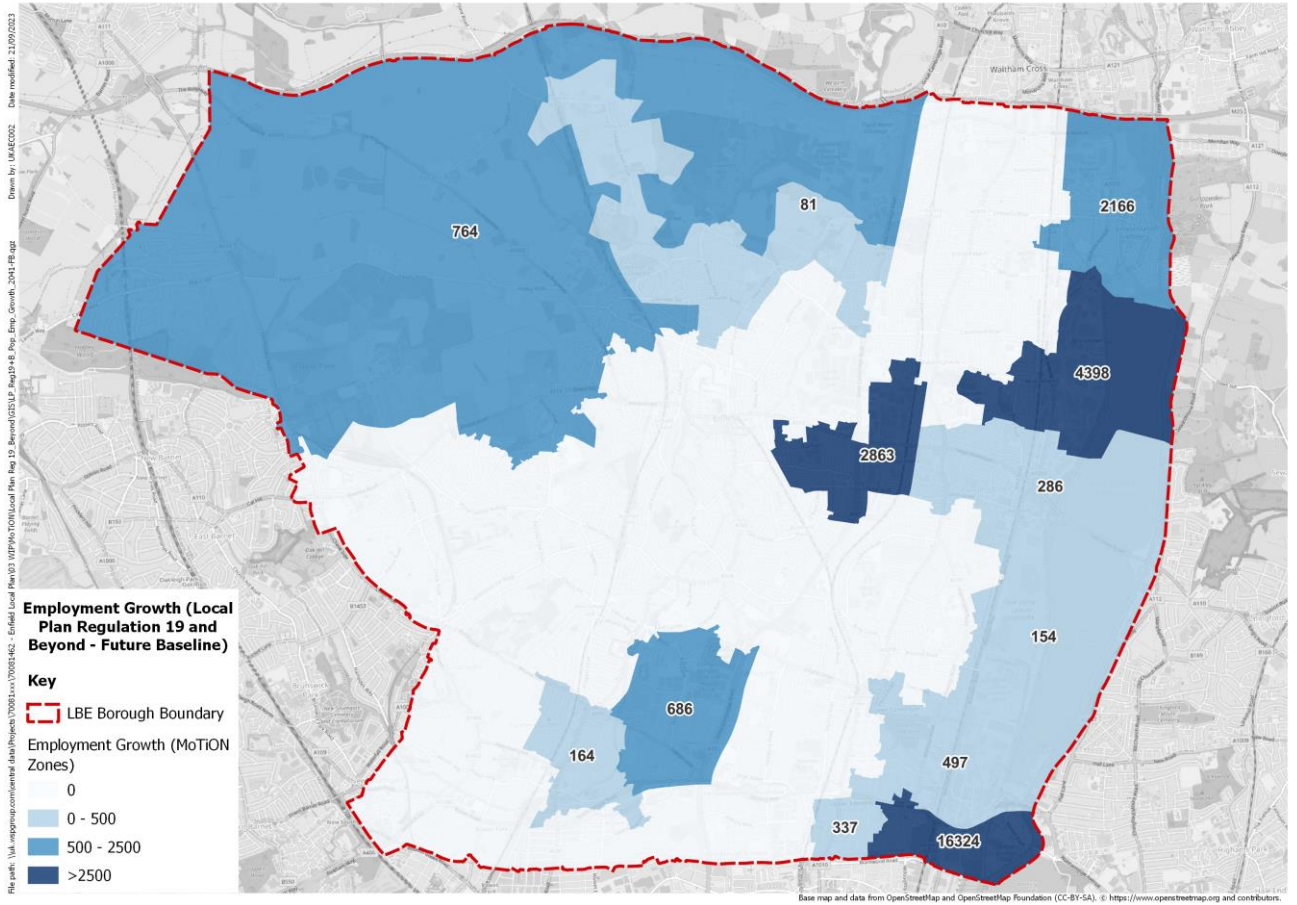


Figure 4-2 Local Plan employment growth map



4.3 Modal Shift

4.3.1. The MoTioN model predicts daily multi-modal demand across Enfield based on land use quanta and socio-economic parameters, the model embeds the London Plan 2021 and Mayor’s Transport Strategy targets and objectives including modal shift towards sustainable travel as noted in Table 4-2 below. MoTioN indicates the proposed Local Plan growth would likely result in:

- An overall increase of c16% daily travel across all modes compared to the future baseline.
- Similar mode shares maintained between the Future Baseline and the Local Plan scenario.
- Active travel modes increase accounts for c30% of the overall increase, and the public transport modes account for c25%

Table 4-2 Enfield daily travel demand forecast (MoTioN model It7 version)

	LBE Future Baseline 2041 (It7)		LBE Local Plan 2041 (It7)	
	Demand (trips)	Mode Share	Demand (trips)	Change % (Local Plan vs Future Baseline)
Cycle	15,081	2%	18,294	21%
Walk	211,640	26%	246,631	17%
Rail	86,156	11%	97,701	13%
Bus	131,063	16%	151,652	16%
PHV	11,164	1%	12,840	15%
Car D	250,715	31%	291,455	16%
Car P	100,081	12%	113,698	21%
Total	805,900	100%	932,271	+16%

4.3.2. The London wide GLA objective of 80 per cent travel by sustainable modes is ambitious and will require both infrastructure and behavioural change to be realised. The London Travel Demand Survey (LTDS 13) 2017-20 reports Enfield’s sustainable travel (similarly aligned to MoTioNs’ model predictions) to account for 54.9% of the mode share, whilst London wide sustainable travel accounts for 65.6%.

4.3.3. In line with the policy framework, measures will be required to support and achieve model shift of c25% towards sustainable modes in the next 20 years, including:

- Promoting and improving public transport services.
- Promoting and improving walking and cycling networks.
- Promoting the benefits of active travel.
- Limit car ownership in new developments and areas of good and excellent public transport accessibility.

4.3.4. Within the Local Plan growth key contributors with potential to modal shift are the main site allocations, in the Figure 4-3 and Figure 4-4 are presented the forecast multi-modal travel for the housing led sites with over 500 new units and the key employment sites.

Figure 4-3 Enfield housing led site allocations with 500+ units multi-modal travel forecast (MoTioN model)

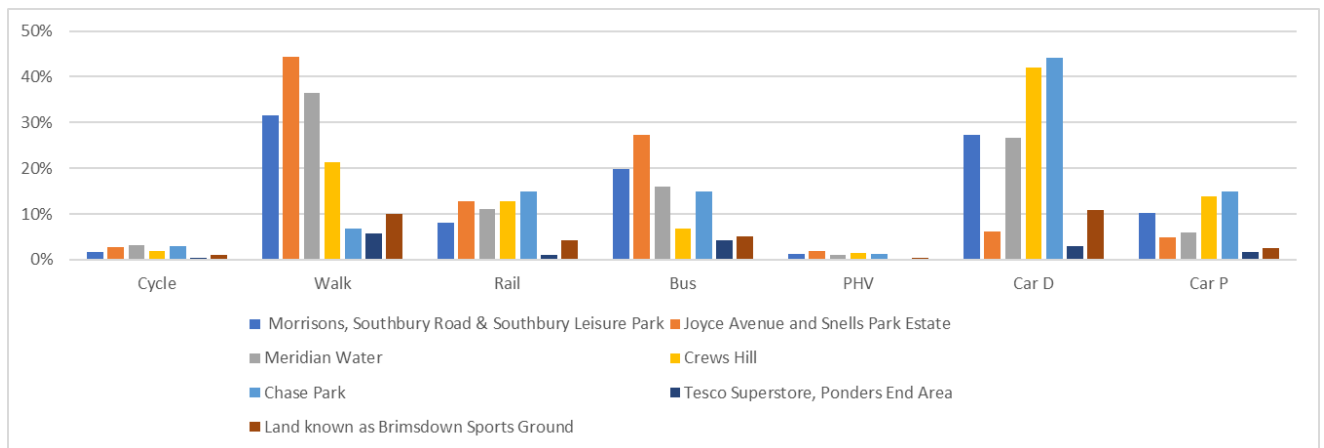
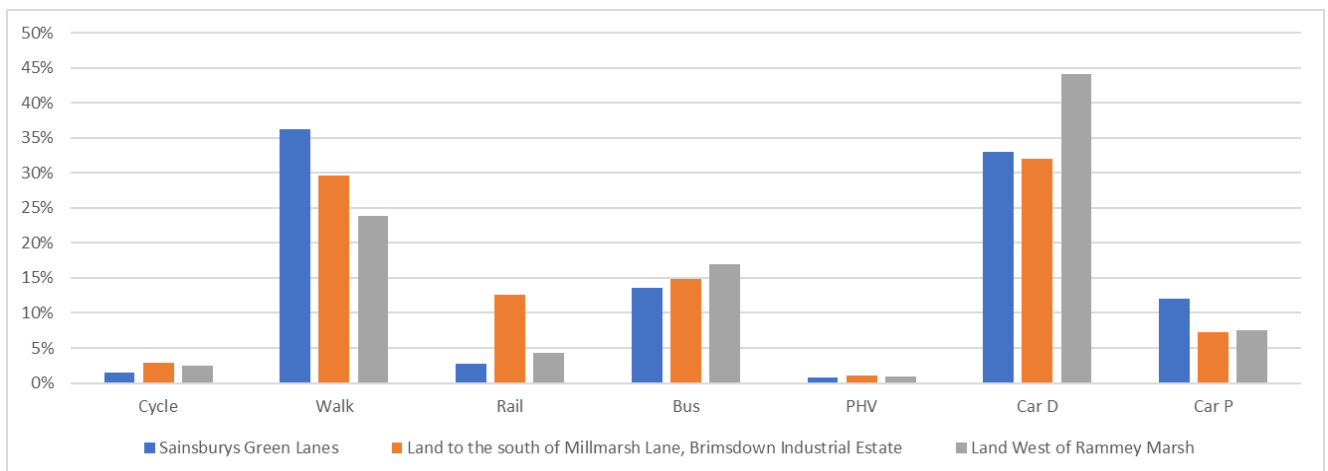


Figure 4-4 Enfield key employment site allocations multi-modal travel forecast (MoTioN model)



5 Transportation Needs Assessment

5.1 Capacity Assessment

- 5.1.1. Following on is presented a qualitative review of the active travel as well as the summary of the quantitative capacity assessment of the highway and public transport networks.
- 5.1.2. The detailed modelling outputs and results can be found in the standalone report presented under separate cover.

5.2 Active travel

- 5.2.1. The Mayor Transport Strategy indicates that modal shift to sustainable travel can be achieved by realising the cycle potential, this includes *extending the cycle network to within 400 meters of 70 per cent of Londoners*.
- 5.2.2. Currently the cycle network in Enfield serves some important routes (A1010, A105) however the areas of significant Local Plan growth are not all served by consistent standard of cycle infrastructure. Key growth areas around Meridian Water, Chase Park and Crews Hill will require upgrade of cycle provision or new cycle infrastructure to realise their modal shift potential, as identified by TfL's Cycling Action Plan 'Potential cycle corridors':
 - Theobald's Park Road and Clay Hill Road linking Crews Hill site allocation.
 - A110 Enfield Road, Slade Hill, Southbury Road linking Chase Park site allocation, Enfield Town, Sainsbury's & Morrison's site allocations and Ponders End.
 - A10 Great Cambridge Road north-south corridor.
 - A1055 Meridian Way linking Meridian Water site allocation.
- 5.2.3. As well as good quality routes, cycle parking infrastructure will need to be strengthened at transport hubs, local centres and key leisure and services destinations and provision of cycle facilities promoted on employment site allocations.
- 5.2.4. Similarly, the walking potential of these significant areas of growth relies on a good quality infrastructure as well as nearby destinations (transport stations, stops, services and amenities) to be realised. Currently the areas of significant growth are located far from existing local centres, as indicated by Figure 3-8 however, the major site allocations provide sufficient density to justify the creation of new local centres by providing complementary land uses and services on site. The mix of land uses will create opportunities for short walkable journeys or linked walking trips within the new major sites and nearby areas.
- 5.2.5. The need for mix land uses to drive sustainable development, including transport, is reflected in the site allocations which refer to "provision of flexible mix of uses to include retail and community" and new transport links. Linkages to surrounding areas for active modes will need to be realised to deliver safe and suitable network for walking, for example through the TfL LIP programme and/or via development contributions.

5.3 Highways

Capacity Assessment Screening

- 5.3.1. The impacts of the Local Plan have been assessed comparing:
- Changes in junction delay – defined as ‘minor’ between +/- 10-30%, ‘moderate’ between +/- 30-60%, ‘major’ if greater than 60%.
- 5.3.2. For Local Plan purposes it has been decided to exclude variations of +/- 10% because day-to-day variation of this magnitude is common, and it is generally accepted at industry level that accuracies greater than 10% on traffic forecasting at strategic modelling level is not easily achievable.
- 5.3.3. The significance of ‘minor’, ‘moderate’ and ‘major’ is defined as:
- Minor – some measurable change and minor loss of quality. For the purpose of Plan making unlikely to affect the outcome.
 - Moderate – measurable loss or alteration of quality not affecting the integrity of the resource. For Plan making purposes notable but not significant.
 - Major – affecting the quality of the resource, for Plan making purposes material and relevant.
- 5.3.4. It should be further noted that factors inherent to the methodology affect the interpretation of the outputs. Traffic models are based on a range of assumptions and on information available at the time of preparation, therefore models are tools to anticipate the possible outcomes. The user should understand that this outcome will likely change over the 15-year lifespan of the Local Plan delivery and changes to technology, society, economy and management of the mobility choices will influence these results.
- 5.3.5. Traffic model results therefore do not represent actual outcomes and they may not reflect the effect that future changes may have on the transport networks. The results of this strategic modelling process should be noted as potential critical issues and areas sensitive to change as result of the Local Plan. The recommendation is that these areas are monitored and further reviewed through a range of tools to develop a mitigation solution at the appropriate time, as site allocations are brought forward, if needs arise.
- 5.3.6. To consult the model outputs and results please refer to the standalone report presented under separate cover, the summary results are illustrated in Figure 5-1 and 5-2.

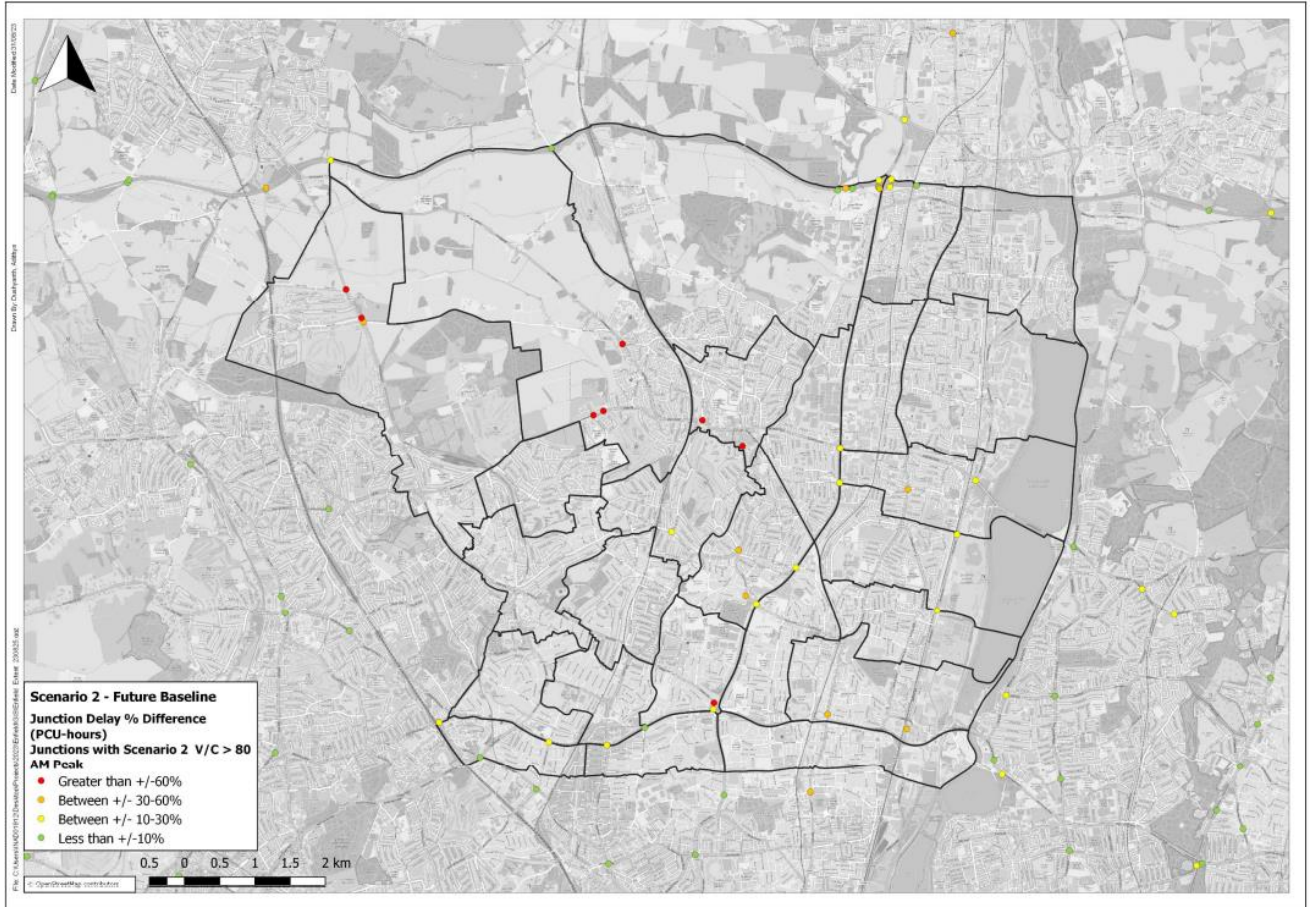


Figure 5-1 - Highway Assessment Summary - Junction Impacts Morning Peak Hour

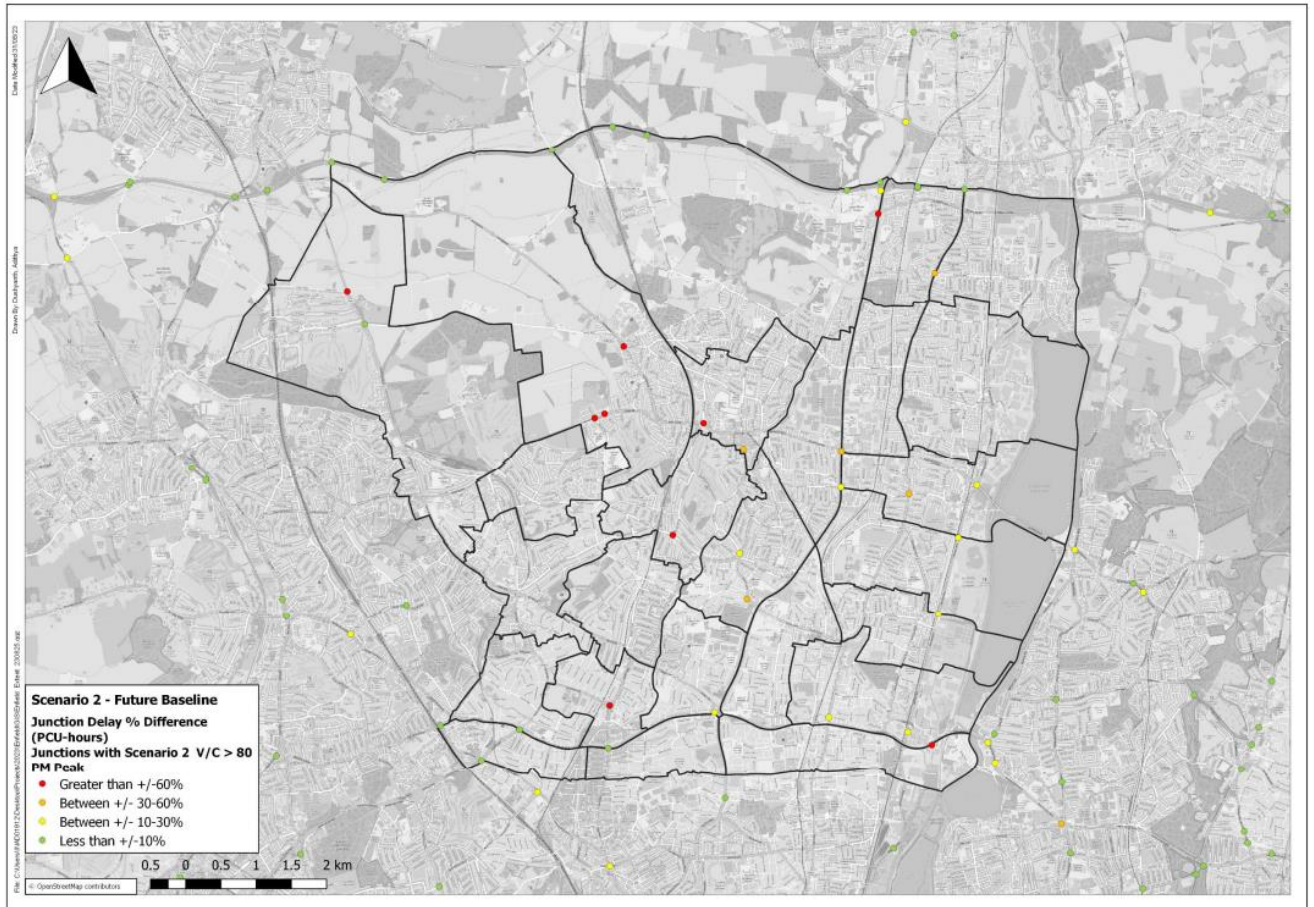


Figure 5-2 - Highway Assessment Summary - Junction Impacts Evening Peak Hour

Strategic Road Network

- 5.3.7. The M25 runs along the northern boundary of LB Enfield, the nearest junctions linking the borough network are Junction 24 (west) and J25 (east).
- 5.3.8. Junction 24 (known as Potters Bar Interchange) is a grade separated part signalled roundabout, the M25 main carriageway dives under the roundabout which links the merge/diverges with local roads:
- A north approach from Potters Barn (A111 Southgate Road) a single carriageway one lane per direction road forming a give way with J24.
 - The Ridgeway (south) a single carriageway one lane per direction road forming a give way with J24; and
 - The A111 Stag Hill (south) a single carriageway one lane per direction road forming a give way with J24.

- 5.3.9. The circulatory capacity is 2 lanes, the only signalled arm is the eastbound diverge from the M25 which is c250m long and features two lanes. The junction does not provide pedestrian or cycle infrastructure.
- 5.3.10. Junction 25, located c5 miles east of Potters Bar Interchange, is a grade separated signalled roundabout. J25 (Waltham Cross Interchange) was recently upgraded by National Highways. The roundabout links the merge/diverge with the A10 Great Cambridge Road north and south of the M25.
- 5.3.11. The A10 is a dual carriageway three lanes per direction road. The circulatory capacity is three lanes between the eastbound diverge and the A10 south approach, two lanes in the remaining sections. The junction also features pedestrian and cycle facilities.
- 5.3.12. Following on a summary of the Strategic Road Network junction performance is presented in Table 5-1. This illustrates that both junctions experience some delay at present and will continue to do in the future. Whilst immediate mitigations are not required, National Highways will continue to monitor the performance of the network and will discuss with Enfield next steps as part of the ongoing cooperation process.

Table 5-1 M25 Junction 24 and 25 LoHAM model assessment summary

Scenario	Morning peak hour	Evening peak hour
Junction 24 Base year	<p>The M25 carries between 5,800 and 6,500 pcus³ per direction.</p> <p>The merge and diverge lane west of junction 24 carry 730 pcus each whilst the one to the east are the most and least busy with the westbound diverge carrying 990 pcus and the eastbound merge 460 pcus.</p> <p>The circulatory lanes are most at pressure between the westbound diverge east of the junction and the approach to/from Southgate Road (Potters Barn).</p> <p>The eastbound diverge west of the junction and the southbound along the A111 Stag Hill are over capacity. The eastbound diverge modelling also indicates long queues.</p>	<p>The M25 carries between 5,200 and 6,700 pcus per direction.</p> <p>The merge and diverge lane north of junction carry between 670-770 pcus each. The diverge south of the junction is the least busy with 470 pcus and the eastbound merge is busier with 1,250 pcus.</p> <p>The circulatory lanes are most at pressure between the Southgate Road (Potters Barn) approach and the M25 westbound direction merge.</p> <p>Similarly to the AM the diverge west of the junction and the southbound along the A111 Stag Hill are over capacity, as well as the Stag Hill northbound approach in the immediate vicinity of the junction.</p> <p>The eastbound diverge experiences queues.</p>
Junction 24 Future baseline	<p>Slight change in traffic flows, the main traffic movement through does not change. The busiest section of the junction is from the M25 westbound diverge to Southgate Road.</p> <p>Same capacity and delay pinch points, albeit values are changed slightly.</p>	<p>Slight change in traffic flows, the main traffic movement through does not change. From the Southgate Road approach to the M25 westbound merge is the busiest section.</p> <p>Capacity-wise similar results to the base, in addition the southbound approach to the junction from Southgate Road is over capacity as well as the westbound approach from The Ridgeway.</p> <p>The M25 main carriageway lanes in the westbound direction are also over capacity and the modelling indicates queuing.</p>
Junction 24 Local Plan	<p>As result of the Local Plan growth, along the main M25 carriageway increase in traffic flows are noticeable westbound c130 pcus (est of the junction) and eastbound c85 pcus (west of the junction).</p> <p>The additional highway trips reach the junction from the southern approaches Stag Hill (c120 pcu) and The Ridgeway (c140 pcu), the latter also indicates an increase of inbound trips (c 100pcu).</p>	<p>The evening peak Local Plan scenario indicates a slight decrease to a no noticeable change in traffic flows along the main M25 carriageway.</p> <p>The Ridgeway and Southgate Road, as well as the circulatory lanes show an increase of traffic between 70 and 150 pcus per direction.</p> <p>Limited link delay increases are noticeable with the Local Plan in locations where the Future Baseline is already at capacity, for example</p>

³ PCU is a Passenger Car Unit is a measure used primarily to assess highway capacity, for modelling purposes. Different vehicles are assigned different values, according to the space they take up.

	Link delay increases are noticeable on the already at capacity links (M25 eastbound diverge, Stagg Hill).	links dealys on M25 eastbound diverge, Stagg Hill.
Junction 25 Base year	<p>The M25 carries between 4,700 and 6,500 pcus per direction.</p> <p>The merge and diverge lane west of junction carry 680 to 770 pcus each whilst the one to the east are the busiest with the westbound diverge carrying 1,860 pcus and the eastbound merge 1,280 pcus.</p> <p>The circulatory lanes are most at pressure between the A10 Great Cambridge Road north approach and the M25 westbound merge.</p> <p>The M25 westbound main carriageway lanes are at capacity, as well as the westbound diverge. The A10 north approach is over capacity northbound and southbound in the immediate proximity of the junction.</p>	<p>The M25 carries between 5,200 and 6,700 pcus per direction.</p> <p>The merge and diverge lane west of junction carry 830 pcus each whilst the one to the east are the busier with the westbound diverge carrying 1,260 pcus and the eastbound merge 900 pcus.</p> <p>The circulatory lanes are well used, and the capacity pinch points are noticeable at same location as in the morning scenario, as well as along the eastbound diverge and circulatory sections northbound between the A10 south and north approaches.</p>
Junction 25 Future baseline	<p>Slight change in traffic flows, the main traffic movement through does not change. The section between the A10 Great Cambridge Road north approach and the M25 westbound merge is the busiest.</p> <p>The A10 north approach is improved in the future baseline, the eastbound diverge performs slightly worse.</p>	<p>Slight change in traffic flows, the main traffic movement through does not change. The section between the A10 Great Cambridge Road north approach and the M25 westbound merge is the busiest.</p> <p>Same capacity and delay pinch points as in the base year, albeit values are changed slightly.</p>
Junction 25 Local Plan	<p>As result of the Local Plan growth, along the main M25 carriageway increase in traffic flows are noticeable westbound c150 pcus (east of the junction) and along the A10 south approach in a southbound direction an increase of c85 pcus.</p> <p>A limited increase in delay is noticeable at the A10 approaches in the immediate vicinity of the junction and along the M25 westbound diverge.</p>	<p>In the evening peak very similar levels of traffic are noted across J25 compared to the future baseline, with the major increase being the eastbound main carriageway of 78 pcus.</p> <p>Same capacity and delay pinch points as in the future baseline scenario, albeit values are changed slightly.</p>

Transport for London Road Network (TLRN)

- 5.4.1. TfL is responsible for managing the Transport for London Road Network and are responsible for the maintenance, management and operation of London’s traffic signals. The A10 and A406 are part of the TLRN and cater for significant Enfield as well as longer journey travel and freight.
- 5.4.2. The LoHAM model indicates that the Future Baseline is likely to be affected by congestion and delay to a similar degree as the base year. The table 5-3 below indicates TLRN link approaches with capacity over 90 per cent in the Future Baseline. The Table 5-4 indicates the additional capacity issues likely to arise due to the Local Plan growth.

Table 5-2 LoHAM Future Baseline base link Volume over Capacity (90% plus) Peak hours

Road link	Morning Peak	Evening Peak
A10 southbound between Turkey Street and Hoe Lane	✓	
A10 junction with Carterhatch Ln various approaches	✓	✓
A10 junction with Lincoln Rd various approaches	✓	✓
A406 between A1055 and A1009	✓	✓
A406 junction with A10 various approaches	✓	✓
A406 westbound approach and northbound turn into A1010	✓	
A406 junction to A105 various approaches including A111 Hedge Ln between A406 and A105	✓	✓
A406 junction with Powys Ln various approaches	✓	✓
A406 junction with A110 and Wilmer Way various approaches	✓	✓
A406 junction with A109 various approaches	✓	✓

Table 5-3 LoHAM Local Plan base link Volume over Capacity (90% plus) Peak hours

Road link	AM	PM
A10 junction with A110 Southbury Road	✓	✓
A10 junction with Church Street	✓	✓
A10 junction with Bullsmoor Lane		✓
A406 approaches	✓	✓

- 5.4.3. Both the A406 and A10 experience high volume of daily traffic, and this will continue in the Future Baseline, the Local Plan impacts localised, this means likely to affect the junction in a minor capacity but not adversely affecting the entirety of it.
- 5.4.4. With reference to Table 5-3, illustrating which additional junctions are 90 per cent volume of capacity in the Local Plan scenario, the modelling indicates the localised ‘minor’ impacts could be observed at the A10 junctions with A110 Southbury, Church Street and Bullsmoor Lane which would in turn indicate that changes of +/- 10-30% are occurring at these locations as result of the Local Plan.
- 5.4.5. The A406 approaches are anticipated to experience ‘minor’ to ‘major’ changes:
- Minor changes in proximity of the A406/ Great Northern Line underpass to the east of the junction with A109. Morning peak hour delays of 0-30 seconds anticipated at this link with future scenarios Volume of Capacity of 90-100%.
 - Negligible to minor changes between the A109 and the A10.
 - Minor to Major changes in the proximity the A10 junction with delays affecting the Hedge Lane/ Taplow Road gyratory which is shown to operate at over 90 per cent volume over capacity in the Future Baseline and Local Plan scenarios.
 - Major changes to the merge/diverge at Meridian Water site access (currently Tesco) with A406 and minor (PM) to moderate (AM) change to the Conduit Lane junction with A1055 in proximity of the same location.
- 5.4.6. Following a review of the modelling outputs with TfL it was concluded there is not an obvious immediate solution to mitigating adverse effects observed in the model, instead it was agreed that TfL and Enfield will monitor the locations likely to be affected and will continue to explore solutions as traffic growth is observed or anticipated to increase.
- 5.4.7. TfL in the capacity of TLRN operator will continue to explore opportunities to improve the A10 and A406 corridors and maintain a fit for purpose TLRN network, safe and adequate to cater for the future demand.

Local Road Network

- 5.4.8. The remainder of the local road network remains under similar capacity pressure as per the baseline context. Localised highway effects can be observed in proximity of:

- Stag Hill junctions with Waggon Road, Beech Hill and Cockfosters Road with major changes observed in junction delay.
- A110 junctions with Bincote Road/Trentwood Side, Links Side, Chase Side and the London Road approach south of Enfield Town.
- The Ridgeway junction with Lavander Hill.

- 5.4.9. Of the local road network locations affected listed above, Stag Hill, The Ridgeway and the A110 junction with Bincote Road/ Links Side already operate at over 80 per cent volume over capacity in the Future Baseline, indicating the Local Plan is likely to tip over the congestion levels at these locations. The remaining locations can be expected to reach c 90 per cent volume over capacity in the Local Plan scenario.
- 5.4.10. Overall delays and capacity pinch points observed through modelling are around the area of influence of the access points to the highway network, as represented in the model, for Crews Hill and Chase Park proposed site allocations. It should be noted that the location of effects identified are in part influenced by the crude representation of the traffic access points to the network, which do not accurately predict the exact location of access but rather make a best professional judgement allocation.
- 5.4.11. Considering the moderate and major significance of the likely effects, these should be considered in more detail, however details of the highway proposals relating to these sites are expected to be developed at later stage.
- 5.4.12. It is therefore recommended that the highway corridors identified enter a framework of monitoring, and that more detailed work on how these trips access the highway network is carried out as the proposals develop.
- 5.4.13. It is anticipated that part of this work will be carried out as part of the developing Enfield Transport Strategy Action Plan, and at planning application stage. It is expected that the Council will work with site promoters to identify and fund necessary mitigation schemes.

5.5 Railways, TfL London Underground and Overground

- 5.5.1. The Railplan public transport model was used to benchmark constraints on the public transport rail, LU and LO network, two indicators were considered: line crowding and station capacity. Summary outputs are presented in Figures 5-3 to 5-6.
- 5.5.2. The crowding model considers peak period from 0700hrs to 1000 hrs (morning peak) and from 1600hrs to 1900hrs (evening peak). The rail network shows minimal change and no constraints on the line capacity, with only the following being observed which are within acceptable operating capacity:
- In the morning peak period crowding change from “no passenger standing” to “1-2 passenger standing/sqm” seen at Grange Park to Winchmore Hill and Bush Hill Park to Edmonton Green.
 - In the evening peak period crowding change from “no passenger standing” to “1-2 passenger standing/sqm” seen at Winchmore Hill to Grange Park; crowding change from

“1-2 passenger standing/sqm” to “2-3 passenger standing/sqm” at Seven Sisters to Bruce Grove and White Hart Lane.

5.5.3. This is considered an acceptable level of crowding as defined by operators guidelines.

Figure 5-3 Rail, Lu and LO Future Baseline AM crowding level (source: Railplan)

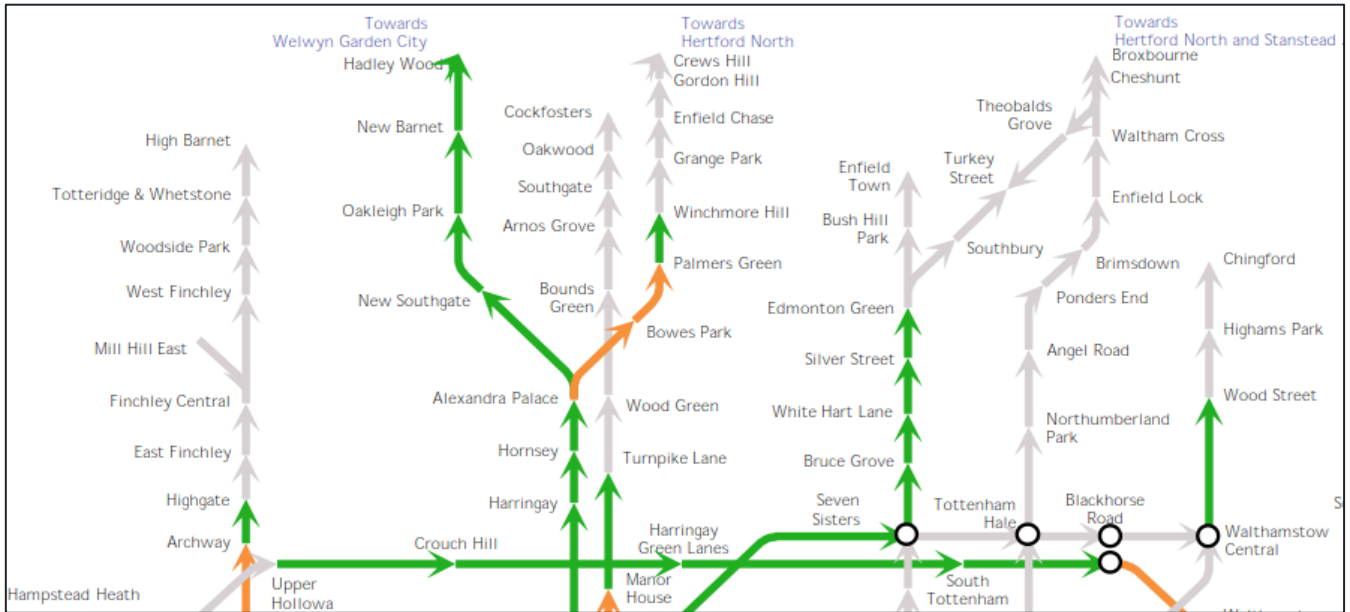


Figure 5-4 Rail, Lu and LO Future Baseline PM crowding level (source: Railplan)

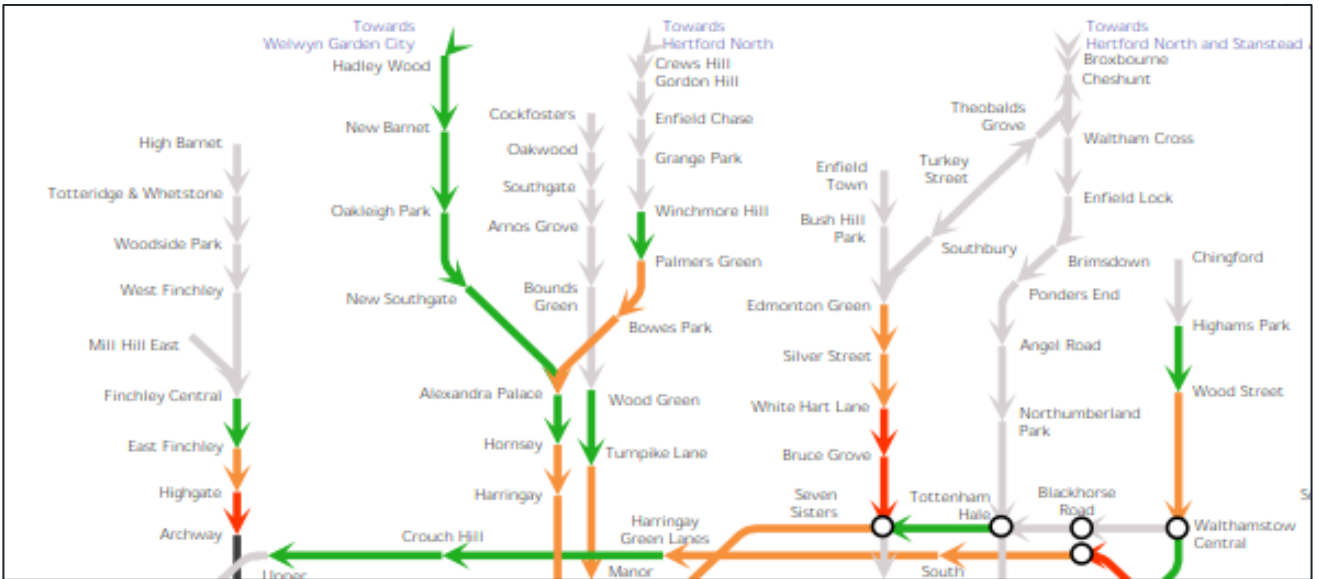


Figure 5-5 Rail, Lu and LO Local Plan AM crowding level (source: Railplan)

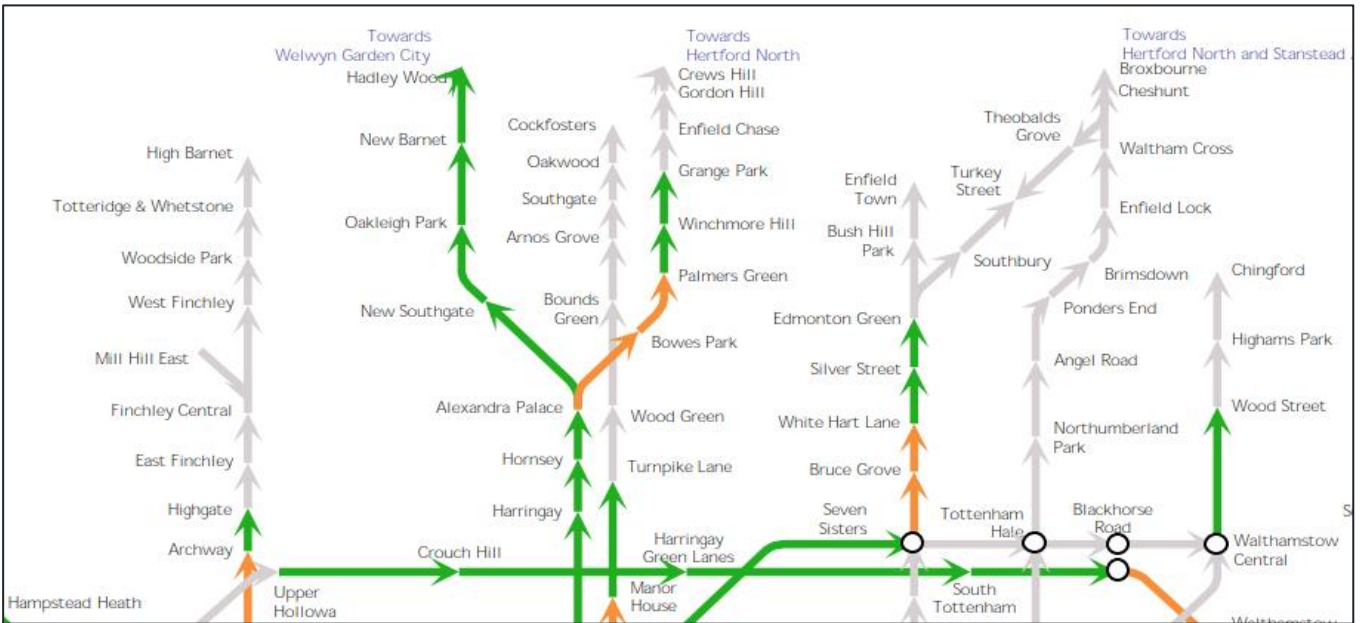


Figure 5-6 Rail, Lu and LO Local Plan PM crowding level (source: Railplan)

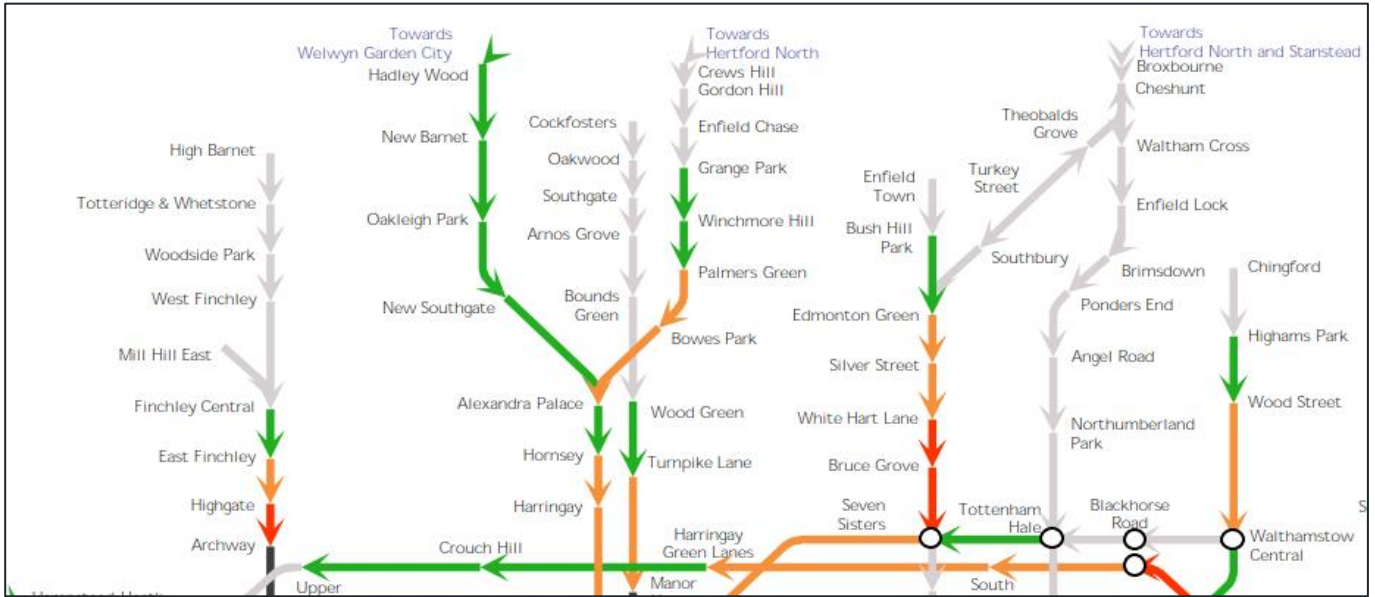
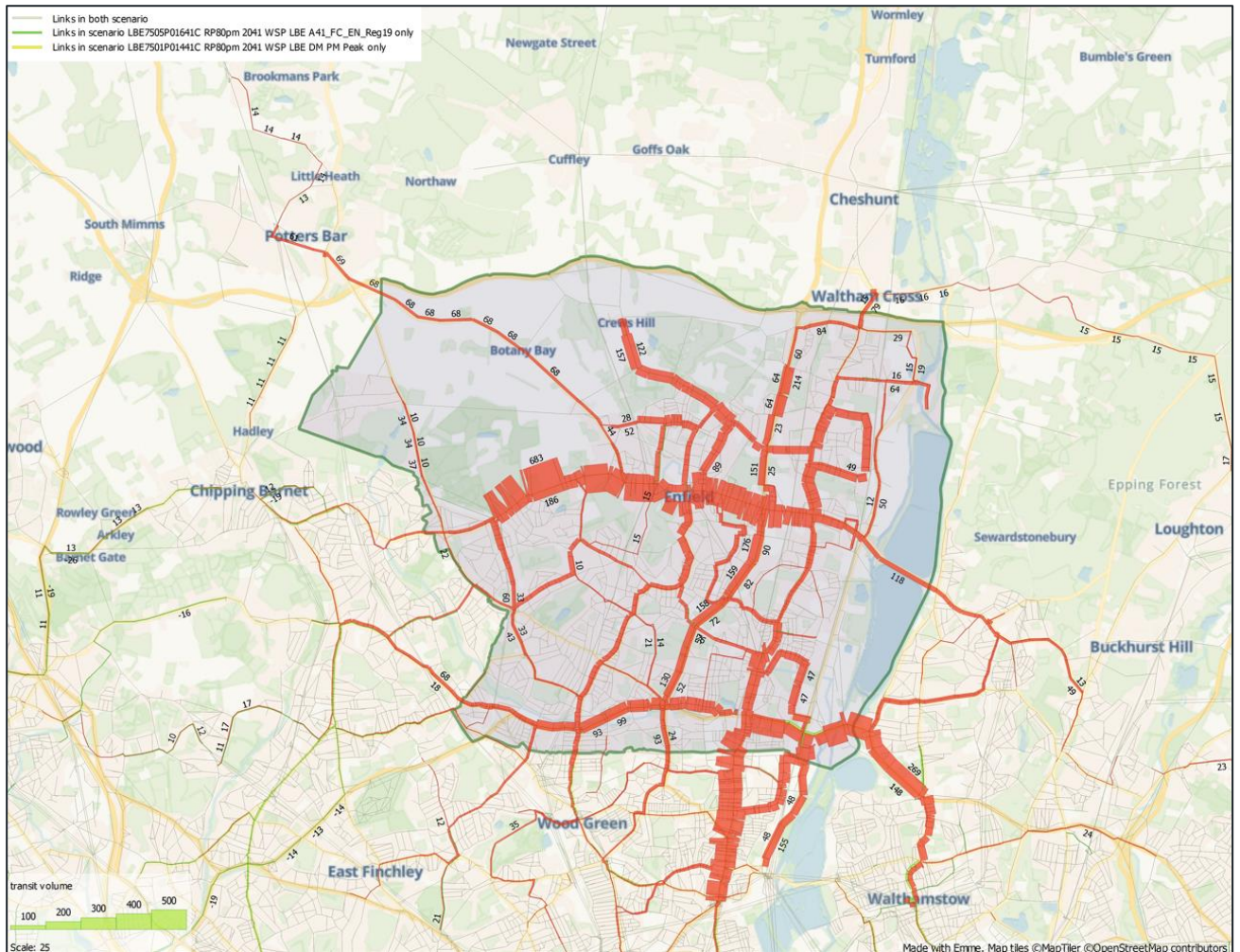


Figure 5-8 Bus patronage changes PM (source: Railplan)



- 5.6.2. As a result of the Local Plan several bus services are at risk of becoming overcrowded, these include route 313 westbound in the evening period, and in the morning period:
- Route 491 northbound
 - Route 191 southbound
 - Route 313 westbound (already over capacity in Future Baseline)
 - Route 192 southbound
 - Route 307 westbound
- 5.6.3. TfL regularly monitors the performance of buses, including their usage, speed and reliability. The Local Plan increases in both traffic flows, contributing to network congestion and delay, and bus patronage is a contributing factor to bus performance.
- 5.6.4. In line with London Plan and Mayor’s Transport Strategy buses play an important role in achieving the 80 per cent travel by sustainable modes. Whilst increased bus capacity will account for future patronage, a reliable service is key to delivering a great bus experience and competitive journey times.

- 5.6.5. To tackle the constraint in bus capacity therefore as well as opportunities to improve service frequency and capacity it will be important that Enfield and TfL work jointly on managing road space on the following corridors aiming to deliver reliable bus services as one of the objectives:
- The A110 between the A111 to the west and the A1010 to the east.
 - The A1010 between Edmonton and south of the A406.
- 5.6.6. Alternatives to this could be fare re-structuring to make the north-south LO and rail links forecast to have capacity a more attractive alternative to buses along the A1010.
- 5.6.7. In addition to the above it is clear from Figure 3-4 that night time and 24 hour bus service coverage does not extend to service new major Enfield site allocations such as Chase Park, Crews Hill and in a limited capacity Meridian Water. Consideration should be given to extending night time bus services to achieve modal shift for existing and new passengers travelling at those times.

6 Mitigations and Monitoring

6.1 Highways

Strategic Road Network

- 6.1.1. The assessment carried out indicates that the M25 junctions serving London Borough of Enfield, Junction 24 and 25, experience some delay at present and will continue to do in the future. Junction 25 upgrades were completed in 2022 including pedestrian and cycle facilities.
- 6.1.2. Whilst immediate mitigations are not required, National Highways will continue to monitor the performance of the network and will discuss with Enfield next steps as part of the ongoing cooperation process.

Transport for London Road Network

- 6.1.3. The A10 and A406 are part of the TLRN and cater for significant Enfield as well as longer journey travel and freight. The modelling assessment indicates that the Future Baseline is likely to be affected by congestion and delay to a similar degree as the base year and that some additional effects can be expected at:
- A10 junction with A110 Southbury Road
 - A10 junction with Church Street
 - A10 junction with Bullsmoor Lane
 - A406 approaches
- 6.1.4. TfL and Enfield will monitor the locations likely to be affected and TfL in the capacity of TLRN operator will continue to explore opportunities to improve the A10 and A406 corridors and maintain a fit for purpose TLRN network, safe and adequate to cater for the future demand.

Local Road Network

- 6.1.5. The local road network remains under similar capacity pressure as per the baseline context. Localised highway effects can be observed in proximity of:
- Stag Hill junctions with Waggon Road, Beech Hill and Cockforsters Road with major changes observed in junction delay.
 - A110 junctions with Bincote Road/Trentwood Side, Links Side, Chase Side and the London Road approach south of Enfield Town.
 - The Ridgeway junction with Lavander Hill.
- 6.1.6. Considering the moderate and major significance of the likely effects, these should be considered in more detail, however details of the highway proposals relating to these sites are expected to be developed at later stage.

- 6.1.7. It is therefore recommended that the highway corridors identified enter a framework of monitoring, and that more detailed work on how these trips access the highway network is carried out as the proposals develop.
- 6.1.8. The demand model captures the travel mode share and distribution the basis of the “committed” future transport network and to some extent trip distribution. Further efforts should be made to manage highway demand arising from the Local Plan, especially for short-medium length trips by bolstering the access and developing the network of sustainable travel in the areas affected.
- 6.1.9. This jointly with the application of the development management policies, the modal shift for the affected areas should benefit from a move from private vehicle use to sustainable travel modes, which is captured only to a limited extent in the strategic modelling work carried out.

6.2 Railways, TfL London Underground and Overground

- 6.2.1. The rail network shows minimal change and no constraints on the line capacity, with only the following being observed which are within acceptable operating capacity:
 - In the morning peak period crowding change from “no passenger standing” to “1-2 passenger standing/sqm” seen at Grange Park to Winchmore Hill and Bush Hill Park to Edmonton Green.
 - In the evening peak period crowding change from “no passenger standing” to “1-2 passenger standing/sqm” seen at Winchmore Hill to Grange Park; crowding change from “1-2 passenger standing/sqm” to “2-3 passenger standing/sqm” at Seven Sisters to Bruce Grove and White Hart Lane.
- 6.2.2. This is considered an acceptable level of crowding as defined by operators’ guidelines.
- 6.2.3. Great Northern have applied for funding to make Enfield Chase and Gordon Hill step free, and conversations are ongoing on medium-long term Network Rail programme for the West Anglia Main Line, Great Northern and with TfL for London Underground and Overground Lines.
- 6.2.4. Further improvements for step free access, as well as improvements to upgrade stations and nearby areas as interchanges with active travel and buses will be considered in the developing Transport Strategy to deliver a better experience for passengers and increase travel by sustainable modes.
- 6.2.5. The Council will continue to discuss rail network and related improvements with Network Rail, operators and TfL.

6.3 Buses

- 6.3.1. The model predicts significant increases in bus demand, some of which in areas that have excellent bus frequency already, such as Enfield Town, the A1010 and the A406.
- 6.3.2. As a result of the Local Plan several bus services are at risk of becoming overcrowded, these include route 313 westbound in the evening period, and in the morning period:

- Route 491 northbound
 - Route 191 southbound
 - Route 313 westbound (already over capacity in Future Baseline)
 - Route 192 southbound
 - Route 307 westbound
- 6.3.3. In addition to the above night time and 24 hour bus service coverage does not extend to service new major Enfield site allocations such as Chase Park, Crews Hill and in a limited capacity Meridian Water. Consideration should be given to extending night time bus services to achieve modal shift for existing and new passengers travelling at those times.
- 6.3.4. It should be noted that, although already operational the Superloop service has not been captured in the model due to its introduction coming at a time when modelling work was already ongoing. This should help alleviate the passenger demand along the A406.
- 6.3.5. Enfield Council and TfL have agreed a comprehensive package of interventions that will improve bus capacity and connectivity to support the homes and jobs planned at Meridian Water (TfL Bus Action Plan). These include:
- Expanding the bus network so it connects the site to local rail stations, increasing the number of destinations.
 - Establishing a central public transport and active travel spine.
 - Ensuring high-quality bus priority remains at the heart of the development.
 - Restructuring and simplifying local bus routes to integrate the site with neighbouring communities and town centres.
 - Redirecting local bus routes away from the A406, which offers a poor walking and waiting environment for bus customers.
- 6.3.6. Therefore, passenger pressure and experience in this area will be mitigated through committed funding.
- 6.3.7. TfL regularly monitors the performance of buses, including their usage, speed and reliability. The Local Plan increases in both traffic flows, contributing to network congestion and delay, and bus patronage is a contributing factor to bus performance.
- 6.3.8. To tackle the constraint in bus capacity therefore as well as opportunities to improve serve frequency and capacity it will be important that Enfield and TfL work jointly on managing road space on the following corridors aiming to deliver reliable bus services as one of the objectives:
- The A110 between the A111 to the west and the A1010 to the east.
 - The A1010 between Edmonton and south of the A406.
- 6.3.9. Alternatives to this could be fare re-structuring to make the north-south LO and rail links forecast to have capacity a more attractive alternative to buses along the A1010.

6.4 Active Travel

- 6.4.1. Currently the cycle network in Enfield serves some important routes (A1010, A105) however the areas of significant Local Plan growth are not all served by consistent standard of cycle infrastructure. Key growth areas around Meridian Water, Chase Park and Crews Hill will require upgrade of cycle provision or new cycle infrastructure to realise their modal shift potential, as identified by TfL's Cycling Action Plan 'Potential cycle corridors':
- Theobald's Park Road and Clay Hill Road linking Crews Hill site allocation.
 - A110 Enfield Road, Slade Hill, Southbury Road linking Chase Park site allocation, Enfield Town, Sainsbury's & Morrison's site allocations and Ponders End.
 - A10 Great Cambridge Road north-south corridor.
 - A1055 Meridian Way linking Meridian Water site allocation.
- 6.4.2. As well as good quality routes, cycle parking infrastructure will need to be strengthened at transport hubs, local centres and key leisure and services destinations and provision of cycle facilities promoted on employment site allocations.
- 6.4.3. Through the Local Implementation Plan (LIP) Programme TfL works with the local authorities to deliver transport schemes, with the objective to meet the Mayor Transport Strategy and London Plan objectives. Currently, LBE receives circa £1.2M per annum plus additional discretionary funding for cycle network development and bus priority, however funding remains a constraint and Enfield will seek additional funding where possible for measures that comply with Enfield's Transport Strategy and Infrastructure Delivery Plan list of schemes.

7 Conclusion

- 7.1.1. The London Plan (2021)⁴ adopts an integrated approach for London's strategic economic, environmental, transport and social development over the next 20-25 years.
- 7.1.2. In terms of housing, the London Mayor, prioritises 'good growth' with a strong emphasis on building affordable homes. The GLA's recent 'Strategic Housing Market Assessment' shows the urgent need for approximately 66,000 additional homes a year in London. Accordingly, the London Plan has forecasted the development of 520,000 homes over the next 10 years.
- 7.1.3. Ten-year housing targets have been firmly established for each London borough, serving as the baseline for housing target planning in London. Enfield, in alignment with the London Plan has a 10-year housing target of 12,460 completed homes by 2028/29.
- 7.1.4. The Local Plan has outlined a target for the delivery of 33,604 homes over the next 20-plus years, consistent with GLA targets. The Transport Assessment underpinning the Local Plan growth analysis has determined that the Enfield network is largely fit for purpose to accommodating this growth, provided that Local Plan policies, the Mayor's Transport Strategy and sustainable objectives outlined in the NPPF can be achieved.
- 7.1.5. To facilitate this, a comprehensive constraints and gap analysis was carried out benchmarking the coverage, operation and capacity of the borough network to accommodate the projected growth outlined in the Local Plan.
- 7.1.6. The TfL strategic modelling suite, including forecast demand model (MoTioN), highway assignment model (LoHAM), and public transport model (Railplan) have been interrogated to determine future capacity constraints and gaps in the transport network. The work was rigorously assured by TfL, with outputs shared and discussed extensively with stakeholders including National Highways, Network Rail, adjoining local planning and highway authorities.
- 7.1.7. The assessment of transport network capacity to manage the Local Plan demand involved benchmarking the Future Baseline and Local Plan scenarios, revealing several constraints and gaps across all scenarios in the multi-modal transport.
- 7.1.8. Overall, the review indicates that committed and planned future infrastructure and transport programmes, combined with ongoing Council investment in sustainable transport initiatives such as new infrastructure, road safety, noise and air quality management, and public transport improvements, in collaboration with TfL and Network Rail will provide a robust basis to facilitate a modal shift and safe operation of the transport network, thereby supporting the growth and development outlined in the Local Plan.

⁴ https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf



WSP House
70 Chancery Lane
London
WC2A 1AF

wsp.com

WSP UK Limited makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out in the contract under which it was supplied.