MEETING
ENVIRONMENT COMMITTEE
DATE AND TIME
MONDAY 21ST JANUARY, 2019
AT 7.00 PM
VENUE
HENDON TOWN HALL, THE BURROUGHS, LONDON NW4 4BQ

Dear Councillors,

Please find enclosed additional papers relating to the following items for the above mentioned meeting which were not available at the time of collation of the agenda.

Item No	Title of Report	Pages
1.	LOCAL IMPLEMENTATION PLAN – SUBMISSION OF FINAL DRAFT LIP - Appendix 1-5	3 - 270

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London Borough of Barnet

Final draft Local Implementation Plan

January 2019

Foreword 3

Executive summary 4

1. Introduction and preparing a LIP 9

Introduction 9

Local approval process 10

Statutory consultation 10

Statutory duties 11

LIP approval 11

2. Borough Transport Objectives 12

Introduction 12

Local context 12

Changing the transport mix 24

Mayor's Transport Strategy outcomes 31

Outcome 1: London's streets will be healthy and more Londoners will travel actively 31

Outcome 2: London's streets will be safe and secure 41

Outcome 3: London's streets will be used more efficiently and have less traffic on them 46

Outcome 4: London's streets will be clean and green 51

Outcome 5: The public transport network will meet the needs of a growing London 57

Outcome 6: Public transport will be safe, affordable and accessible to all 63

Outcome 7: Journeys by public transport will be pleasant, fast and reliable 64

Outcome 8: Active, efficient and sustainable travel will be the best option in new developments 68

Outcome 9: Transport investment will unlock the delivery of new homes and jobs 71

Other Mayoral Strategies 72

3. The Delivery Plan 74

Introduction 74

Linkages to the Mayor's Transport Strategy priorities 74

TfL Business Plan 88

Sources of funding 89

Long-Term interventions to 2041 92

Three-year indicative Programme of Investment 96

Supporting commentary for the three-year programme 98

Risks to the delivery of the three-year programme 99

Annual programme of schemes and initiatives 103

Supporting commentary for the annual programme 103

Risk assessment for the annual programme 105

Monitoring the delivery of the outcomes of the Mayor's Transport Strategy 109

Overarching mode-share aim and outcome Indicators 109

Delivery indicators 113

Local targets 115

Foreword

[Optional - To Complete]

Signature

Name Surname

Leader of Council or Chair of Environment Committee [TBC]

Executive summary

[Optional]

The third Mayor's Transport Strategy was published in March 2018 and sets out a new strategic direction for transport in London. It aims to change the way people chose to travel with an overarching vision for 80% of all trips in London to be made on foot, cycle or using public transport by 2041.

The Greater London Authority Act 1999 (GLA Act) requires each London Borough to prepare a Local Implementation Plan (LIP) containing proposals for the implementation of the Mayor's Transport Strategy in its area. This document is Barnet's third LIP and contains proposals for implementing the Mayor's Transport strategy and a timescale for implementing these proposals. It includes Barnet's transport objectives and identifies key local issues, challenges and opportunities to achieving the overarching mode share aim and the Mayor's Transport strategy nine outcomes. The nine outcomes are defined as:

Healthy Streets and healthy people, including traffic reduction strategies

> Outcome 1: London's streets will be healthy and more Londoners will travel actively
>
> Outcome 2: London's streets will be safe and secure
>
> Outcome 3: London's streets will be used more efficiently and have less traffic on them
>
> Outcome 4: London's streets will be clean and green

A good public transport experience

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

New homes and jobs

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

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

The Mayor's Transport Strategy (MTS) outlines a positive vision of London being a city where more people choose active travel and public transport over cars when travelling.

The London Borough of Barnet shares many of the same goals articulated in the Mayor's Transport Strategy, including improving air quality, reducing car dependency, and enabling more Londoners to walk and cycle, but believes achieving them in Barnet presents unique challenges that may require alternative solutions.

Barnet does not have direct control of key through routes in the borough, such as the A1, M1, A41, and A406, and a significant proportion of car trips within and across Barnet originate elsewhere and are between origin and destination points outside of the Borough. This has implications in terms of levels of traffic and mode share, air quality and casualties and those who administer these through routes (TfL and Highways England) must help contribute to vehicle reduction targets, air quality improvements and casualty reduction on their networks in Barnet. The extent of the London-wide commitment to road user charging may be insufficient to support the Mayor's Aspirations in these areas.

It is the London Borough of Barnet's view that the Mayor's Transport Strategy does not adequately distinguish the specific character and needs of outer London and Barnet, in particular how orbital routes can contribute towards significant mode shift. Without this, the delivery of the overarching aim and vision will remain particularly challenging if not unachievable for Barnet.

Barnet faces particular unique challenges in achieving the delivery of the Mayor's Transport Strategy. The key area of concerns are as follows:

Transport Mode Share

The achievement of the Mayor's overarching mode share aim for 80% of trips to be made on foot, by cycle or using public transport by 2041 presents significant challenges for Barnet, although the recognition that different targets will apply for Central, Inner and Outer London is welcome.

Outer London does not have the characteristics that will permit the same level of controlled parking and public transport use that can be achieved in Inner London and as noted above does not have direct control of key through routes in the borough, such as the A1, M1, A41, and A406, and a significant number and proportion of car

trips within and across Barnet originate elsewhere and are between origin and destination points outside of the Borough.

Furthermore Barnet has large numbers of diverse schools, particularly faith schools with extended catchment areas. School travel planning doesn't adequately tackle the challenges in this situation and further measures, including improved public transport options, may be needed.

Public Transport and Orbital Movements

The greater recognition of the need for improved orbital transport routes in Outer London in the MTS is welcome. Barnet remains underserved by orbital public transport routes and without them the car will remain the mode of choice. Improved orbital connectivity also has a deep impact on economic growth and the overall success of the Borough's many town centres.

The bus is the only real option for many orbital public transport journeys in this part of outer London and too many destinations in adjacent counties. There are also no proposals in the MTS for any orbital rail links going through Barnet (the potential Crossrail 2 and Brent Cross / Cricklewood London Overground extensions will only provide orbital links heading both east and west out of Barnet). Consequently rapid orbital bus routes are desperately needed in Barnet, with improved frequencies and capacities and greater prioritisation of such routes is necessary.

Air Quality

The limited control that the Borough has over key through routes is once again a problem. A study commissioned by the Mayor for London's Office found the air around 15 Barnet schools to be polluted with NO2 above the legal EU limit of 40 µg/m^3. Notably 14 of these are situated on or near Transport for London/Highways England administered roads in Barnet.

The intention to extend the ULEZ to almost all of Greater London for heavy diesel will undoubtedly reduce NOx levels by some degree, particularly on polluting TfL roads. However much of Barnet would not benefit from extension of the ULEZ for light vehicles in 2021 up to, but not including, the North Circular, and the risk that roads in Barnet outside the ULEZ, particularly the North Circular Road, will become even more polluted as motorists seek to avoid the charge remains a concern. The borough hopes to try to address this working with other boroughs sub-regionally, but cannot be expected to have the same impact that a London-wide measure might.

Casualties

The MTS vision of no deaths and serious injuries from road collisions by 2041 is most welcome given the challenges in casualty reduction that Barnet faces. However, especially given the numbers of strategic roads in the borough, achieving this vision is considered to be particularly challenging. The means by which zero killed and seriously injured casualties can be achieved are not yet fully known, and further work will be necessary by all parties to identify and implement the measures that will help achieve this. However Barnet supports the ambition of achieving no killed or seriously injured casualties by 2041 and has set this as a target in the final LIP

Parking standards

While tight parking standards can lead to a reduction in levels of car traffic, continued car use in the less dense suburbs of Outer London remains a reality, irrespective of public transport service and reliability improvements. Car ownership and the use of a car in these locations should not be made more difficult than it needs to be.

Residents choose to own a car or cars for a variety of reasons and, where other alternatives exist they may choose to use these in preference to the car. However, where attractive alternatives are not available the use of a car remains the only choice, and parking to accommodate this is important. Barnet's current Local Plan includes a local approach to parking marginally less restrictive than the current London Plan for residential development.

The draft London Plan car parking standards are based on Public Transport Accessibility Levels (PTAL). Accessibility and journey time are much more nuanced than an approach based purely on PTAL would suggest, since this approach only takes account of access to any public transport provision, and takes no account of whether that provision can serve the intended destination. The experience of residents may be very different depending on whether a predominantly radial or orbital approach is taken to determining accessibility.

In its LIP and more generally, Barnet is seeking to address these challenges through work to encourage healthier lifestyles across council departments and partners, making use of the borough's significant green and open spaces to help deliver attractive and accessible cycle links, particularly in development areas, and through the emerging masterplans for major leisure sites.

Car clubs, electric vehicle charging and dockless cycle hire are being rolled out to help address the levels of air pollution experienced in Barnet and the borough's

schools have had notable success in achieving STARs awards for their work developing and implementing School Travel Plans. A five year major borough capital programme of investment in trees has been agreed by the council which will be complemented by LIP provision.

Regeneration and growth across the borough's opportunity areas provides opportunities for higher density living with a reduced reliance on the private car. Significant new transport infrastructure is being secured in Barnet's major development areas, especially in Brent Cross Cricklewood and Colindale. A example of this is the extension of the 125 bus route to Colindale Station.

A long term transport strategy for the London Borough of Barnet is being developed to articulate the Council's vision and outline the Council's commitment to improving transport options for all of our residents. This strategy will consist of several individual strategies relating to specific transport modes, developed via a coordinated approach. This is particularly expected to explore new approaches and innovative solutions to the transport challenges facing Barnet.

Demand responsive, app-based travel is already changing the way people make journeys and can also be expected to affect car ownership and transport mode share. The impacts and opportunities that this provides will be considered further through the borough's long-term transport strategy.

1. Introduction and preparing a LIP

Introduction

The Local Implementation Plan (LIP) is a statutory document prepared under Section 145 of the GLA Act and sets out how the borough proposes to deliver the Mayor's Transport Strategy (MTS) in its area, as well as contributing to other local and sub-regional goals. It has been developed in accordance with the Revised Guidance for Borough Officers on Developing the Third Local Implementation Plan.

This document is the third LIP for the London Borough of Barnet. It covers the same period as the MTS (published in March 2018) and it also takes account of the transport elements of the draft London Plan, and other relevant Mayoral and local policies. The document sets out long terms goals and transport objectives for the London Borough of Barnet for the next 20 years, a three-year programme of investment starting in 2019/20, and includes delivery proposals for the period 2019/20 - 2021/22 and the targets and outcomes the borough are seeking to achieve. A more detailed delivery plan is provided for the financial year 2019/20.

This LIP identifies how the London Borough of Barnet will work towards achieving the MTS goals of:

- Healthy Streets and healthy people
- A good public transport experience
- New homes and jobs

The Council notes that the overarching aim of the strategy is for 80 per cent of all trips in London to be made on foot, by cycle or using public transport by 2041, compared to 63 per cent today, and there are different targets set for central, inner and outer London.

This aspiration presents significant challenges for Barnet, where the car remains an important mode of transport. A significant number and proportion of car trips within and across Barnet originate elsewhere and are between origin and destination points outside of the Borough on key strategic routes (e.g. M1, A1, A41, A406). Those who administer such roads (TfL and Highways England) must help contribute to vehicle reduction targets on their networks in Barnet.

The LIP outlines how Barnet Council will set local priorities and targets in order to assist with achieving this aim.

This document also outlines how the Council will work with TfL to assist with delivering the outcomes, polices and proposals of the MTS. However the greater challenges of reducing car dependence and increasing mode share by other modes in Barnet also has an impact in other areas including achieving the Vision Zero ambition for fatal and serious casualties.

Local approval process

A consultation draft LIP was considered for submission to Transport for London and for public consultation by the Policy and Resources Committee on 23 October 2018.

The final draft LIP amended in response to consultation, including TfL's recommendations will be considered and approved by the Environment Committee on 21 January 2019 prior to submission to TfL for Mayoral approval.

Statutory consultation

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

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

The borough undertook a public consultation exercise from early November 2018 ending on 9 December 2018. The consultation appeared on the borough's website, and was available for any member of the public to respond.

The following bodies were directly consulted, including the statutory consultees mentioned above. All direct consultees were written to, drawing attention to the consultation, where it could be found on the borough's website, and the closing date.

Metropolitan Police

TfL

London Cycling Campaign

Barnet Cyclists

Hertfordshire County Council

Hertsmere Borough Council

All five adjoining London Boroughs (Harrow, Brent, Camden, Haringey and Enfield)

Inclusion Barnet

Disability Action in the Borough of Barnet (DAbB)

Bodies and individuals responding to the consultation were:

- Transport for London
- London Borough of Enfield
- London Borough of Brent
- Barnet Cycling Campaign (Barnet Cyclists)
- Ramblers Association
- The Barnet Society
- 20's Plenty for Us
- Five individual respondents

A more detailed summary of the responses received can be found in appendices to the Environment Committee report at item 9 here.
http://barnet.moderngov.co.uk/ieListDocuments.aspx?CId=695&MId=9733&Ver=4

Statutory duties

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

The borough has conducted a Strategic Environmental Assessment (SEA) and an Equality Impact Assessment (EQIA) on the proposals contained in its LIP. The SEA Environmental Report, including a non-technical summary is available alongside the final draft LIP via the link included above.

LIP approval

Following agreement of this final draft, the LIP will be submitted to the Mayor of London for approval.

2. Borough Transport Objectives

Introduction

This chapter sets out the local policy context for the third round of LIPs. It covers the borough's detailed interpretation at a spatial level and the local policies and proposals which will help deliver the MTS. The chapter also considers the link between the LIP and other key frameworks against which the borough plans and delivers local services.

The LIP firmly demonstrates that it is informed by evidence and analysis of local needs and issues and that it is shaped by the wider context of the MTS vision, the MTS Healthy Streets Approach and the MTS policies, proposals and outcomes.

Local context

Barnet is situated in the North of London, bounded by the London Boroughs of Harrow, Brent, Camden, Haringey and Enfield and by the Borough of Hertsmere in Hertfordshire (see ***Figure 1***).

Figure 1 – Barnet and surrounding local authorities

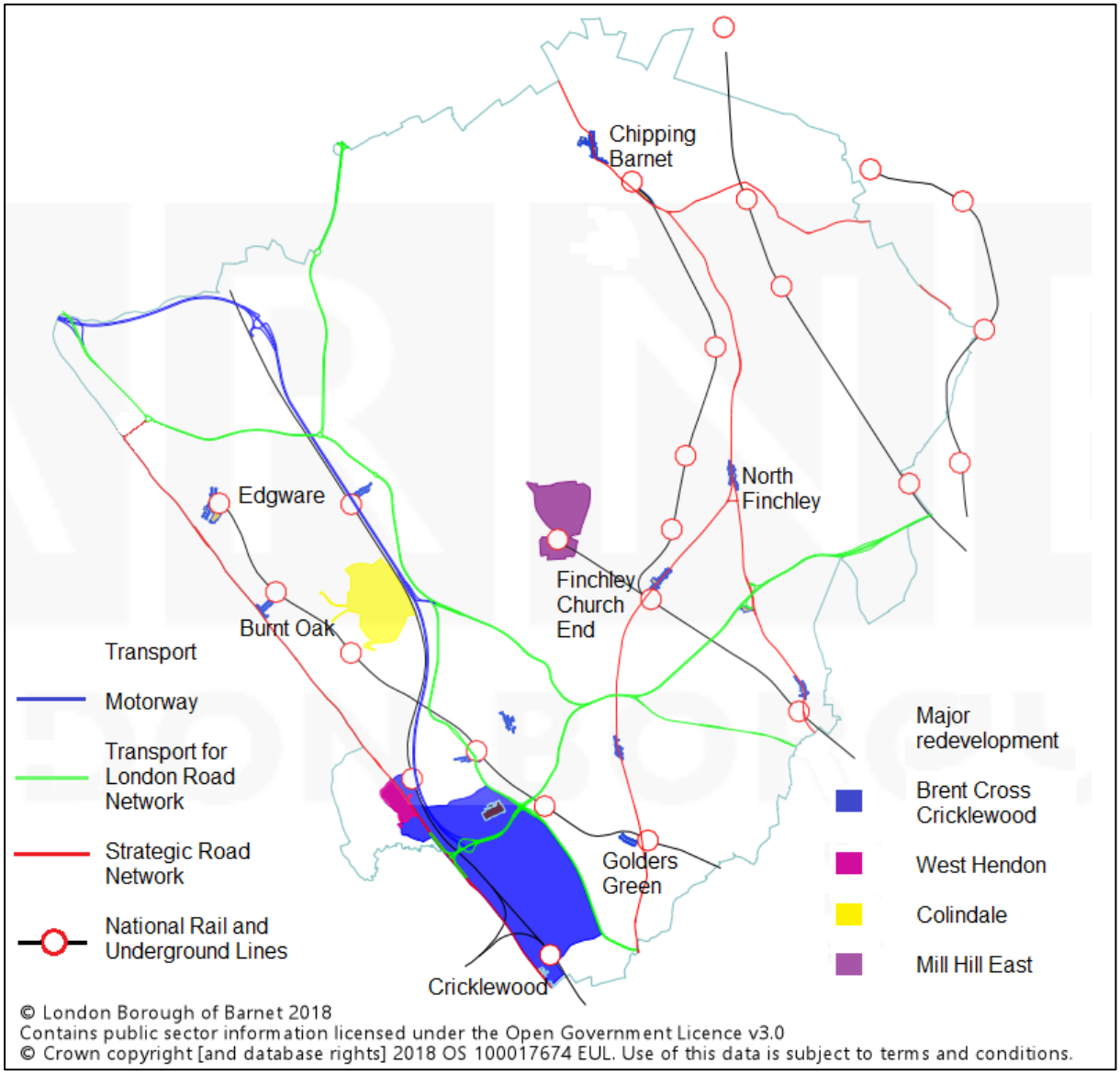
Barnet is the fourth largest London borough by area (86.7 sq km) and home to a growing and diverse population. With a 2015 population of circa 393,000, Barnet is now London's most populous borough. Barnet's population is projected to grow further to around 469,000 by 2039. The growth in Barnet's population will change our existing communities, attracting a younger and more diverse population.

Numbers of Households are also projected to increase from 150,000 in 2015 to 189,000 by 2039. Growth is expected to be particularly concentrated in a number of

major redevelopment areas in the west of the borough, that will deliver higher density living than in other areas of Barnet.

Further information regarding the demography of the borough may be found in the Joint Strategic Needs Assessment https://www.barnet.gov.uk/jsna-home/

Figure 2 – Main transport links, main town centres and major development areas



There are currently four major redevelopment sites within Barnet:

- Colindale: creation of a new neighbourhood centre with 10,000 new homes and 1,000 new jobs by 2021.
- Brent Cross Cricklewood, the expansion of the existing shopping centre with the creation of 7,500 new homes and 27,000 new jobs by 2035.
- West Hendon Regeneration scheme, a net increase of 1,500 new homes by 2026.
- Mill Hill East Action plan (AAP), 2,200 new homes, a new primary school and 500 jobs by 2026.

In addition, the North London Business Park and the New Southgate Opportunity Area have been earmarked for future regeneration development.

The Brent Cross Cricklewood development is Barnet Council's most significant growth and regeneration programme.

This £4.5 billion regeneration scheme is one of the biggest in Europe. The vision is to create a thriving town centre with attractive, high quality homes and green spaces. It will deliver a modernised and expanded Brent Cross shopping centre, new high street with local shops, restaurants and offices, 7,500 new homes and up to 27,000 jobs.

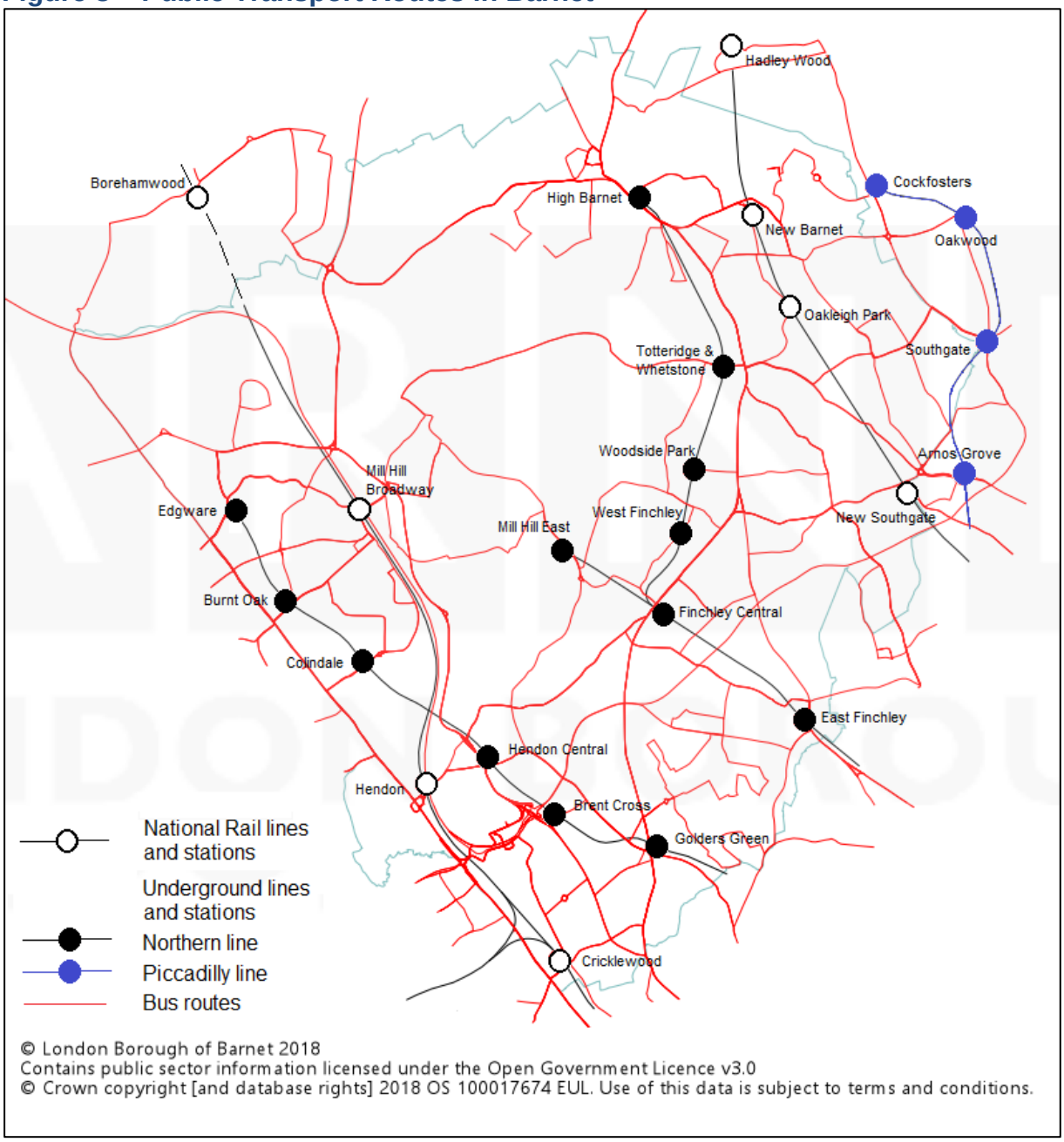
It will be will be served by enhanced and modernised transport links which will include a new Thameslink train station and bus station. The ambition is to create a vibrant place to live, work and socialise for existing communities and new people who will chose to live and work in the area.

Barnet is served by national rail lines providing suburban services in the east and west of the borough, and main line services in the west. Two branches of the northern line serve the borough (plus a shuttle service to Mill Hill East) and the Jubilee and Piccadilly lines and by national rail lines pass to the west and east of the borough respectively.

These rail and underground services cater for radial travel into London, but public transport options for other trips are more limited. The bus service is the only public transport option available for orbital trips and public transport links to destinations north of the borough are limited.

As the Borough continues to grow so will the demand and pressure on its transport network.

Figure 3 – Public Transport Routes in Barnet



Policy Context

Local plans and policies with a particular influence include the Council's Corporate Plan and the Barnet Local Plan Core Strategy and Development Management Policies.

Corporate Plan

The Council's Corporate Plan for 2015-20 sets the vision and strategy for the next five years based on the core principles of fairness, responsibility and opportunity to make sure Barnet is a place:

- of opportunity, where people can further their quality of life
- where people are helped to help themselves, recognising that prevention is better than cure
- where responsibility is shared, fairly
- where services are delivered efficiently to get value for money for the taxpayer

The 2018/19 addendum sets out a series of corporate priorities and other priorities for the theme committees. Those shown in bold in ***Table 1*** are particularly relevant.

Table 1 - Corporate Priorities

Committee	**Corporate priorities**	**Other priorities for this committee**
Children, Education, Libraries and Safeguarding Committee	Children's Services Improvement Plan	Tackling gang activity
	Delivering the family-friendly Barnet vision	Ensuring the attainment and progress of children in Barnet schools remains in the top 10% nationally
		Delivering a 21st Century library service:
Adults and Safeguarding Committee	Implementing strength-based practice	Needs-based prevention and support
	Integrating local health and social care	**Improving leisure facilities and physical activity**
		Health and Wellbeing

Assets, Regeneration and Growth Committee	**Regenerating Brent Cross Cricklewood**	**Investing in key Town Centres and making Barnet the best place in London to be a small business**
	Increasing the housing supply, including Colindale	
	Helping people into work	
Community Leadership Committee	**Safer communities**	Co-ordinating a package of measures to support community activity and resilience
	Tackling issues with domestic violence, mental health and substance misuse	Emergency planning, preparedness and response
Environment Committee	Modernising environmental services	**Delivering transport improvements**
	Delivering highways improvements	Investing in parks and open spaces for a greener borough
		Delivering efficient regulatory services
Housing Committee	Building compliance and fire safety	Tackling homelessness
		Driving up the quality of the Private

		Rented Sector
		Providing suitable housing to support vulnerable people
Policy and Resources Committee	Implementing The Way We Work programme.	A culture of transparency and accountability for personal information
	Continuing to improve Customer Services	
	Medium and long term financial planning	

London Plan and Local Plan

The draft London Plan will not be finalised until after the LIP has been completed. A new Local Plan is also being developed, but lags the development of the LIP. These emerging documents will nevertheless influence the LIP.

The current Local Plan Core Strategy also remains relevant. The Core Strategy includes the transport related objectives and policies identified in ***Table 2***, and other core objectives are also identified below in summary only.

Table 2 - Local Plan Core Strategy Objectives and Policies

Core Strategy Transport Objectives	**Core Strategy Transport Policies**
To provide safe, effective and efficient travel • to ensure safe and effective use of the road network that enables residents and visitors to	**Ensuring more efficient use of the local road network** • In order to enable traffic to flow more smoothly we will prioritise the reduction of congestion, including through encouraging trips to route according to the road hierarchy, the implementation of development related schemes

choose convenient and reliable transport that is economically and environmentally efficient, and takes a comprehensive approach to tackling the school run • to provide more environmentally friendly transport systems by delivering high quality transport systems in regeneration areas and in town centres through town centre frameworks improving accessibility to jobs, shopping, leisure facilities and services.	that also address pinch-points, a review of traffic signals, parking management measures and more efficient freight movements • We will continue to invest in improvements to the condition of roads and footways in the borough to ensure that the local road network operates efficiently and safely, and seek to improve co-ordination of maintenance and utility works • We will continue to manage a parking regime which recognises that many Barnet residents will continue to own and travel by car • We will work with TfL to review and improve the bus network • We will continue to make travel safer and more attractive by improving street lighting, security coverage and accessibility at transport interchanges and around bus stops as well as delivering, where resources permit, targeted local safety schemes. **Taking a comprehensive approach to tackling the school run** • We will seek to improve the effectiveness of our School Travel Plans to achieve a greater reduction in car based journeys and increase levels in walking and cycling to and from school • We will implement complementary traffic management schemes outside schools, including preventing pupil parking
Other core strategy objectives (summary)	**Delivery of high quality transport systems in regeneration areas and town centres**
To manage housing growth to meet housing aspirations	We will ensure that development is matched to capacity and promote key transport infrastructure proposals in our town centres and regeneration

To meet social infrastructure needs	areas to support Barnet's growth [including various specified in the policy]. **More environmentally friendly transport networks** • We will support the use of low emission vehicles including electric cars through provision of charging points in new developments • We will encourage mixed use development that will help to reduce the distances people need to travel to access everyday goods and services • We will require the minimisation of road based freight movements associated with the roll-out of our regeneration schemes through, for BXC, the establishment of a (preferably rail based) construction consolidation centre, and for all regeneration schemes, the use of Delivery, Servicing, and Construction Management Plans. • Through the development management process and partnership working we will seek further efficiencies and inter-modal transfer through the implementation of the Rail Freight Facility as part of the Brent Cross Cricklewood Proposals, and the promotion of Consolidation Centres and Freight Quality Partnerships. • Where appropriate land for transport purposes will be identified and safeguarded in the Site Allocations DPD. • We will seek to make cycling and walking more attractive for leisure, health and short trips.
To promote Barnet as a place of economic growth and prosperity	
To promote strong and cohesive communities	
To promote healthy living and well-being	
To protect and enhance the suburbs	
To ensure efficient use of land and natural resources	
To enhance and protect our green and natural open spaces	

Other Planning policies and plans with an influence include the Local Plan Development Management Policies, Colindale Area Action Plan, Mill Hill East Area Action Plan, North London Waste Plan, Planning briefs for specific sites, Supplementary Planning documents including North Finchley Town Centre Framework and other **Town Centre Frameworks and Strategies** (New Barnet,

Finchley Church End, Chipping Barnet, Edgware) as well as SPDs on Green Infrastructure, Residential Design Guidance, Sustainable Design and Construction, Planning Obligations.

Other developing plans that will have an influence include the **Regeneration Strategy** which aims to:

- define the future physical and non-physical regeneration programmes in the borough
- meet defined housing need
- define and enhance interventions to optimise the borough's town centres.
- ensure the delivery of infrastructure, including digital infrastructure, to help make successful places and support business and employment.
- make the best use of public sector land

The emerging themes that will be considered as part of the developing regeneration strategy are:

- Housing
- Town centres
- Physical and social infrastructure to make successful places, and support business
- Arts, culture and the night time economy
- Health and well being
- Tackling deprivation

Joint Health and Wellbeing Strategy

The Health and Wellbeing Strategy also has a particular influence. With overarching themes of keeping well and promoting independence, this outlines the commitment to improving health and wellbeing through local commissioning and service planning and covers the following themes:

- Preparing for a healthy life
- Wellbeing in the community
- How we live
- Care when needed

The "How we Live" theme in particular has an objective of Encouraging healthier lifestyles with a focus on reducing obesity and preventing long term conditions through promoting physical activity

This is reflected in the Draft Healthy Weight Needs Assessment, the Fit and Active Barnet Framework, the Parks and Open Spaces Strategy and Tree Policy, and also in draft masterplans for Copthall Sports Hub and Mill Hill Open Spaces, West Hendon Sports Hub and Barnet Playing Fields/King George V Playing Fields Sports Hub, that are referred to more fully in relation to Outcome 1: London's streets will be healthy and more Londoners will travel actively.

Air Quality Action Plan

The Air Quality Action Plan 2017-2022 outlines the actions that the borough will deliver between 2016 and 2021 in order to reduce concentrations of pollution and exposure to pollution, thereby positively impacting on the health and quality of life of residents and visitors to the borough. It identifies the significant role played by road transport in poor air quality and actions have been identified under six broad topics:

- **Emissions from developments and buildings:** emissions from buildings account for about 15% of the NOX emissions across London and so have a significant impact upon overall NO2 concentrations;
- **Public health and raising awareness of causes of pollution:** increasing awareness can drive behavioural change to lower emissions as well as to reduce exposure to air pollution;
- **Delivery servicing and freight:** vehicles delivering goods and services are usually light and heavy duty diesel-fuelled vehicles with high primary NO2 emissions;
- **Borough fleet actions:** The Council fleet includes light and heavy duty diesel-fuelled vehicles such as mini buses and refuse collection vehicles with high primary NO2 emissions. Tackling the Council's own fleet means leading by example;
- **Localised solutions:** these seek to improve the environment of neighbourhoods through a combination of measures; and
- **Cleaner transport:** road transport is the main source of air pollution in London. A change to walking, cycling and ultra-low emission vehicles (such as electric) needs to be incentivised as far as possible.

Sub-regional priorities

The LIP is also expected to reflect sub-regional priorities. Barnet falls within the North London sub-region, but works closely with boroughs in the West sub-region. The challenges below are those identified in sub-regional transport plan documents as particularly relevant.

Challenges in every sub-region

Improve air quality to meet and exceed legal requirements and ensure health benefits for Londoners

Transform the role of cycling and walking in the sub-region

Meet CO2 targets

North London-specific Challenges

Facilitate and respond to growth, especially in Brent Cross/Cricklewood and the Upper Lee Valley

Relieve crowding on the public transport network

Manage highway congestion and make more efficient use of the road network

Enhance connectivity and the attractiveness of orbital public transport

Improve access to key locations and jobs and services

West London-specific Challenges

Enhance east-west capacity and manage congestion

Improve access to, from and within key locations

Enhance the efficiency of freight movement

Improve north-south public transport connectivity

Improve land-based air quality

A long term Transport Strategy for the borough is in development that will consist of individual strategies relating to specific transport modes developed via a coordinated approach and guided by a single set of strategic objectives and overarching vision. It is intended to address:

- Road Safety improvements
- Health and Wellbeing
- Public Transport Improvements:
- Sustainability and Environmental impact:
- Private transport:
- Accessibility:

- Parking provision and enforcement:
- Freight movement in the Borough
- Reducing congestion and demand management
- Pan London issues
- Transport Innovation and horizon scanning

Changing the transport mix

Challenges and opportunities

The aspiration to increase sustainable travel to a mode share of 80% presents significant challenges for Barnet, where the car remains an important mode of transport. A significant number and proportion of car trips within and across Barnet originate elsewhere and are between origin and destination points outside of the Borough on key strategic routes (e.g. M1, A1, A41, A406). Equally, the origins and destinations of traffic on these routes are not necessarily within Barnet and traffic reduction strategies will require cross-borough collaboration significant input, and potentially funding, from TfL.

Those who administer such roads (TfL and Highways England) must help contribute to vehicle reduction targets on their networks in Barnet, especially in relation to freight.

Transport Mode Share in Barnet is set out below, and compared with the Outer London and Greater London position. This is derived from TfL's London Travel Demand Survey

Table 3 Londoners' trips by borough of origin, trips per day and shares by main mode, average day (7-day week) 2014/15 to 2016/17

	Trips per day (000s)	Rail	Under-ground /DLR	Bus/ tram	Taxi/ other	Car/ motor-cycle	Cycle	Walk	All modes
Barnet	809	2%	7%	13%	1%	46%	1%	31%	100%
Outer London	9,821	4%	5%	13%	1%	47%	2%	28%	100%
Greater London	18,165	5%	9%	14%	2%	34%	3%	33%	100%

The equivalent proportions of travel by borough residents by walking, cycling and public transport over the same period was 55%. (The figures for borough of origin and for borough residents can be expected to differ as resident trips may be outside the home borough).

The more limited public transport options available for orbital travel and to destinations in adjoining areas outside London make increasing the mode share by sustainable modes particularly challenging.

Work with partners seeks to secure new and revised public transport routes in the borough including the introduction of the West London Orbital Line (Dudding Hill Line) from Brent Cross and Crossrail2 to New Southgate. Current work with TfL in conjunction with growth in Colindale has led to funding of extension of the 125 bus route that will help improve the options for orbital transport in Barnet

The borough will continue to press TfL to enhance the bus network in particular to better serve orbital corridors in the borough. Potential routes for improvement, a number of which might form the basis for express bus provision in Barnet in the future, are identified in relation to MTS
Outcome 5: The public transport network will meet the needs of a growing London at page 57. The borough is also seeking improvement to serve hospitals and existing and future leisure hubs.

Opportunities to deliver new cycling routes especially in relation to delivery of a strategic network of cycling and walking routes are identified in relation to MTS
Outcome 1: London's streets will be healthy and more Londoners will travel actively at page 31. Programmes of cycle training and promotion and support will complement this delivery.

Proposals to deliver walkable neighbourhoods and healthy streets improvements around town centres and transport hubs will also complement the strategic network of routes making walking more attractive for short journeys.

Even with improvements to public transport, walking routes and cycling routes, reliance on the car will remain important in outer London boroughs and therefore the use of the car in these locations should not be made more difficult than it needs to be. Residents choose to own a car or cars for a variety of reasons and, where other alternatives exist may nevertheless choose to use these in preference to the car. However, where attractive alternatives are not available a car may be seen as necessary for occasional use.

Accessibility and journey time is much more nuanced than an approach based purely on published Public Transport Accessibility Levels (PTAL) would suggest, since these only take account of access to any public transport provision, and takes no account of whether that provision can serve the intended destination. Recent work undertaken by the Borough indicates that there is a considerable mismatch in PTAL level depending on whether a predominantly radial or orbital approach is taken to determining accessibility. Some locations in the south of the Borough suffer from

poor orbital connections, whereas others on the periphery have particularly poor radial connections.

In Barnet in particular the high numbers of private and faith schools, with larger catchments mean that the opportunity to reduce school run traffic is less than it might be where catchments are smaller, although work with schools and TfL over provision and use of private and public bus services will continue.

Potential orbital express bus provision and demand responsive bus transport may go some way to addressing some of these issues, but it is likely that many residents will continue to find private cars, or other car based travel such as car-clubs, taxis or private hire vehicles the mode of choice for many journeys. Demand responsive, app-based travel is already changing the way people make journeys and can also be expected to affect car ownership and transport mode share. The impacts and opportunities that this provides will be considered further through the borough's long-term transport strategy.

Through public transport and walking and cycling improvements the borough seeks to increase the options available for travel without being reliant on access to a car. Improved bus transport, particularly for orbital journeys and journeys to adjoining areas, and capacity improvements across all types of public transport are a necessity in order to reduce levels of car dependency sufficiently to meet the mode share ambition.

Where public transport provision is good the resulting reduced levels of car dependency mean that opportunities for car-free and car-lite development may exist. Development in a number of Barnet's regeneration and development areas is already coming forward with reduced levels of car parking being required and proposals to improve walking, cycling and public transport provision in these locations sit alongside these. As public transport, in particular, improves the opportunities for car-free and car-lite development are expected to increase, and on-street controls to manage this and introduction, extension and review of other parking controls including controlled parking zones (CPZs) can be expected.

The borough's emerging regeneration strategy focuses on the borough's town centres and main transport corridors which will concentrate development in areas with better public transport provision.

The borough's emerging long term transport strategy will explore options including demand management options, permitting and emissions, workplace parking levy, demand responsive travel, car clubs, electric vehicles and charging point infrastructure and how this will influence future movement within the Borough, car free and permit free developments, approach to development control and planning

conditions, supporting development in the Borough via “future proofed” transport infrastructure on new developments and transport innovation.

Existing and developing Town Centre Strategies and the scale of change being experienced in development areas in the borough provide an opportunity to make changes that make improvements against the range of interconnected Healthy Streets indicators that help to focus improvements on changes that can improve the experience of people using the space, encouraging increased activity in these spaces and among the population.

The indicators also provide a means by which the experience in different areas can be compared and it is proposed that many physical interventions identified in this plan would incorporate Healthy Streets assessments to help ensure these types of benefits are incorporated into the schemes, and to prioritise proposals. However like other parts of London, Barnet is a diverse borough with differing street environments, and areas of dense and sparse housing settlement. Therefore, the Healthy Streets approach is unlikely to become a “one size fits all” approach for Barnet.

Borough objectives

Barnet’s transport objectives all contribute to achieving the overarching mode share aim for Barnet and for London, as well as delivering against the various mayoral outcomes.

Table 4 - Borough Transport Objectives

Borough Transport Objectives	Delivers against
A. To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities, so reducing car-dependency.	Overarching mode share aim

• Develop a strategic network which aims to increase use and break down barriers associated with walking and cycling, including high quality on-road and off-road cycle routes suitable for cyclists of a range of abilities that reflects the demand and the potential demand identified in TfL's Strategic Cycling Analysis. • To secure improved public transport connections to leisure facilities, especially the developing sports hubs. • To support and promote active travel opportunities and other alternatives to private car use, so increasing physical activity and reducing dependency on car use and ownership.	Outcomes 1, 3, 5, 6, 7
B. To apply Healthy Streets principles, to deliver a range of improvements • in Colindale and Brent Cross to deliver new liveable neighbourhoods with walking cycling and public transport at their core. • in Town Centres including town centre Transport Hubs, and in development areas in line with Town Centre Strategies and Development Frameworks, • in conjunction with proposals for main road corridors and major junctions; • to assess areas around non-town centre transport hubs and stations to identify a priority for other Healthy Streets Improvements.	Overarching mode share aim Outcomes 1, 2, 3, 5, 6, 7
C1. To seek to achieve the Vision Zero ambition of zero Killed or Seriously Injured Road Traffic Casualties by 2041. Promote safer behaviours and reduce road danger by: • Delivering programmes of Road safety, Education, Training and Publicity • Introduce targeted Engineering Schemes to address collision hot-spots, including major proposals that apply Healthy Streets principles; • Delivery of 20mph areas around schools and other areas where pedestrian activity is high; • Working with TfL and other stakeholders to facilitate introduction of direct vision standards for lorries and other vehicle improvements	Overarching mode share aim Outcomes 1, 2
C2. To improve security and reduce fear of crime • Continue to work with partners to deliver multi-agency interventions in areas where there is persistent crime and ASB in public spaces	Overarching mode share aim

• Work with the Metropolitan Police to identify 'at risk sites', follow national good practice and the appropriate use of Hostile Vehicle Mitigation	Outcomes 1, 2
D. To promote, enable and support more sustainable travel to school, workplaces and other destinations, increasing transport choice and reducing dependency on car use and ownership • Increase the proportion of schools developing travel plans and achieving STARS accreditation, especially the proportions achieving higher levels of accreditation; • continue to deliver educational initiatives and engineering schemes to support school travel plans including, piloting school street proposals; • support car-free and car-lite development in areas of existing good public transport provision and also over time in locations that become good for public transport • requiring travel plans and delivery and servicing plans for new developments and work with other organisations to ensure these are robust • in conjunction with the borough's relocation to new offices in Colindale to reduce car based travel and pilot new approaches • continually reviewing parking provision on-street and in borough controlled car parks including introduction, extension and review of CPZs, reviews of town centre demand and parking provision, application of emissions based permits, making provision for car clubs and electric vehicle charging and applying controls around car-free and car-lite development • to facilitate a mixed economy of car club provision within the borough, providing an alternative to car ownership for occasional trips	Overarching mode share aim Outcomes 1, 3, 8
E. To improve air quality in Barnet and protect residents and visitors, especially children from exposure to pollution; • facilitate Air quality audits on remaining schools in areas of poor air quality and facilitate implementation of identified measures from audits • Medium term – work with adjacent boroughs to press for and develop proposals for a sub-regional extension and tightening of the ULEZ. • deliver open access Electric Vehicle Charge points within Barnet including provision of lamp column chargers • work with town teams and other community groups to facilitate car-free days and events	Overarching mode share aim Outcomes 1, 2, 3, 4

• Regularly review parking charges and standards related to electric vehicles to promote use • Increase greening and tree planting	
F1. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough. • Delivery of Brent Cross West Station • Support and facilitate the introduction of the West London Orbital Line (Dudding Hill Line) from Brent Cross and Crossrail2 to New Southgate • Work with TfL to review bus routes to serve new development and less accessible locations and to realise the delivery of orbital express bus provision and demand responsive public transport • Explore potential for coach facilities in conjunction with Brent Cross West/Brent Cross south.	Overarching mode share aim Outcomes 3, 5, 7, 8, 9
F2. Deliver programmes of Bus Priority improvements, especially focusing on locations that provide benefits for buses serving development areas, orbital movement and higher passenger numbers • Review parking provision and parking restrictions to reduce delays to buses and other traffic at peak times. • Consider opportunities to introduce bus lanes operating during peak hours, particularly on wide roads where tidal parking restrictions already operate. • In conjunction with Healthy Streets improvements on major roads consider re-balancing the provision of road space to provide facilities that better support bus movements. • Working with TfL identify other minor improvements that will deliver cumulative benefits. • In conjunction with bus stop accessibility improvements make it easier buses to access and leave the stop so reducing overall delays.	Overarching mode share aim Outcomes 3, 5, 7, 8, 9
G. Facilitate the introduction of step-free facilities at stations and accessible bus stops to help make public transport accessible for all passengers, directly or through support of TfL and National Rail proposals and development opportunities. • Support step-free proposals for Mill Hill East, Burnt Oak, Colindale and Brent Cross northern line stations	Outcomes 3, 6, 7, 8

• Deliver the new Brent Cross West station with step-free facilities and support Network Rail to deliver step-free facilities for Mill Hill Broadway station Increase the percentage of accessible bus stops in Barnet from the current 91% to 95% by 2025 and in the longer term to closer to 100%.	
H. To secure significant regeneration and growth across the borough's opportunity areas based upon sustainable development principles with the majority of trips carried out via public transport on foot and by cycle with a reduced reliance on the private car; • delivery of Brent Cross Rail Freight Facility and delivery of a construction consolidation centre for the Brent Cross development; • setting out borough-wide requirements and best practice for new development, in particular in the Green Infrastructure SPD and Sustainable Design and Construction SPD which incorporate guidance regarding climate change resilience and adaptation, green transport and access, air quality, noise and sustainable urban drainage	Overarching mode share aim Outcomes 1, 3, 4, 8, 9

Mayor's Transport Strategy outcomes

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

Challenges and opportunities

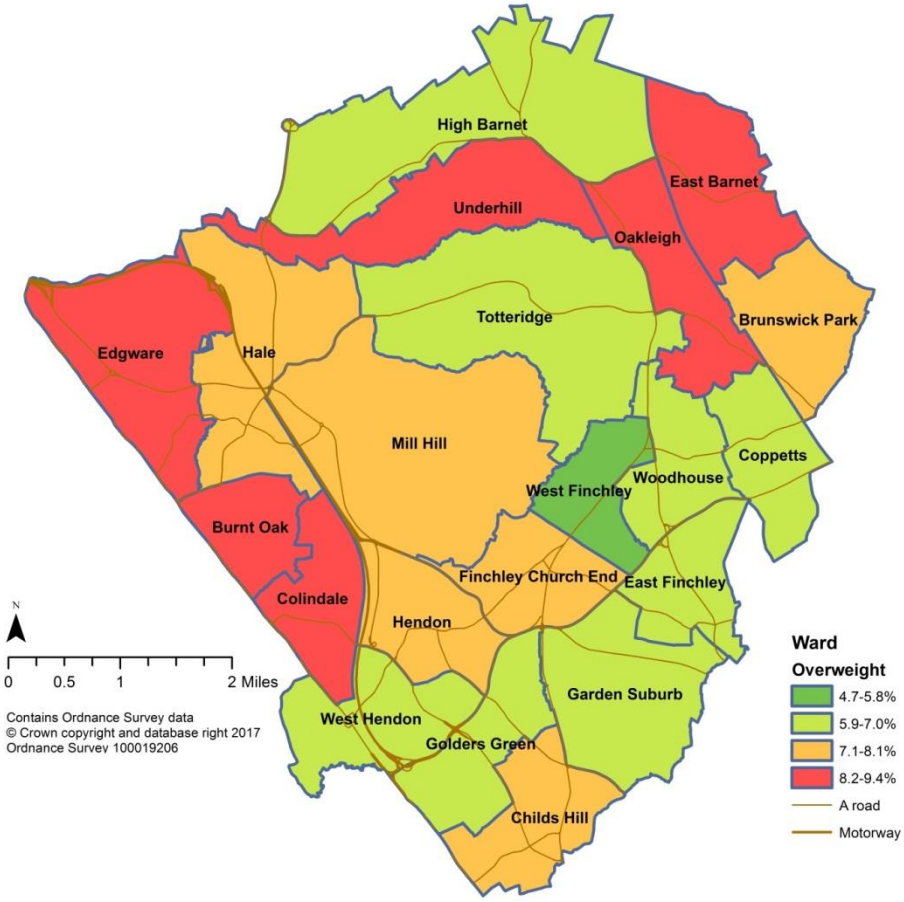
Barnet's Draft Healthy Weight Needs Assessment identifies the role that healthy streets and active travel can play in tackling health issues associated with unhealthy weight.

It notes a number of influences that have the scope to be tackled on a local scale (built environment, physical activity, education and information, food and travel). Several of these are particularly relevant in the context of the LIP.

There is a large variation in physical activity levels and obesity amongst GP areas and practices in Barnet. The surgeries with the highest recorded prevalence are situated in the west of the borough in Burnt Oak and Edgware, and in the east of the borough in Woodhouse, Brunswick Park and East Barnet.

Similarly, when looked at by ward, there is variation in overweight and obesity levels among children in Barnet.

Figure 4 -Prevalence of clinical 'overweight' among Barnet Reception Year pupils aged 4-5 years (percentage of children with a weight category) by Barnet ward, 2016/17



Source: Public Health England (2016/17 National Child Measurement Programme Pupil Enhanced Dataset)

Among Reception aged children, prevalence of overweight is highest in wards in the west (Burnt Oak, Colindale and Edgware) and north of the borough (Oakleigh, East Barnet and Underhill), and among year six children is highest in West Hendon, Childs Hill, East Barnet and Oakleigh whilst prevalence of obesity among both reception age and year six aged children is highest in wards in the west of the borough.

Several of these wards are in locations subject to significant change and development, in the vicinity of the Brent Cross Cricklewood regeneration, West Hendon and Colindale development areas in the west of the borough, and the Dollis Valley development in Underhill ward.

Currently 28% of residents do at least 20 minutes of active travel each day. The MTS envisages that 70% of residents would do so by 2041. There is a significant challenge in influencing large numbers of people to make the step change in activity

levels envisaged by the Mayor, and even if motivated to do so some residents may prefer to be active in other ways in order to stay healthy.

Barnet Council's Child Death Overview Panel (CDOP) is recommending in its report for the 2016/17 year the promotion of the provision of safe play spaces and traffic calming measures around new high-density developments. Liveable Neighbourhood proposals for Colindale/Grahame Park would be particularly useful in addressing CDOP recommendations in Colindale/Grahame Park.

Public Health is developing marked school routes as part of the Digital Resilience Schools programme which will be expanding to include physical activity in the coming year.

Barnet Council's Fit and Active Barnet (FAB) Framework, Parks and Open Spaces Strategy and Tree Policy confirm the Council's approach to getting more people into physical activity more often, using greenspaces as alternative routes through the borough and between sites and resourcing and supporting tree planting to address atmospheric pollution

The **Fit and Active Barnet Framework** includes actions around:

- Influencing planners and key policy makers to build and promote healthier and more active communities within new developments and regeneration schemes. This also includes maximising the use of way finding signage and challenging the presence of 'no ball games' signs
- Enabling promoting and supporting plans for active travel across Barnet, through a strategic network which aims to increase use and break down barriers associated with alternative travel methods e.g. walking and cycling

The **Parks and Open Spaces Strategy** identifies outcomes that include:

Sustainable travel – facilitating the growth of walking and cycling: To promote the inter-connectedness of the borough's parks and open spaces and the adoption of alternatives to private car use. This includes an action:

- To identify opportunities to develop and promote the borough's walking and cycling network, including school travel plans by 2017

Quality of the environment and its management incorporating actions:

- To Identify locations for tree planting across the borough with a focus on:
    - committing to a programme that involves a net gain in trees across the borough

- strengthening the quality of the landscape (through planting avenues, tree groups, park boundaries and woodlands)
- addressing urban warming (tree planting concentrated in the south of the borough)
- addressing NO2 (tree planting next to major roads) from 2016

Copthall Sports Hub and Mill Hill Open Spaces Master Plan (draft currently in consultation) includes proposals for significant improvements to access for pedestrians, cyclists to and through the sites including improved routes for pedestrians and cyclists between Copthall and the Middlesex University campus at Hendon

Draft masterplans are currently in preparation for the **West Hendon Sports Hub** and **Barnet Playing Fields/King George V Playing Fields Sports Hub**. These also include proposals for ways of getting people to move into and through the sites on foot or on bikes. This West Hendon draft masterplan links to the West Hendon Regeneration Initiative. The Barnet Playing Fields draft masterplan area is adjacent to the Dollis Valley Regeneration Initiative and opportunities include links to the Dollis Valley Greenwalk and other green corridors for walking and cycling within the Borough.

Work in Colindale and Burnt Oak to support the Colindale Area Action Plan involves an initiative to link Montrose Playing Field/Silkstream Park, Colindale Park and Rushgrove Park together and to adjoining greenspaces and pedestrian/cycling paths. Again, the initiative will result in creating additional facilities and opportunities for people to move around the Borough by means other than the car.

Figure 5 shows, locations with the current highest levels of cycling in Barnet (am peak 2014), and ***Figure 6*** the locations of highest cycling potential in terms of switchable trips from other modes (generally short trips that do not involve carrying heavy loads).

Existing cycling trips are highest in East Finchley but with some higher levels in Golders Green, Childs Hill (Cricklewood) and at the A1000 crossing of the North Circular Road (possibly due to limited alternative options for crossing the North Circular road).

Areas with high potential include West Hendon and areas around Brent Cross, and also links from Golders Green to Hendon (Golders Green Road/Brent Street/Greyhound Hill, Finchley Central, North Finchley as well as parts of the A1000, Ballards Lane and Hendon Lane/Finchley Lane, much of which is paralleled by existing off road paths.

Figure 5 - 2014 (am peak) cycling

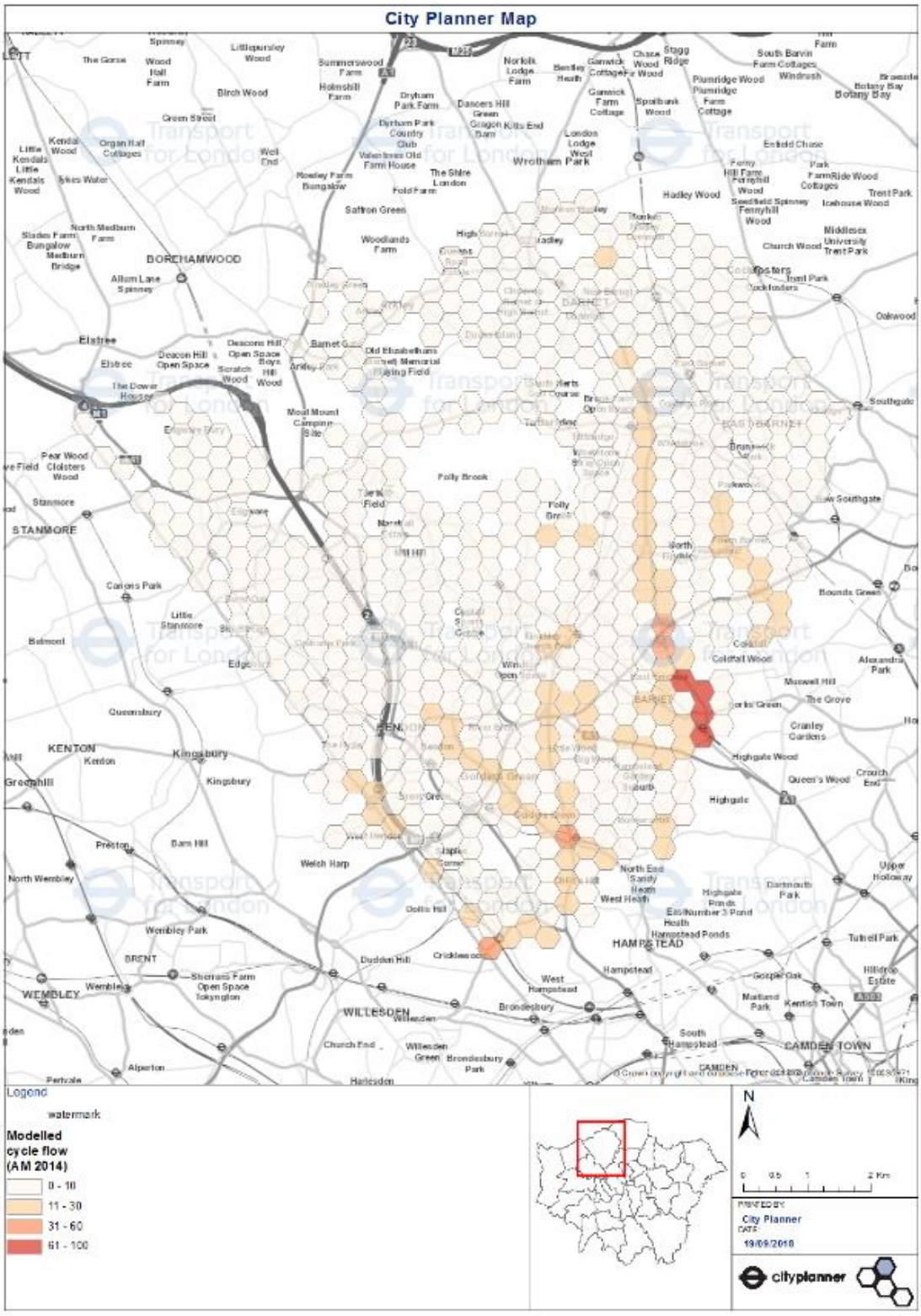
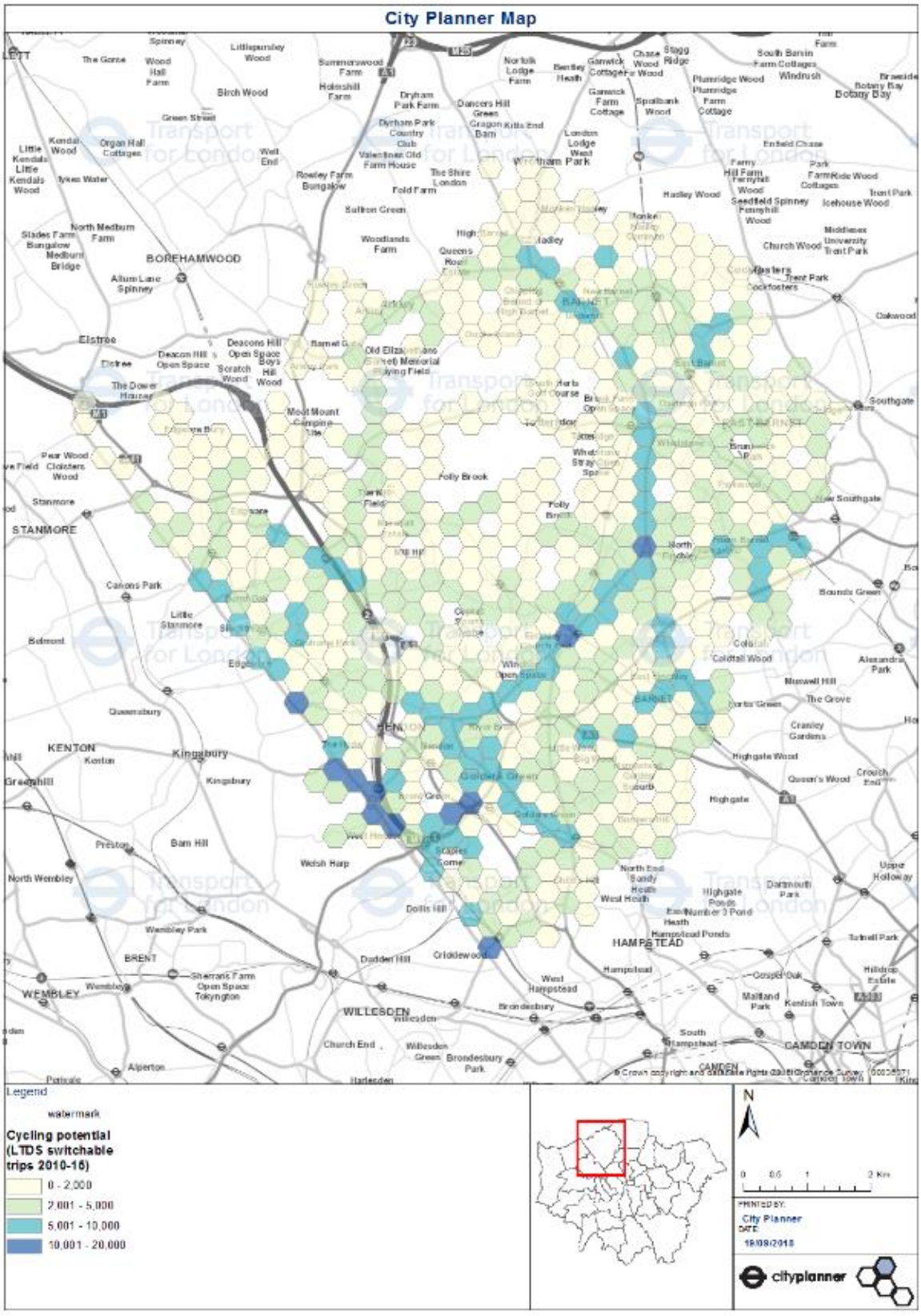


Figure 6 - Cycling potential (switchable trips 2010-15)



TfL's strategic cycling analysis identifies prioritised strategic cycling connections within Barnet. It takes account of locations that currently have high cycle flows, locations where there are significant numbers of trips by other modes that might be cycled (based on distance and purpose) and gives additional priority to growth areas.

This includes, among the highest priority connections, routes broadly following the A5 and A1000 strategic roads in Barnet. These routes are potentially attractive for some cyclists but would require significant work that would have impacts on other road users if they were to become suitable for less experienced cyclists.

In conjunction with holistic healthy streets proposals in certain town centres provision on parts of this network could be feasible in the longer term. The North Finchley Town Centre Framework Supplementary Planning Document (SPD) includes a future highway layout that could support this in that town centre for instance.

Alternative and broadly parallel quieter routes are also in existence or developing that may serve some journeys by all cyclists and provide for local and/or leisure trips in particular. This range of proposals together with a delivery of new routes through other regeneration and development projects including Brent Cross Cricklewood, the in-development North Finchley to Hornsey Quietway, selected existing off road routes and some on-road links provides a potential strategic cycling network for the borough for further development.

An anticipated strategic review of the A5 and master-planning for Brent Cross West provides an opportunity to provide a route for cyclists paralleling the A5 linking Cricklewood to Brent Cross and then, through emerging and existing proposals, via Brent Cross Cricklewood, West Hendon, Colindale and Burnt Oak.

This would complement local walking and cycling networks to be delivered through development proposals in Brent Cross South and via a proposed Liveable Neighbourhood bid for Colindale.

As new housing units are being developed in Colindale, often without parking provision, a new generation of Colindale residents will be joining the community with less dependency on car usage.

The Colindale regeneration programme is catering for future demand and is pulling together the developments, creating a sense of place and redefining how the area is understood and experienced. There are however a number of interventions where there is currently no identified funding.

LBB's Colindale Liveable Neighbourhood proposal is about bridging that gap, accelerating outcomes for Colindale by further encouraging a modal shift in transport choice with a strong accent on public transport provision, walking and cycling.

A review of the quality and usability of existing on and off-road routes shown in Figure 7 has also commenced which will contribute to development of a strategic network of walking and cycling routes in the borough.

In the period to 2021/22, delivery is expected of proposals below which are also identified in Figure 7:

- (1) Quietway Cycle Route from North Finchley to Hornsey,
- (2) routes through Silkstream and Montrose Parks linked by a road crossing of Montrose Avenue.
- (3) elements of development related provision in Brent Cross, West Hendon and Colindale contributing to a future route in the west of the borough.
- (4) improvements to bridges on the existing walking and cycling route in the Dollis Valley;
- (5) improvements to cycle route provision near Dollis Valley estate, (subject to developing leisure masterplan).

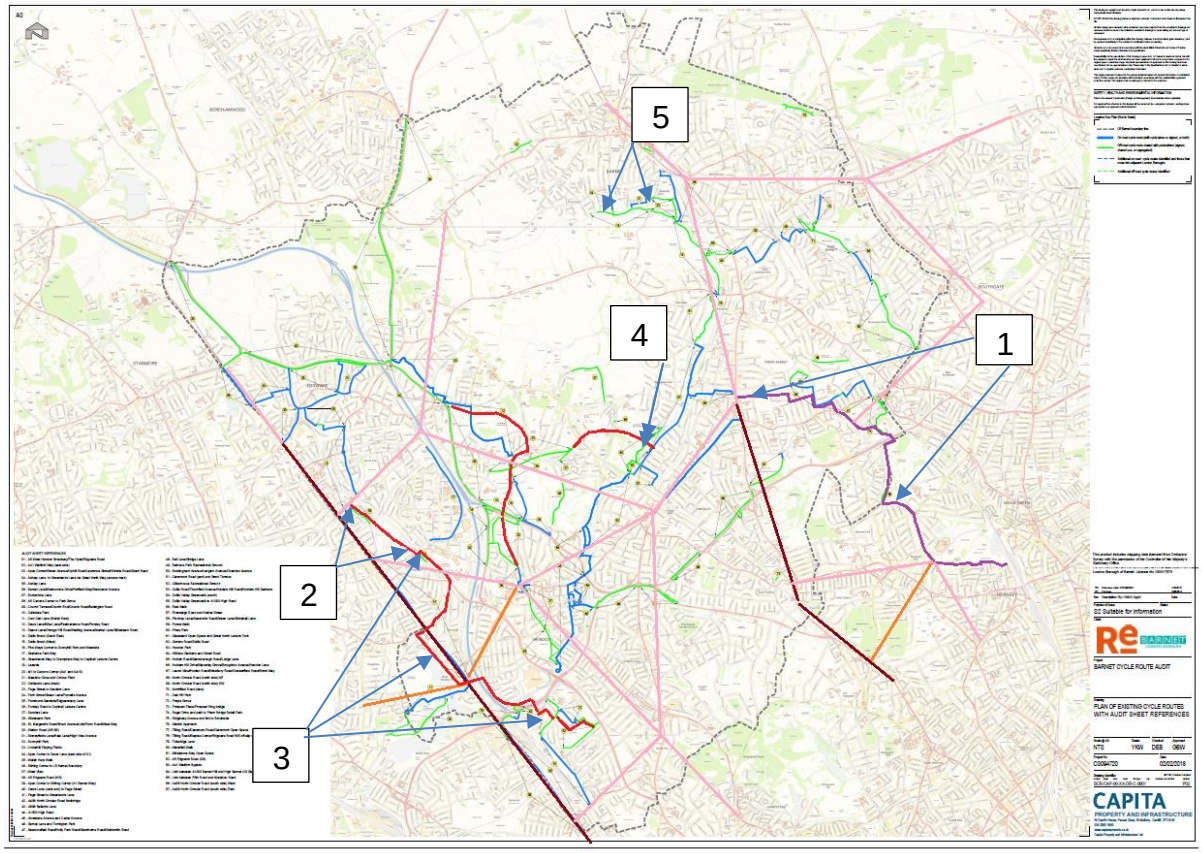
The development of a strategic network in conjunction with development of the borough's long term transport strategy will identify the longer term delivery priorities for routes in the borough, addressing barriers such as fear of traffic or public safety concerns and severance, as well as improvements needed on existing routes and meeting cycle parking needs, including for residential use as well as at destinations including transport hubs.

Greater availability of e-bikes provides opportunities for up-take of cycling among people who would previously have avoided this, particularly in the more hilly parts of Barnet. A dockless cycle hire pilot is also being developed in Barnet, making cycling available to those who may not have access to their own cycle or who wish to use a bike for part of a journey.

Improvements to visibility through additional information are envisaged and work is underway on a Digital Behaviour Change Intervention to develop a digital solution to help encourage greater physical activity, as well as delivery of cycle training and other publicity, support and engagement to encourage potential cyclists.

Barnet's extensive rural and urban off road footpaths also provide a significant resource for walking for both transport and leisure purposes. Improvements to increase the visibility of routes through publicity and local improvements will enhance this provision. Work to develop a strategic network and walkable neighbourhood plans would also inform development of a Rights of Way Improvement Plan and future work to add urban paths to the Definitive Map of Public Rights of Way.

Figure 7 - Existing, planned and potential cycle routes



Existing on road route (London Cycle Guides - quality varies)

Existing off road route (London Cycle Guides - quality varies)

Quietway Route being developed

Top Potential Connections (TfL Strategic Cycle Analysis)

High Potential Connections (TfL Strategic Cycle Analysis)

Medium Potential Connections (TfL Strategic Cycle Analysis)

Other emerging routes (development and leisure masterplans etc)

Potential and emerging routes are indicative only

Particular locations where strategies and development frameworks provide opportunities to make changes addressing multiple indicators to deliver liveable neighbourhoods in town centres in particular are:

- Improvements have been developed to provide wider pavements in Chipping Barnet as part of the strategy for that town centre

- Improvements are in development for an improved junction on the A5 at Burnt Oak making safety and pedestrian crossing improvements as well as other public realm improvements identified from the town centre strategy that address healthy streets indicators such as “shade and shelter”, “things to see and do”, “places to stop”.
- The North Finchley Town Centre Framework Supplementary Planning document envisages removal of the gyratory road arrangement with closure of part to most vehicles in that area, and provides the framework for public realm improvements to deliver against the indicators.
- In Finchley Central, improvements developed from the Town Centre Strategy and complementing development of TfL assets provide opportunities to reduce severance and improve conditions for walking and cycling.
- Similar opportunities exist in Edgware to address multiple Healthy Streets indicators through Town Centre Improvements guided by the Supplementary planning document for that town centre.
- In conjunction with provision of improvements in New Southgate Opportunity Area linked to provision of Crossrail 2 a Liveable Neighbourhood in New Southgate is envisaged.
- An anticipated strategic review of the A5 provides an opportunity to make improvements reflecting Healthy Streets principles in conjunction with adjacent boroughs and TfL
- Golders Green Healthy Streets improvements (based on emerging town centre strategy)
- Other existing and emerging town centre strategies provide opportunities to develop make similar changes.

Borough Objectives

The main borough objectives that addresses this outcome are:

A. To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities, so reducing car-dependency.

- Develop a strategic network which aims to increase use and break down barriers associated with walking and cycling, including high quality on-road and off-road cycle routes suitable for cyclists of a range of abilities that reflects the demand and the potential demand identified in TfL’s Strategic Cycling Analysis.
- To secure improved public transport connections to leisure facilities, especially the developing sports hubs.
- To support and promote active travel opportunities and other alternatives to private car use, so increasing physical activity and reducing dependency on car use and ownership.

B. To apply Healthy Streets principles, to deliver a range of improvements

- in Colindale and Brent Cross to deliver new liveable neighbourhoods with walking cycling and public transport at their core.
- in Town Centres including town centre Transport Hubs, and in development areas in line with Town Centre Strategies and Development Frameworks,
- in conjunction with proposals for main road corridors and major junctions; to assess areas around non-town centre transport hubs and stations to identify a priority for other Healthy Streets Improvements.

Other objectives that deliver against this are:

C1. To seek to achieve the Vision Zero ambition of zero Killed or Seriously Injured Road Traffic Casualties by 2041;

C2. To improve security and reduce fear of crime;

D. To promote, enable and support more sustainable travel to school, workplaces and other destinations, increasing transport choice and reducing dependency on car use and ownership;

E. To improve air quality in Barnet and protect residents and visitors, especially children from exposure to pollution;

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

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

Challenges and opportunities

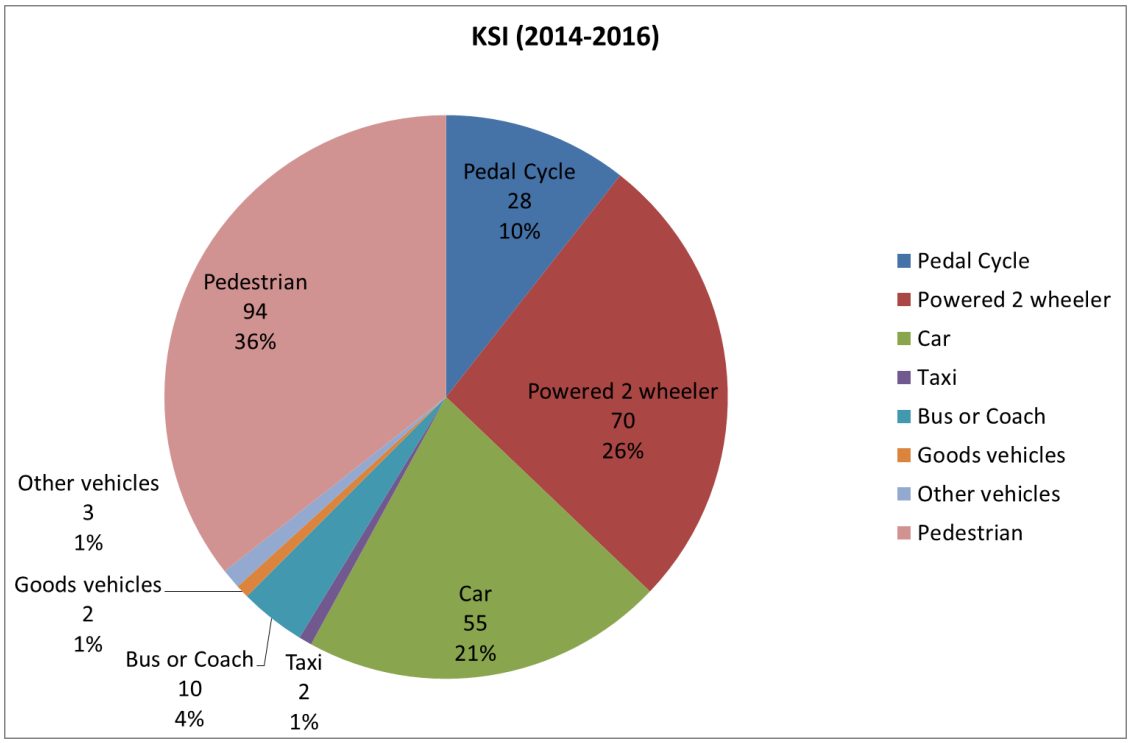
Barnet is now the largest borough in London in terms of its population; it is the borough with the third highest level of traffic in terms of motor vehicle distance travelled and the third highest total road length including the highest length of Transport for London (TfL) roads.

This combination of circumstances means that the absolute number of reported road traffic casualties in the borough has historically been one of the highest in London, for both total casualties and KSI casualties. However, when expressed as a rate based on traffic levels against population, Barnet is below average for London as a whole.

Nevertheless, any death or injury on the borough's roads is considered to be neither acceptable nor inevitable.

Vulnerable road users (pedestrians, cyclists and motorcyclists) now make up nearly three quarters of casualties killed or seriously injured in Barnet. While proportions of total casualties by vehicle occupancy / road user have varied little over the last decade, the proportions of those killed or seriously injured has shifted significantly in Barnet, with proportionally fewer car occupant casualties (previously the largest group) and proportionally more pedal cycle and motorcycle casualties.

Figure 8 - Proportions of Killed or Seriously Injured Casualties by Road User Group



Males and females in their teens and twenties are at higher risk of injury per head of population than other age groups. The risk for males, and in particular the risk of death or serious injury, is greater than for females and this increased risk continues for men into their fifties. Also, while absolute numbers are small, the risk of death or serious injury in the event of a collision increases markedly for people from their mid-eighties onwards.

The greater risk among young people and the oldest age groups highlights the challenge presented by the changing demographics in Barnet, with more young people expected, but also more people living longer.

Injury Collisions overall in Barnet tend to be focussed on A roads particularly where they pass through town centres, and this pattern is also evident for KSI collisions.

Town centres on major roads are also frequently locations where provision for pedestrians and cyclists might be improved and which also suffer from issues such as poor air quality. In such locations significant improvements to the road environment adopting the Healthy Streets approach may be the best option to address Road Danger.

About 20% of KSI casualties in Barnet occur on the M1 motorway or on the Transport for London Road Network (A1, A41 and A406), so the borough is reliant on these organisations to deliver improvements on their own network. The rate of casualty reduction on these roads in recent years has been similar to that on borough controlled roads.

Programmes of road safety education and training will be part of the means by which reduced casualties are achieved. This will include addressing the training needs of cyclists and motorcyclists who are significantly overrepresented as casualties, as well as training and publicity aimed at other road users who may come into conflict with them. Road Safety education for children and other vulnerable groups will also be provided.

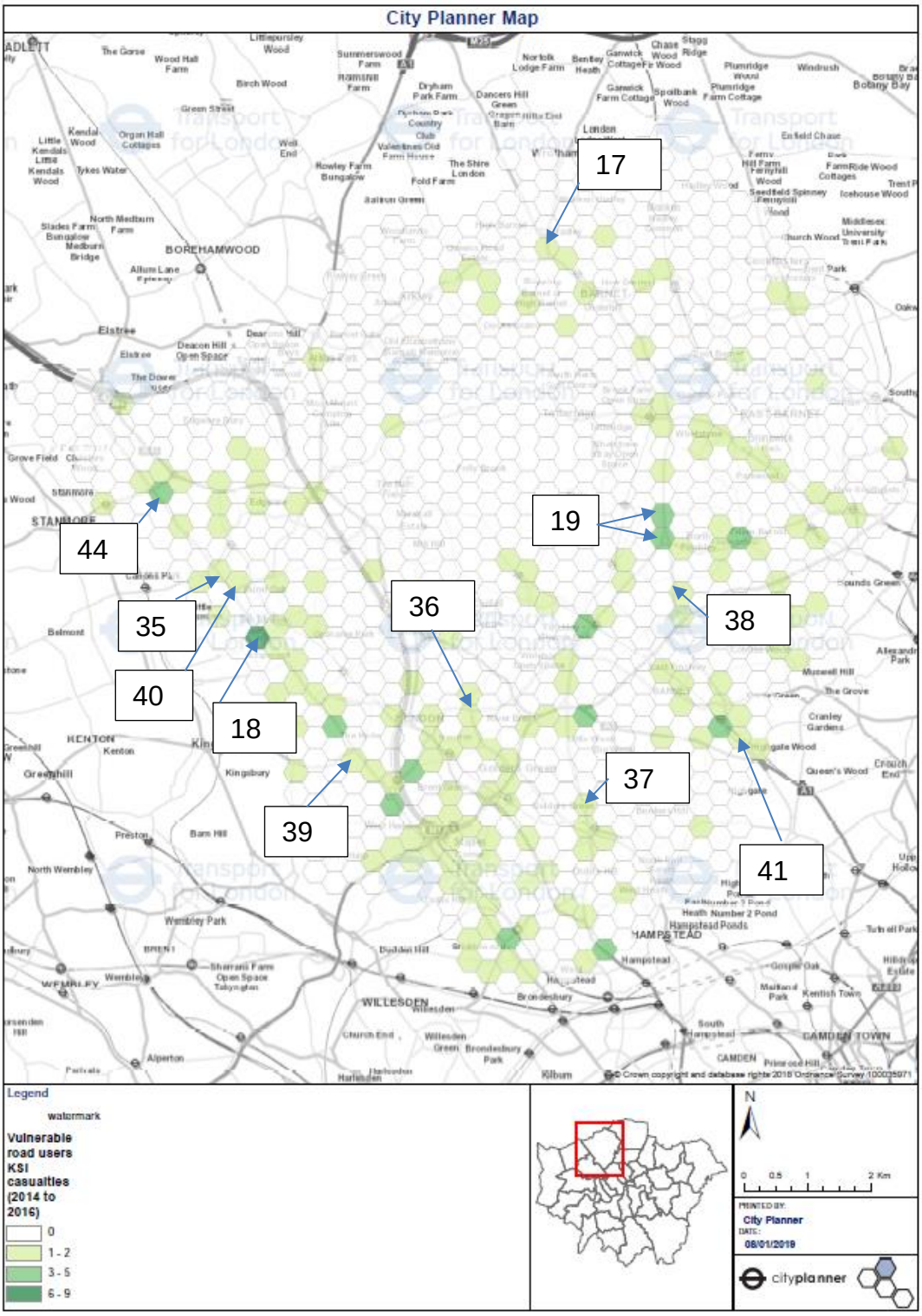
Figure 9 identifies locations in the borough where vulnerable road users have been killed or seriously injured in the period 2014 to 2016. Locations of selected junction improvement and other proposed engineering schemes identified in 254 \h * MERGEFORMAT **Table 7** are also indicated on the map.

20mph schemes will be considered for schools who identify a need through their school travel plans, and in other locations with high levels of pedestrian activity. Piloting of school street proposals, where resident traffic only is permitted at certain times to streets outside schools is also planned.

In addition the major developments occurring in parts of the borough provide an opportunity to deliver these in a way that makes travel in and around these areas safer for vulnerable road users.

Development of the Borough's long term transport strategy provides an opportunity to consider potential wider use of 20mph areas or areas with reduced traffic.

Figure 9 - Locations of vulnerable road user KSI casualties and selected junction improvement locations (number identifies proposal in Table 7)



Safer vehicles will also need to play a part. Barnet is already working with TfL and other boroughs to facilitate introduction of Direct Vision standards for lorries in London and will continue to do so to support safer vehicles on London's roads in future. As part of this Barnet will join the London Lorry Control Scheme. Support and encouragement for future vehicle technologies such as intelligent speed adaptation (ISA) may benefit from similar work. This and work around Work Related Road Risk and other Safer Vehicle issues will form part of the work considered via the borough's developing long-term transport strategy.

The borough's long term transport strategy will seek to address the challenges of reducing KSI casualties in new and innovative ways, as well as via traditional routes. The means by which the Vision Zero ambition of zero killed and seriously injured casualties by 2041 can be achieved are not yet fully known and new and future developments will be necessary to achieve this. However Barnet supports the ambition of achieving zero KSI casualties by 2041.

Crime prevention remains a key priority for Barnet

The Barnet Safer Communities Partnership (BSCP), which brings together representatives from the Metropolitan Police, Barnet Council, London Fire Brigade, the criminal justice system and other statutory and voluntary organisations involved with crime reduction and community safety and aims to:

- reduce crime, re-offending and anti-social behaviour, and
- ensure people in Barnet feel safe.

It is doing this by focusing resources on the crimes which cause the most harm or risk to individuals or communities, using a mixture of intelligence, prevention and enforcement, based on a strategic assessment of crime in the borough.

CCTV is provided in areas based on the need to address crime issues in that area and reviews of town centre and other areas aim to identify and tackle elements of the street environment that contribute to crime or make people feel unsafe, without transferring the issue to other locations.

Recent work in Burnt Oak has involved multiple agencies and council departments in addressing anti-social behaviour in and around the town centre through CCTV improvements and increased presence of various officers, securing problem areas, clean-up sessions and a Public Space Protection Order.

The council is currently working with the police in relation to establishments in the borough that may require additional safety measures for example Hostile Vehicle

Mitigation measures. The local partnership will consider a process for assessing and approving these measures.

Borough Objectives

The main borough objective that addresses this outcome is:

C1. To seek to achieve the Vision Zero ambition of zero Killed or Seriously Injured Road Traffic Casualties by 2041.

Promote safer behaviours and reduce road danger by:

- Delivering programmes of Road safety, Education, Training and Publicity
- Introduce targeted Engineering Schemes to address collision hot-spots, including major proposals that apply Healthy Streets principles;
- Delivery of 20mph areas around schools and other areas where pedestrian activity is high;
- Working with TfL and other stakeholders to facilitate introduction of direct vision standards for lorries and other vehicle improvements.

C2. To improve security and reduce fear of crime

- Continue to work with partners to deliver multi-agency interventions in areas where there is persistent crime and ASB in public spaces;
- Work with the Metropolitan Police to identify 'at risk sites', follow national good practice and the appropriate use of Hostile Vehicle Mitigation.

Other objectives supporting this are:

B. To apply Healthy Streets principles, to deliver a range of improvements

E. To improve air quality in Barnet and protect residents and visitors, especially children from exposure to pollution;

Outcome 3: London's streets will be used more efficiently and have less traffic on them

Challenges and opportunities

The borough supports the aim of reducing reliance on the private car, however, the targets set for the borough in the MTS, Draft London Plan and LIP Guidance, are considered very ambitious for Barnet.

At present approximately 55% of trips are by sustainable modes (walking cycling and public transport) and TfL modelling suggests that the borough should achieve a level of 72% by 2041 as part of achieving the Mayor's overall mode share aim. However background data has shown a 7% growth in car ownership over 10 years.

Outer London does not have the characteristics that will permit the same level of controlled parking and public transport use that can be achieved in Inner London and does not have direct control of key through routes in the borough, such as the A1, M1, A41, and A406, and a significant number and proportion of car trips within and across Barnet originate elsewhere and are between origin and destination points outside of the Borough. However the borough will work with key stakeholders such as TfL and neighbouring boroughs/local authorities to endeavour to achieve the borough's traffic reduction targets.

The Council is reviewing its car parking policy as part of the evidence base for the Local plan with an expectation that maximum parking levels for residential development will reduce in the future towards the Draft London Plan levels. However the borough will require some flexibility in relation to these standards in view of the degree to which car use is required principally because the orbital transport network across the borough requires significant improvement and enhancement before it can offer a realistic alternative to the private car.

While tight parking standards can lead to a reduction in levels of car traffic, continued car use in the less dense suburbs of Outer London remains a reality, irrespective of public transport service and reliability improvements. Car Ownership and the use of a car in these locations should not be made more difficult than it needs to be.

Residents and visitors need to have the opportunities, infrastructure and services that allow them to travel by public transport without significant time penalty, or make travelling by active means attractive, whether or not they own a car. Through public transport and walking and cycling improvements the borough seeks to increase the options available for travel without being reliant on access to a car.

Residents choose to own a car or cars for a variety of reasons and where other alternatives exist they may choose to use these in preference to the car. However, where attractive alternatives are not available the use of a car remains the only choice, and parking to accommodate this is important. Barnet's current Local Plan includes a local approach to parking marginally less restrictive than the current London Plan for residential development.

The draft London Plan car parking standards are based on Public Transport Accessibility Levels (PTAL). Accessibility and journey time is much more nuanced

than an approach based purely on PTAL would suggest, since this only takes account of access to any public transport provision, and takes no account of whether that provision can serve the intended destination. The experience of residents may be very different depending on whether a predominantly radial or orbital approach is taken to determining accessibility.

The level of development in Barnet provides opportunities to introduce or pilot new or innovative approaches to transport with lower levels of parking in accessible areas.

Where public transport provision is good the resulting reduced levels of car dependency mean that opportunities for car-free and car-lite development may exist. Development in a number of Barnet's regeneration and development areas already reflects this with supporting infrastructure and on-street controls to manage this. As public transport, in particular, improves the opportunities for car-free and car-lite development are expected to increase.

In Colindale, Brent Cross we are seeing development come forward with reduced levels of car parking being required and there are developing proposals to improve walking, cycling and public transport provision in these locations with the development of the Brent Cross Thameslink Station and developing proposals for the West London Orbital railway , extension of bus provision in Colindale and efforts to remove the Colindale roundabout and to introduce enhanced cycling and walking provision on Colindale Avenue as well as the aspiration to develop a liveable neighbourhoods proposal for Colindale.

In North Finchley and in other town centres proposals are coming forward for regeneration which propose enhanced public realm and walking and cycling provision and development of new routes and cycling infrastructure that would rebalance the relationship between the car and other modes.

Despite London boroughs and TfL having very limited control over freight trips Barnet will undertake work on a North London Freight Study to develop policies in line with the Mayor's aspirations. The Council will continue with its planned freight consolidation strategy.

Our programme of Town Centre Frameworks and Strategies identify opportunities to enhance the public realm and improve accessibility for all users. These documents seek to support the provision of a wide range of shops and services to meet the needs of diverse local populations. The Frameworks and Strategies act as the basis for the preparation of detailed transport mitigation proposals likely to be required in association with future redevelopment proposals within the Priority Town Centres.

The Council supports measures to efficiently and effectively manage freight activity arising from new development and existing buildings. Local Plan policies include ensuring major planning proposals incorporate Delivery & Servicing Plans intended to improve the safety and reliability of deliveries, help reduce congestion and minimise costs and impact. Freight Quality Partnerships, Construction Logistics Plans and Consolidation Centres are also encouraged to effectively manage all types of construction freight vehicle movement.

The Brent Cross Rail Freight Facility will reduce the demand for lorry movements overall across London however this may attract some localised lorry movements as a result. The relocation of the Brent Cross Waste Transfer Station onto the A5 will generate a number of lorry movements on that route. Use of the rail freight facility for Brent Cross Cricklewood construction material export and delivery is expected to be part of Construction Management Plans where practical to minimise construction vehicle travel distances.

A construction consolidation centre is promoted by the Council for Brent Cross Development although there may be some developer resistance to the provision and use of such a centre Through Construction Management Plans and service and delivery plans for BXC, freight vehicles are expected to be timed to arrive/depart outside of network peak hours and be managed so that they have minimal impact on the surrounding road network by use of freight management systems, routing plans and vehicle holding areas.

The borough's developing long term transport strategy will also further address freight movement and issues in the borough

Current engagement and success of schools in Barnet in relation to School Travel Plan Stars STARS awards provides a platform to develop further. Schools are supported to update their School Travel Plans and apply for accreditation. By participating in the School Travel Plan programme, the average percentage of pupils travelling to school by car in Barnet has significantly reduced. Of Barnet's over 170 schools, 98 have achieved STARS accreditation with most of these at "gold" level.

High numbers of private and faith schools, with larger catchments mean that the opportunity to reduce school run traffic is less than it might be where catchments are smaller, but Barnet continues to work with schools and TfL over provision and use of private and public bus services to help address this, as well as continuing to encourage car sharing, park and stride and cycling options where walking all the way to school is not possible.

Potential future School Streets, where resident traffic only is permitted at certain times to streets outside schools is anticipated to be a positive measure around some

borough schools. Enforcement of School Keep Clear markings by CCTV is already employed and the borough will consider whether this would be an option for enforcement of school streets. Other on-street improvements including pedestrian crossings and 20mph around schools will continue to be provided based on needs identified in School Travel Plans.

Demand responsive, app-based travel is already changing the way people make journeys and can also be expected to affect car ownership and transport mode share. The impacts and opportunities that this provides will be considered further through the borough's long-term transport strategy.

The borough is actively looking at borough wide car club provision to offer attractive transport options and also reduce demand for car ownership within the borough. Especially in new developments car clubs can permit lower levels of private car parking provision. The new council offices at Colindale will have provision of a fleet of electric pool cars to reduce overall vehicle demand and parking by staff.

Development of Town Teams across the borough provides potential for town centre events including car-free events.

Borough Objectives

The main borough objective that addresses this outcome is:

D. To promote, enable and support more sustainable travel to school, workplaces and other destinations, increasing transport choice and reducing dependency on car use and ownership

- Increase the proportion of schools developing travel plans and achieving STARS accreditation, especially the proportions achieving higher levels of accreditation;
- continue to deliver educational initiatives and engineering schemes to support school travel plans including, piloting school street proposals;
- support car-free and car-lite development in areas of existing good public transport provision and also over time in locations that become good for public transport
- requiring travel plans and delivery and servicing plans for new developments and work with other organisations to ensure these are robust
- in conjunction with the borough's relocation to new offices in Colindale to reduce car based travel and pilot new approaches
- continually reviewing parking provision on-street and in borough controlled car parks including introduction, extension and review of CPZs, reviews of town centre demand and parking provision, application of emissions based permits,

making provision for car clubs and electric vehicle charging and applying controls around car-free and car-lite development
- to facilitate a mixed economy of car club provision within the borough, providing an alternative to car ownership for occasional trips

Other objectives that address this outcome are:

A. To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities, so reducing car dependency.

B. To apply Healthy Streets principles, to deliver a range of improvements

E. To improve air quality in Barnet and protect residents and visitors, especially children from exposure to pollution;

F1. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough.

F2. Deliver programmes of Bus Priority improvements, especially focusing on locations that provide benefits for buses serving development areas, orbital movement and higher passenger numbers

G. Facilitate the introduction of step-free facilities at stations and accessible bus stops to help make public transport accessible for all passengers, directly or through support of TfL and National Rail proposals and development opportunities.

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

Outcome 4: London's streets will be clean and green

Challenges and opportunities

In the UK, air quality is most affected by traffic and industrial emissions. Exposure to air pollutants reduces life expectancy and exacerbates many health conditions. The

WHO has linked traffic-related air pollution to asthma, rhinitis, cardiovascular disease, cancer, reduced male fertility, poor birth outcomes and premature mortality. Poor air quality is also associated with higher levels of deprivation, leaving people of lower socioeconomic status disproportionately at risk of harm.

The London Borough of Barnet is meeting all of the national AQS objectives other than for the gas nitrogen dioxide (NO2) and particulate matter (PM10). It is meeting the current objectives for particulate matter (PM2.5) but as this pollutant is damaging to health at any level, it remains a pollutant of concern.

As can be seen in ***Figure 10***, the areas with highest emissions in Barnet are generally focussed on the major roads that are largely outside the borough's control. Of 15 air quality focus areas (***Figure 11***), 8 are associated with the Transport for London Road network or the M1).

Of those associated with borough roads it is envisaged that liveable neighbourhood, healthy streets and other improvements identified on page 39 and in 54 \h * MERGEFORMAT **Table 7** will help to reduce levels of exposure as identified in below:

Table 5 - Borough road focus areas and proposals that will address air quality

Focus area	**Description**
Chipping Barnet Town Centre area	Improvements have been developed to provide wider pavements and other public realm improvements in Chipping Barnet as part of the strategy for that town centre
Cricklewood Junction A407 Cricklewood Lane/A5 Broadway	Junction improvements associated with Brent Cross south development and a proposal to complement a proposed Good Growth Fund bid to deliver public realm/healthy streets/business improvements
Finchley A598 Ballards Road between Henlys Corner and Woodhouse A1003	Finchley Central, improvements to complement development of TfL assets provide opportunities to reduce severance and improve conditions for walking and cycling, and planned Mayors Air Quality Fund bid.
Friern Barnet A1003 Woodhouse Road junction with Colney Hatch Lane	North Finchley - Hornsey Quietway scheme passing nearby and current minor traffic signal improvement.

Golders Greens Junction A504/A598	Golders Green Healthy Streets improvements (based on emerging town centre strategy).
North Finchley Town Centre	Liveable Neighbourhoods proposal for North Finchley based on North Finchley Town Centre Framework Supplementary Planning document envisages removal of the gyratory road arrangement with closure of part to most vehicles in that area
Burnt Oak A5 Broadway/Watling Avenue (also Harrow/Brent)	Improved junction on the A5 at Burnt Oak making safety and pedestrian crossing improvements as well as other public realm improvements identified from the town centre strategy

A study commissioned by the Mayor for London's Office found the air around 15 Barnet schools to be polluted with NO2 above the legal EU limit of 40 µg/m³. Notably 14 of these are situated on or near Transport for London/Highways England administered roads in Barnet.

Figure 10 - NO_2 concentrations in Barnet - significantly around major roads

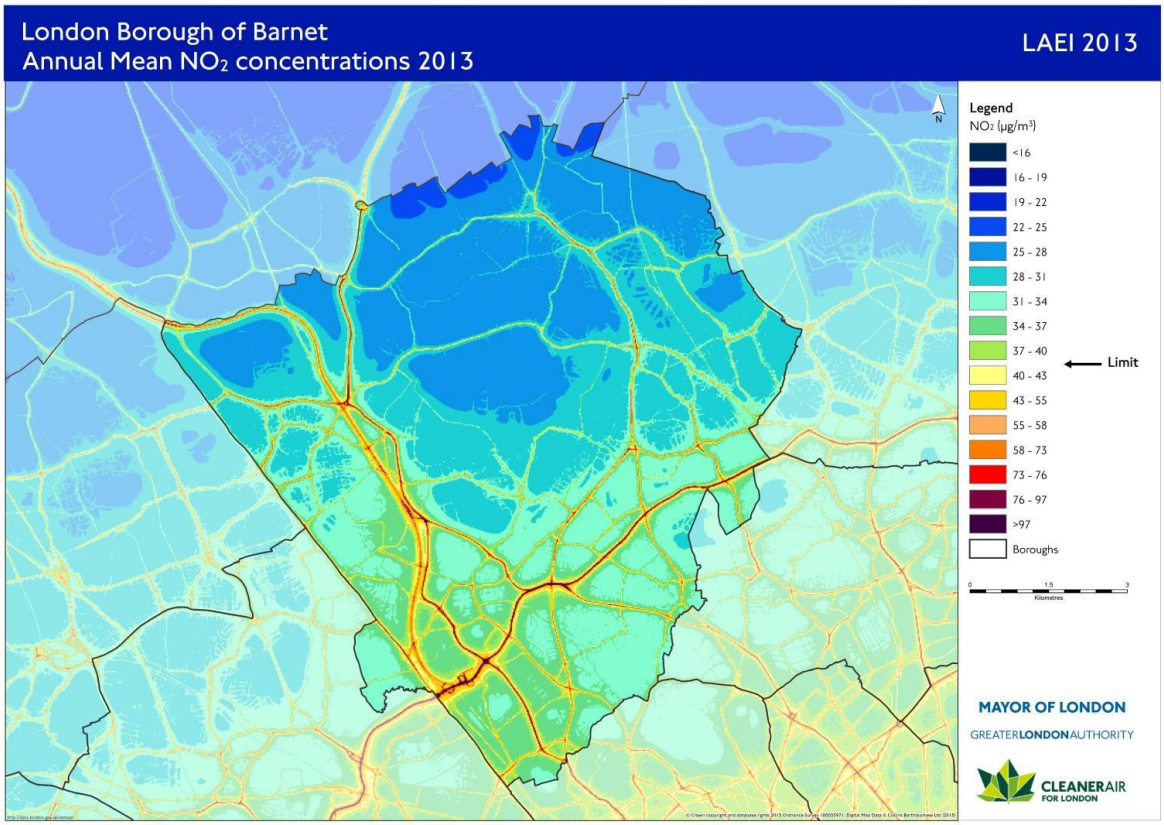
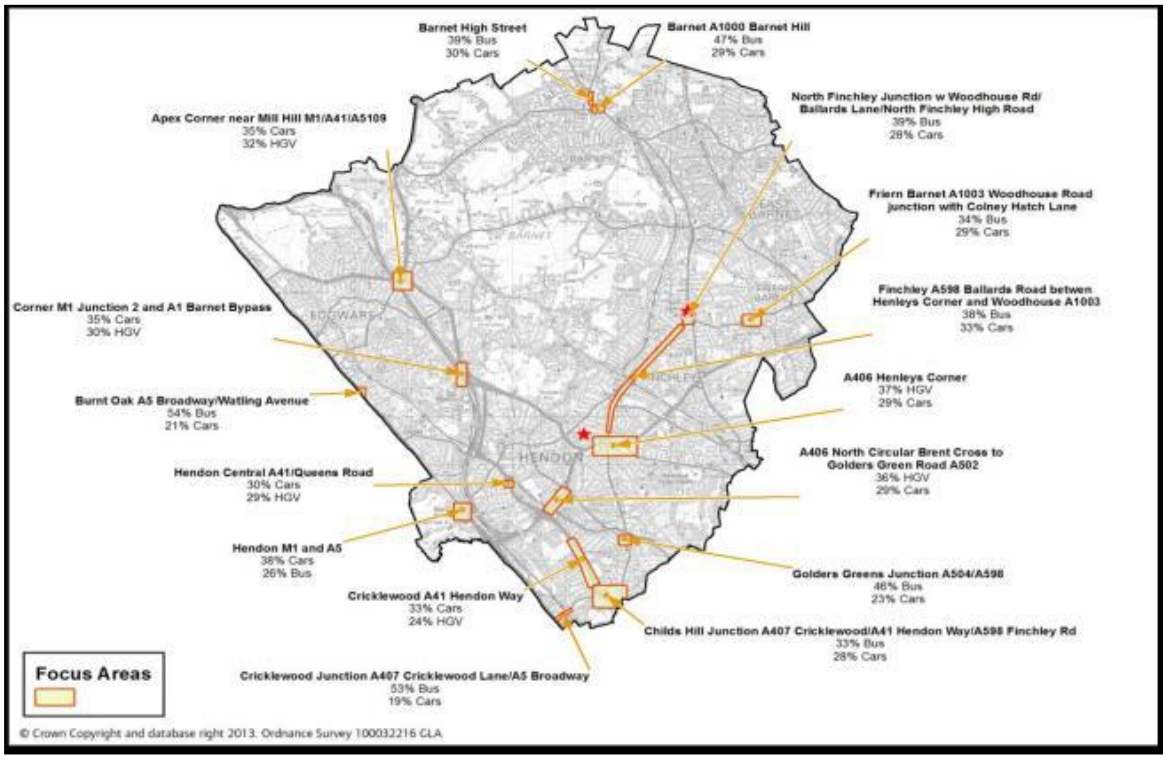


Figure 11 - Air quality focus areas in Barnet



The intention to extend the ULEZ to almost all of Greater London for heavy diesel will undoubtedly reduce NOx levels by some degree, particularly on polluting TfL roads. However much of Barnet would not benefit from extension of the ULEZ for light vehicles in 2021 up to, but not including, the North Circular. This leaves most major roads in the borough, particularly the North Circular Road, outside the zone with potential for non-compliant vehicles to use these more to avoid the zone, and the risk that roads will become even more polluted.

The borough hopes to try to address this working with other boroughs sub-regionally, but cannot be expected to have the same impact that a London-wide measure might.

Figure 12 - Proportions of NOx attributable to different transport and non-transport sources

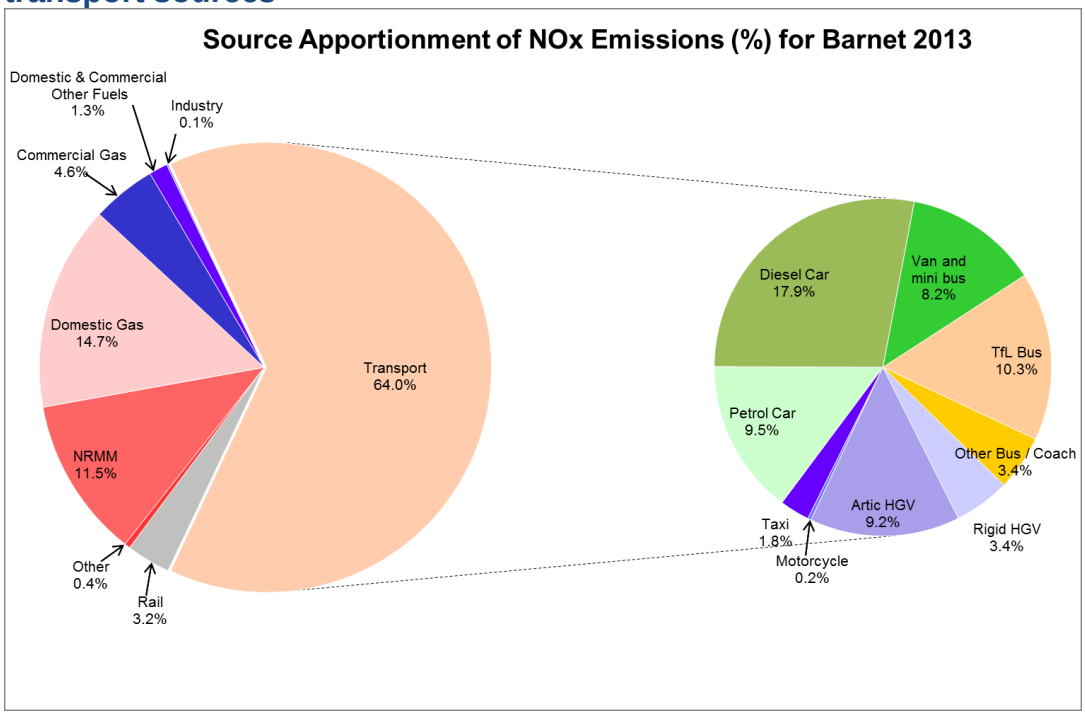
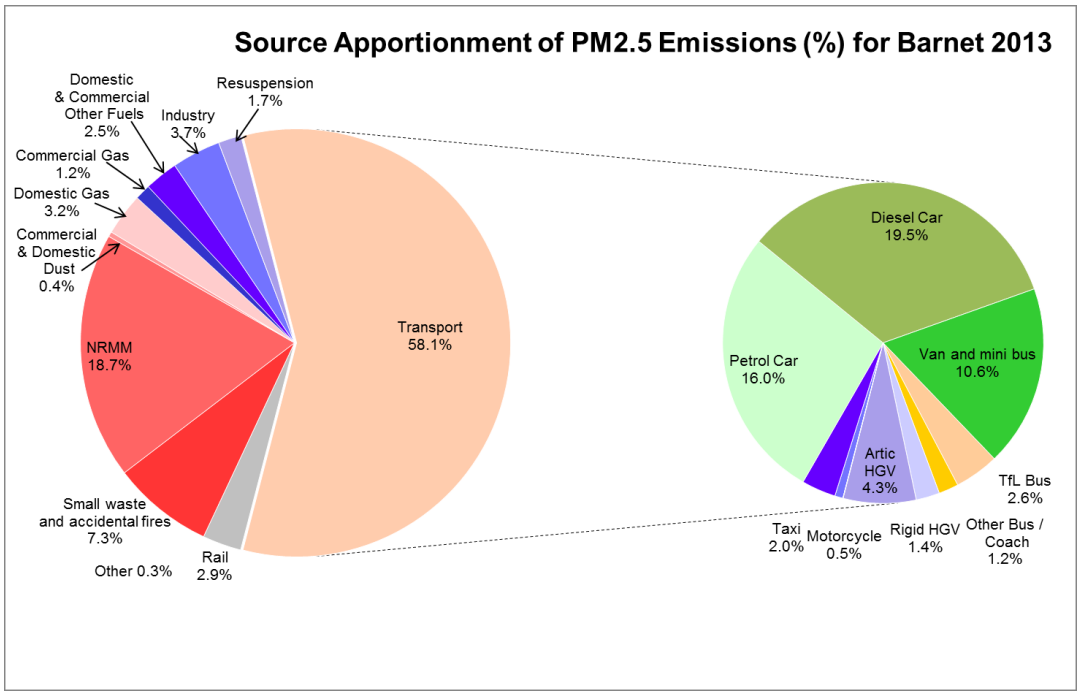


Figure 13 - Proportions of PM2.5 attributable to different transport and non-transport sources



We have implemented emissions based parking permits in 2015-16 and will constantly review our pricing strategy to reflect national, regional and local policies.

Belts of vegetation along roads can reduce the amount of air pollution that people behind it are exposed to. They consist of hedges between a road and pavement or cycle track. Urban vegetation is the sum of parks and smaller green patches within the city such as green walls made of ivy and green roofing. Vegetation has the ability to clean the air by filtering out pollutants.

The 2013 to 2016 Mayor's Air Quality Fund enabled the planting of 221 nitrogen dioxide reducing trees on the Borough's streets. LIP funding enabled the planting of a 40m long ivy green-screen to remove air pollutants from a school playground adjoining the A41. Greening has a key part to play in removing air pollution and we will continue to apply for funding for similar schemes.

Tree provision also helps to mitigate some of the effects of climate change; reducing temperatures, providing shelter and reducing adverse effects of flooding. Planning requirements for new developments also act to ensure green spaces are not lost but enhanced and the borough's new Tree Strategy includes:

- committing to a program that involves a net gain in trees across the borough
- strengthening the quality of the landscape (through planting avenues, tree groups, park boundaries and woodlands)
- addressing urban warming and reducing pollution (tree planting concentrated in the south of the borough where it is needed most)
- addressing NO2 (tree planting next to major roads)

Sustainable Urban Drainage systems (SUDs) also help reduce and mitigate flooding and it is intended that the feasibility of introducing SUDs through transport schemes will be considered. Supplementary Planning Documents also set out borough-wide requirements and best practice for new development, in particular in the Green Infrastructure SPD and Sustainable Design and Construction SPD which incorporate guidance regarding climate change resilience and adaptation, green transport and access, air quality, noise and sustainable urban drainage.

The borough is actively pursuing provision of Electric Vehicle Charge points in car-parks and also provision on street, especially through provision of lamp column chargers throughout the borough. Identification of potential sites for rapid charging points is also taking place. Piloting and introduction of EV and other low emission vehicles in the borough fleet is also envisaged.

Work is also in progress to identify potential new taxi rank locations and a subsequent phase of work will be to provide Electric Vehicle charging for these.

Borough Objectives

The main borough objective that addresses this outcome is:

E. To improve air quality in Barnet and protect residents and visitors, especially children from exposure to pollution;

- facilitate Air quality audits on remaining schools in areas of poor air quality and facilitate implementation of identified measures from audits
- Medium term – work with adjacent boroughs to press for and develop proposals for a sub-regional extension and tightening of the ULEZ.
- deliver open access Electric Vehicle Charge points within Barnet including provision of lamp column chargers
- work with town teams and other community groups to facilitate car-free days and events
- Regularly review parking charges and standards related to electric vehicles to promote use
- Increase greening and tree planting

This is also supported by:

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

Outcome 5: The public transport network will meet the needs of a growing London

Challenges and opportunities

Although TfL has the primary responsibility for the delivery of this outcome there are nevertheless significant major improvements being delivered or supported by the borough that will provide for existing and future transport needs.

The Brent Cross Cricklewood development includes delivery of a new Brent Cross West Thameslink station linking the development to King's Cross St Pancras in under 15 minutes. This has been brought forward in the overall development programme and is now expected to open in 2022, much sooner than previously planned.

The Thameslink station quarter, delivered by Barnet Council in partnership with Network Rail, will introduce a number of major transport infrastructure improvements in Brent Cross Cricklewood. This will unlock a number of far reaching benefits including new transport links to existing local residents, employment opportunities

and growth for the local economy. The new station bridge will be open to pedestrians 24 hours a day linking areas on both sides of the railway.

The council working in conjunction with neighbouring West London boroughs has been engaged in seeking to bring forward the West London Orbital Railway proposals. The reopening of that route for passengers would provide a sustainable means of transport across West London and could potentially reduce demand on the orbital road network such as the A406. The borough is keen to see progress on the planning of this route and an early implementation date.

Extension of Crossrail 2 to New Southgate will also help to address the travel needs of existing and future residents. Decking the A406 in the New Southgate Area would provide scope for further development in that area while contributing to a Healthy Streets environment around the station.

Current work with TfL in conjunction with growth in Colindale has led to funding of extension of the 125 bus route that will help improve the options for orbital transport in Barnet. The borough will continue to press TfL to enhance the bus network in particular to better serve orbital corridors in the borough. Potential routes for improvement include:

- High Barnet to Edgware – either via extension of the 384 bus route as identified in a recent TfL consultation or by other means,
- New Southgate to Mill Hill Broadway. Passengers on the 251 bus route that serves this corridor via the A5109 currently, report issues of insufficient capacity preventing boarding.
- North Finchley to Mill Hill Broadway (as current 221 bus route or otherwise)
- Finchley Central to Golders Green (a radial route but serving to link the two arms of the Northern Line). Already served but passenger demand may support improvements enhancing the link between the two arms of the Northern Line);
- East Finchley to High Barnet (radial corridor), despite significant provision at the north end of the corridor passenger demand would appear to support more. This could also enhance links to Barnet Hospital and Finchley Memorial Hospital.
- A future link from the proposed Crossrail 2 at New Southgate to the West London Orbital railway at Hendon

In the longer term a number of these orbital corridors could form the basis for express bus provision linking radial public transport routes, town centres or other transport hubs, allowing residents to travel to a local hub to access an express service to another hub with other options for the onward journey.

In conjunction with these improvements, or otherwise, the borough is also seeking improvement to serve hospitals, notably Finchley Memorial Hospital and Barnet Hospital and existing and future leisure hubs at Copthall, Barnet and West Hendon.

Barnet has a large number of town centres many of which are served by public transport hubs. There are also stations in residential areas that are not part of a town centres.

Delivery of improvements to several of these areas is expected to take place through town centre strategies and frameworks and through regeneration and development plans. More information about these are included on page 39.

These improvements are expected to deliver improved conditions for pedestrians, cyclists and users of public transport accessing the transport hubs.

The following stations and Transport Hubs are within areas significantly affected by regeneration or other developments plans.

Hendon (Thameslink)
Colindale (LU Northern Line)
Mill Hill East (LU Northern Line)
Brent Cross (LU Northern Line)

Major proposals in town centres and around the related transport hubs will increasingly be directed by and measured against Healthy Streets Indicators. It is envisaged that other centres and transport hubs will be assessed against these to determine a priority for more local improvements.

Table 6 - Barnet Town Centres (* as classified in draft London Plan) and transport hubs

Town Centre	**Town Centre type***	**Town Centre Strategy** (planning or other)	**Station/transport hub in or close to edge of town centre**	**Station/transport hub at a distance from town centre**
Edgware[1,2]	Major	Town Centre Framework	Edgware LU and Bus Station	
Brent Street	District			
Chipping Barnet[1]	District	Town Centre Strategy (plus The Spires	High Barnet LU	

		Planning Framework)		
Church End, Finchley[1]	District	Town Centre Strategy (Local Plan & (Entrepreneurial Barnet)	Finchley Central LU	
East Finchley	District		East Finchley LU	
Golders Green[1]	District		Golders Green LU and Bus Station	
Hendon Central	District		Hendon Central LU	
Mill Hill	District		Mill Hill Broadway Station (Thameslink)	
New Barnet	District	Town Centre Framework	New Barnet Station (Great Northern)	
North Finchley[1]	District		Bus Station	Woodside Park LU
Temple Fortune	District			
Whetstone	District		Totteridge and Whetstone LU	
Colindale/The Hyde[3]	District		Colindale LU	Hendon (Thameslink)
Cricklewood[1,4]	District		Cricklewood (Thameslink)	
Burnt Oak[1,5]	D3istrict	Town Centre Strategy (Entrepreneurial Barnet)	Burnt Oak LU	

Brent Cross	Potential future Metro-politan		[future] Brent Cross West (Thameslink) Brent Cross LU Bus station	
				West Finchley LU
				Mill Hill East LU
				New Southgate (Great Northern)
				Oakleigh Park (Great Northern)

[1] Barnet Main Town Centre
[2] shared with Harrow
[3] shared with Brent
[4] shared with Brent & Camden
[5] shared with Brent and Harrow

Identification of coach facilities to identify and deliver replacement facilities for Victoria Coach Station through the provision of one or more hubs is identified in the Mayors Transport Strategy proposals. Currently Golders Green serves as a significant coach stop and interchange with the Northern Line. Additional coaches at Golders Green cannot be accommodated, but there could be scope for alternative arrangements in conjunction with the development of Brent Cross South to ease pressures there, although it is unlikely to serve as a replacement for Victoria.

Borough Objectives

The main objectives addressing this outcome are:

B. To apply Healthy Streets principles, to deliver a range of improvements

- in Colindale and Brent Cross to deliver new liveable neighbourhoods with walking cycling and public transport at their core.
- in Town Centres including town centre Transport Hubs, and in development areas in line with Town Centre Strategies and Development Frameworks,
- in conjunction with proposals for main road corridors and major junctions;

to assess areas around non-town centre transport hubs and stations to identify a priority for other Healthy Streets Improvements.

F1. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough.

- Delivery of Brent Cross West Station
- Support and facilitate the introduction of the West London Orbital Line (Dudding Hill Line) from Brent Cross and Crossrail2 to New Southgate
- Work with TfL to review bus routes to serve new development and less accessible locations and to realise the delivery of orbital express bus provision and demand responsive public transport
- Explore potential for coach facilities in conjunction with Brent Cross West/Brent Cross south

F2. Deliver programmes of Bus Priority improvements, especially focusing on locations that provide benefits for buses serving development areas, orbital movement and higher passenger numbers

- Review parking provision and parking restrictions to reduce delays to buses and other traffic at peak times.
- Consider opportunities to introduce bus lanes operating during peak hours, particularly on wide roads where tidal parking restrictions already operate.
- In conjunction with Healthy Streets improvements on major roads consider re-balancing the provision of road space to provide facilities that better support bus movements.
- Working with TfL identify other minor improvements that will deliver cumulative benefits.
- In conjunction with bus stop accessibility improvements make it easier buses to access and leave the stop so reducing overall delays.

This is supported by other objectives:

A. To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities, so reducing car dependency.

B. To apply Healthy Streets principles, to deliver a range of improvements

Outcome 6: Public transport will be safe, affordable and accessible to all

Challenges and opportunities

Step Free access is proposed at additional Northern Line stations in the borough at Mill Hill East, Burnt Oak and in the major growth areas of Colindale and Brent Cross.

The delivery of Brent Cross West will provide a new National Rail station with step-free access and London Borough of Barnet has undertaken a study and provided information to Network Rail, for application to the DfT regarding proposals for introduction of step-free access at Mill Hill Broadway Station.

91% of bus stops on borough roads in Barnet are now considered to be accessible, together with all stops on the Transport of London Road network. Nevertheless there are still stops that will not permit buses to make use of their ramps, and some where site specific issues effectively prevent access at stops that apparently meet the normal criteria applied.

Provision of accessible stopping points on Hail and Ride routes could be a particular challenge since the conversion to fixed stop operation may not be practical and could reduce access to a bus services for some passengers who can only walk short distances. A hybrid solution whereby some fixed stopping points that permit wheelchair access are provided within a Hail and Ride route may be needed.

An increase in the percentage of accessible bus stops is envisaged, and in the longer term opportunities to secure step free provision at other stations in the borough will be sought through development and other opportunities.

Borough Objectives

The main objective addressing this outcome is:

G. Facilitate the introduction of step-free facilities at stations and accessible bus stops to help make public transport accessible for all passengers, directly or through support of TfL and National Rail proposals and development opportunities.

- Support step-free proposals for Mill Hill East, Burnt Oak, Colindale and Brent Cross northern line stations
- Deliver the new Brent Cross West station with step-free facilities and support Network Rail to deliver step-free facilities for Mill Hill Broadway station

Increase the percentage of accessible bus stops in Barnet from the current 91% to 95% by 2025 and in the longer term to closer to 100%.Other objectives that also deliver against this outcome are:

A. **To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities, so reducing car dependency.**

B. **To apply Healthy Streets principles, to deliver a range of improvements**

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

Challenges and opportunities

Bus transport is the only real option for most orbital public transport journeys in this part of outer London and to many destinations in adjacent counties. Significant resources need to be focused on improving these orbital links in particular, so that they compare favourably with existing radial links. Similarly in order to provide public transport links to major development areas and to a full range of services and facilities a step change in provision is needed in terms of density and frequency in order that most journeys can be completed without a car and without a very significant time penalty.

One element in facilitating this delivery is to provide bus priority and congestion reduction improvements on existing routes and where new bus services are proposed. As well as the direct benefit of reduced journey times and increased reliability this can also free up resources to permit increased frequency or other provision.

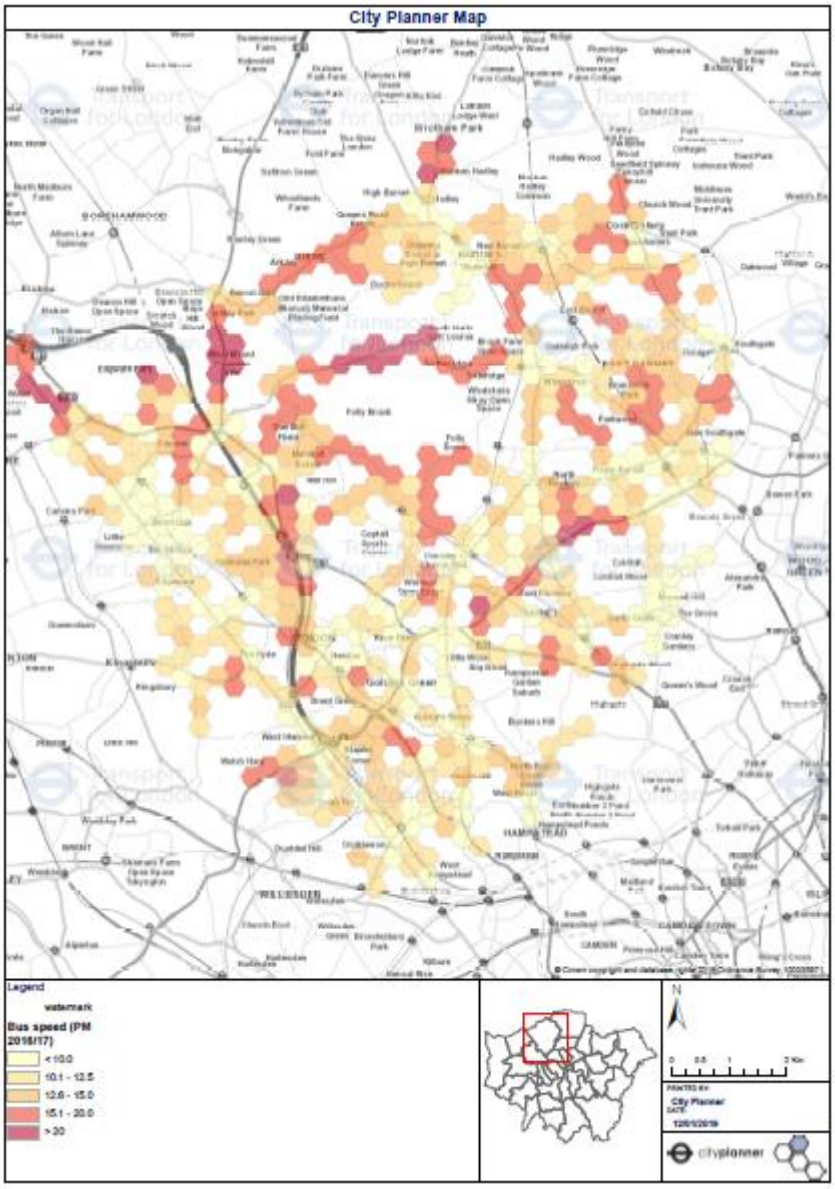
There can be concerns that bus priority improvements might adversely affect other traffic. This might occur if it is assumed that there will be a benefit in prioritising bus movement in all circumstances. However proposals can be developed that weigh up the benefits and dis-benefits to ensure that proposals deliver a net benefit to the travelling public.

In some locations changes to parking provision and parking restrictions may be appropriate to speed up bus and car journeys at peak time. Some wide roads with tidal parking restrictions already provide opportunities to introduce bus lanes operating during peak hours with limited impact on other traffic. Healthy Streets improvements on major roads provide opportunities to re-balance the provision of

road space to provide facilities that better support bus movements. Minor improvements throughout a route may also have a cumulative effect. Bus stop accessibility improvements, as well as making it easier for passengers to access a bus can also make it easier for the bus to access and leave the stop so reducing overall delays.

Figure *14* provides an overview of the average bus speeds in the afternoon peak period (4pm - 7pm), with the palest colours indicating lowest speeds. Lower speeds generally are evident in the south and west of the borough and through town centres and on main road corridors such as the A5, A1000 and A598.

Figure 14 - Average bus speeds in pm peak



Borough Objectives

The main objective addressing this outcome is:

F1. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough.

- Delivery of Brent Cross West Station

- Support and facilitate the introduction of the West London Orbital Line (Dudding Hill Line) from Brent Cross and Crossrail2 to New Southgate
- Work with TfL to review bus routes to serve new development and less accessible locations and to realise the delivery of orbital express bus provision and demand responsive public transport
- Explore potential for coach facilities in conjunction with Brent Cross West/Brent Cross south.

F2. Deliver programmes of Bus Priority improvements, especially focusing on locations that provide benefits for buses serving development areas, orbital movement and higher passenger numbers

- Review parking provision and parking restrictions to reduce delays to buses and other traffic at peak times.
- Consider opportunities to introduce bus lanes operating during peak hours, particularly on wide roads where tidal parking restrictions already operate.
- In conjunction with Healthy Streets improvements on major roads consider re-balancing the provision of road space to provide facilities that better support bus movements.
- Working with TfL identify other minor improvements that will deliver cumulative benefits;
- In conjunction with bus stop accessibility improvements make it easier buses to access and leave the stop so reducing overall delays.

Other objectives that also deliver against this outcome are:

A. To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities, so reducing car dependency.

B. To apply Healthy Streets principles, to deliver a range of improvements

G. Facilitate the introduction of step-free facilities at stations and accessible bus stops to help make public transport accessible for all passengers, directly or through support of TfL and National Rail proposals and development opportunities.

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

Challenges and opportunities

The borough seeks to secure sustainable transport in relation to all developments and to maximise active travel to new development sites.

The borough's developing Local Plan and Regeneration Strategy are both strongly focusing on delivery of the Healthy Streets agenda within the borough's town centres and main road corridors as a means for securing increased housing delivery alongside strengthening of the local economy and employment opportunities, and supporting a wider cultural offer.

There is a growing emphasis away from car parking provision towards a greater degree of walking, cycling and public transport in developments and the boroughs car parking standards are currently expected to be reviewed as part of the local plan review and partly in response to the Draft London Plan. Especially in new developments car clubs can permit lower levels of private car parking provision, and the emerging Local Plan identifies this. The current and emerging Local Plan also seeks cycle parking and storage in line with London Plan standards.

There must however be a realisation that for Outer London areas, many of which are dependent on high degrees of radial transport towards and from Central London, there can be a greater difficulty achieving east/west orbital travel across and between locations other than by the car and that therefore a relatively high degree of car based travel will still occur.

One such challenge then will be securing greater orbital transport connections across the borough which can provide a meaningful and convenient alternative to the car.

One such opportunity is the potential development of the West London Orbital Railway (Dudding Hill Line) which would provide greatly enhanced orbital rail connections across West London, opening up sites for regeneration and development and allowing convenient and rapid movement between key residential and opportunity areas potentially reducing reliance on the car and potentially reducing traffic demand in the vicinity of the North Circular - A406

Where public transport provision is good the resulting reduced levels of car dependency mean that opportunities for car-free and car-lite development may exist. In other areas, as public transport (and especially orbital public transport) improves the opportunities for car-free and car-lite development are expected to increase.

The Council supports measures to efficiently and effectively manage freight activity arising from new development and existing buildings. Local Plan policies include ensuring major planning proposals incorporate Delivery & Servicing Plans intended to improve the safety and reliability of deliveries, help reduce congestion and minimise costs and impact. Freight Quality Partnerships, Construction Logistics Plans and Consolidation Centres are also encouraged to effectively manage all types of construction freight vehicle movement.

Borough Objectives

The main objectives addressing this outcome are:

D. To promote, enable and support more sustainable travel to school, workplaces and other destinations, increasing transport choice and reducing dependency on car use and ownership

- Increase the proportion of schools developing travel plans and achieving STARS accreditation, especially the proportions achieving higher levels of accreditation;
- continue to deliver educational initiatives and engineering schemes to support school travel plans including, piloting school street proposals;
- support car-free and car-lite development in areas of existing good public transport provision and also over time in locations that become good for public transport
- requiring travel plans and delivery and servicing plans for new developments and work with other organisations to ensure these are robust
- in conjunction with the borough's relocation to new offices in Colindale to reduce car based travel and pilot new approaches
- continually reviewing parking provision on-street and in borough controlled car parks including introduction, extension and review of CPZs, reviews of town centre demand and parking provision, application of emissions based permits, making provision for car clubs and electric vehicle charging and applying controls around car-free and car-lite development
  to facilitate a mixed economy of car club provision within the borough, providing an alternative to car ownership for occasional trips.

F1. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough.

- Delivery of Brent Cross West Station

- Support and facilitate the introduction of the West London Orbital Line (Dudding Hill Line) from Brent Cross and Crossrail2 to New Southgate
- Work with TfL to review bus routes to serve new development and less accessible locations and to realise the delivery of orbital express bus provision and demand responsive public transport
- Explore potential for coach facilities in conjunction with Brent Cross West/Brent Cross south.

F2. Deliver programmes of Bus Priority improvements, especially focusing on locations that provide benefits for buses serving development areas, orbital movement and higher passenger numbers

- Review parking provision and parking restrictions to reduce delays to buses and other traffic at peak times.
- Consider opportunities to introduce bus lanes operating during peak hours, particularly on wide roads where tidal parking restrictions already operate.
- In conjunction with Healthy Streets improvements on major roads consider re-balancing the provision of road space to provide facilities that better support bus movements.
- Working with TfL identify other minor improvements that will deliver cumulative benefits.
- In conjunction with bus stop accessibility improvements make it easier buses to access and leave the stop so reducing overall delays.

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

- delivery of Brent Cross Rail Freight Facility and delivery of a construction consolidation centre for the Brent Cross development;
- setting out borough-wide requirements and best practice for new development, in particular in the Green Infrastructure SPD and Sustainable Design and Construction SPD which incorporate guidance regarding climate change resilience and adaptation, green transport and access, air quality, noise and sustainable urban drainage

This is also supported by:

B. To apply Healthy Streets principles, to deliver a range of improvements

G. Facilitate the introduction of step-free facilities at stations and accessible bus stops to help make public transport accessible for all

passengers, directly or through support of TfL and National Rail proposals and development opportunities.

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

Challenges and opportunities

Barnet has a significant regeneration programme mainly in the west of the borough likely to deliver in excess of 20,000 residential units in the next few years. Much of this development located at Brent Cross and Colindale and is contingent upon new and improved public transport infrastructure. At Brent Cross the regeneration proposals are centred around the construction of the New Brent Cross South Thameslink station which will help to unlock a doubling in size of the Brent Cross Shopping Centre, 7500 additional homes within the regeneration area and associated development.

At Colindale the aim is to support the sustainable development of over 10,000 homes in a series of developments in addition to the proposed relocation of the council offices. Colindale station is the subject of redevelopment proposals to enlarge the station concourse and provide a new station square and proposals are being developed to ensure that the new development is supported by a network of walking and cycling routes to reduce reliance on the car and provide for active travel.

The council working in conjunction with neighbouring West London boroughs has been engaged in seeking to bring forward the West London Orbital Railway proposals. The reopening of that route for passengers would provide a sustainable means of transport across West London and could potentially reduce demand on the orbital road network such as the A406. The borough is keen to see progress on the planning of this route and an early implementation date. Some significant regeneration possibilities are potentially tied to the delivery of the West London Orbital with Barnet and its neighbouring borough Brent making initial plans for the delivery of thousands of housing units and associated environmental and public realm improvements in the A5 corridor area informally referred to as Brent Cross West.

Extension of Crossrail 2 to New Southgate will also help to address the travel needs of existing and future residents. Decking the A406 in the New Southgate Area would provide scope for further development in that area while contributing to a Healthy Streets environment around the station.

Borough Objectives

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

- delivery of Brent Cross Rail Freight Facility and delivery of a construction consolidation centre for the Brent Cross development;
- setting out borough-wide requirements and best practice for new development, in particular in the Green Infrastructure SPD and Sustainable Design and Construction SPD which incorporate guidance regarding climate change resilience and adaptation, green transport and access, air quality, noise and sustainable urban drainage

F1. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough.

- Delivery of Brent Cross West Station
- Support and facilitate the introduction of the West London Orbital Line (Dudding Hill Line) from Brent Cross and Crossrail2 to New Southgate
- Work with TfL to review bus routes to serve new development and less accessible locations and to realise the delivery of orbital express bus provision and demand responsive public transport
- Explore potential for coach facilities in conjunction with Brent Cross West/Brent Cross south.

This is also supported by:

F2. Deliver programmes of Bus Priority improvements, especially focusing on locations that provide benefits for buses serving development areas, orbital movement and higher passenger numbers

Other Mayoral Strategies

The LIP takes account of the draft London Plan, and the borough's response to this. The Mayor's Environment Strategy is supported in particular through actions addressing air quality, greening, access to green space and climate change mitigation and the Health Inequalities Strategy in particular through the actions encouraging greater activity and active travel.

The LIP supports the Mayor's Housing strategy through supporting the provision of new homes and making good places to live; providing transport at the same time as building new homes.

Increased accessibility of the transport system also supports the Mayor's economic development strategy and the Mayors cultural strategy.

The borough's forthcoming Local Plan and Regeneration Strategy are both strongly focusing on delivery of the Healthy Streets agenda within the borough's town centres and main road corridors as a means for securing increased housing delivery alongside strengthening of the local economy and employment opportunities, and supporting a wider cultural offer.

3. The Delivery Plan

Introduction

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

- Linkages to Mayor's Transport Strategy priorities
- A list of potential funding sources for the period 2019/20 to 2021/22;
- Long-term interventions
- Three year indicative Programme of Investment for period 2019/20 to 2021/22
- A detailed annual programme for 2019/20

Linkages to the Mayor's Transport Strategy priorities

The Delivery Plan was developed to align the borough's projects and programmes with the policy framework of the Mayor's Transport Strategy, the overarching mode share aim, each of the nine outcomes, and the relevant policies and proposals.

Table 7 identifies these linkages for the proposals anticipated in the first three years of the delivery plan and at an indicative level for longer term generic programmes of work.

Table 7 - Linkages between LIP projects and programmes and the Mayor's Transport Strategy outcomes

	Project / Programme	MTS mode share	MTS outcomes							
		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
	Healthier Lifestyles	✓	✓	✓	✓	✓		✓		
1	Define borough-wide strategic walking & cycling network and improvements needed, including aspirations for networks serving Copthall, West Hendon and Dollis xxx Leisure frameworks	✓	✓	✓	✓	✓		✓		✓
2	Dollis Valley cycle route bridge widening (x2)	✓	✓	✓	✓	✓		✓		
3	Colindale Parks cycle routes inc Montrose Avenue crossing	✓	✓	✓	✓	✓		✓		✓

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
4	Cycle/pedestrian route lighting improvements (Pursley Road-Copthall)	✓	✓	✓	✓	✓		✓		
5	Cycle/pedestrian route lighting improvements (Sunny Hill Park)	✓	✓	✓	✓	✓		✓		
6	North Finchley to Hornsey Quietway	✓	✓	✓	✓	✓		✓		
7	A1000 East Finchley to North Finchley (or parallel provision)	✓	✓	✓	✓	✓				✓
8	A5 Cricklewood to Edgware (or parallel provision)	✓	✓	✓	✓	✓				✓
9	Bus service enhancements to improve access to leisure facilities, especially the developing sports hubs at Copthall, West Hendon, Barnet Playing Fields [including links to regeneration and development at Colindale, West Hendon and Dollis Valley]	✓	✓		✓		✓	✓		✓
10	Bus service enhancements to improve access to Health Services especially Finchley Memorial Hospital	✓			✓		✓	✓		✓

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
11	Develop Walkable Neighbourhoods plans for areas of the borough exploring links between home with work, schools, transport nodes, leisure activities and identifying small practical interventions that will make walking a more attractive option in future.	✓	✓	✓	✓	✓	✓	✓		✓
12	Targeted improvements to public footpaths and strategic walks (London Loop, Capital Ring, Dollis Valley Walk, Pymmes Trail etc)	✓	✓		✓	✓		✓		
14	Develop / refresh walking publications and make available via an app, electronically and in paper format: • Historic walking guide • Circular walks and linking routes from stations to London Loop, Capital Ring, Dollis Valley Walk, Pymmes Trail etc • Prepare and publish footpath guides based on 20-minute walk times from each of the Boroughs Rail and underground stations.	✓	✓		✓	✓				
15	Dockless bike hire	✓	✓		✓	✓				

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
16	Digital Behaviour Change Intervention: Supporting and extending a project being delivered by Barnet's Leisure provider and Middlesex University to develop a digital solution to help increase physical activity, ensuring Active Travel forms a key component of this and including part funding of a post to roll out the digital solution(s).	✓	✓		✓	✓				
	Town Centre and other Healthy Streets proposals	✓	✓	✓	✓	✓		✓		✓
17	Completion of Chipping Barnet High Street pavement widening scheme	✓	✓	✓	✓			✓		✓
18	A5 Burnt Oak Broadway j/w Watling Avenue – road safety and healthy streets improvements	✓	✓	✓	✓	✓		✓		✓
19	Liveable Neighbourhoods proposal for North Finchley	✓	✓	✓	✓	✓	✓	✓		✓
20	Finchley Central – "quick win" public realm and healthy streets improvements developed from the Town Centre Strategy and complementing the Station development	✓	✓		✓	✓	✓	✓		✓

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
21	Cricklewood –complementing Good Growth Fund bid to deliver public realm/healthy streets/business improvements	✓	✓		✓	✓		✓		✓
22	West Hendon public realm works in advance of and complementing major development changes	✓	✓		✓			✓		✓
23	Golders Green Healthy Streets improvements (based on emerging town centre strategy)	✓	✓		✓	✓		✓		✓
24	Edgware Healthy Streets improvements (based on SPD)	✓	✓		✓	✓		✓		✓
25	Healthy Streets improvements on routes to High Barnet Station	✓	✓		✓	✓	✓	✓		✓
26	Colindale Liveable Neighbourhood	✓	✓		✓	✓	✓	✓	✓	✓
27	Brent Cross Liveable Neighbourhood	✓	✓		✓	✓	✓	✓	✓	✓
28	Minor traffic management schemes prioritised using healthy streets indicators			✓		✓		✓		

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
29	Colney Hatch Lane pedestrian crossing facility/traffic calming	✓		✓	✓			✓		
30	Oakleigh Road South pedestrian crossing facility/improvements	✓		✓	✓			✓		
31	Church Hill Road/Cedar Avenue pedestrian crossing facility/improvements	✓		✓	✓			✓		
32	Alexandra Grove pedestrian crossing facility/improvement	✓		✓	✓			✓		
	Towards Vision Zero	✓		✓	✓			✓		✓
33	Road Safety Education, Training and Publicity	✓		✓						✓
34	Cycle Training – deliver cycle training to approx. 5000 people (children & adults) per year	✓	✓	✓	✓	✓				
35	Pedestrian facilities at traffic signals: A5 j/w Station Road, Edgware	✓		✓	✓			✓		✓

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
36	Pedestrian facilities at traffic signals: Brent Street / Church Road / Parson Street	✓		✓	✓			✓		✓
37	Pedestrian facilities at traffic signals: Finchley Road / Hoop Lane junction	✓		✓	✓			✓		
38	Pedestrian facilities at traffic signals: A1000 / Summers Lane	✓		✓	✓			✓		
39	Pedestrian facilities at traffic signals: A5 j/w Kingsbury Road	✓		✓	✓			✓		✓
40	Pedestrian facilities at traffic signals: A5 j/w Deansbrook Road	✓		✓	✓			✓		✓
41	Great North Road/The Bishops Avenue Accident Reduction scheme (implementation)			✓						
42	Chesterfield Road traffic calming scheme	✓		✓	✓					

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
43	High Road j/w Totteridge Lane (minor changes)			✓		✓				
44	Junction Improvement scheme A5 junction with Spur Road			✓		✓			✓	✓
45	Future targeted accident reduction engineering schemes (focusing particularly on locations with vulnerable road user casualties)			✓						
	Support Sustainable Transport Choice	✓	✓	✓	✓	✓		✓	✓	✓
46	School Travel Plan support (staff and resources to support schools developing School Travel Plans and obtaining STARS accreditation)	✓	✓		✓					
47	Danegrove Primary School – STP engineering scheme	✓		✓	✓	✓				
48	Grasvenor Avenue Infants School – STP engineering scheme	✓		✓	✓	✓				
49	St Theresa's Catholic School – STP engineering scheme	✓		✓	✓	✓				

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
50	Wessex Gardens Primary School – STP engineering scheme	✓		✓	✓	✓				
50a	Frith Manor Primary School – STP engineering scheme	✓		✓	✓	✓				
50b	Future STP schemes	✓		✓	✓	✓				
51	Bike It officer	✓	✓		✓	✓				
52	Cycle Officer	✓	✓	✓	✓	✓				
53	Support for cycling – resources to promote cycling	✓	✓		✓	✓				
54	Introduction of / review of CPZs				✓				✓	
54a	Reviewing on and off-street parking management options including CPZ's, permits and charges and how these will support and deliver changes to mode choice, health and air quality	✓			✓	✓			✓	

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
55	Car club provision				✓					✓
	Air quality	✓			✓	✓		✓		
56	Air quality audits on remaining schools in high pollution areas					✓		✓		
57	Delivery of Air Quality audit improvements	✓			✓	✓				
58	Deliver EVCPs					✓				✓
59	Support for car-free days & events	✓	✓		✓	✓				
60	Tree planting to address air quality and urban heat islands		✓			✓				
61	Sustainable business grants programme which would include an engagement officer to liaise with and approach businesses along the A1000 corridor and give their business an energy and sustainability appraisal – this would be backed up by	✓			✓	✓				

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
	small grants /discounts potentially be backed by EU funds which would count as match . MAQF/LIP									
	Public Transport Improvements	✓			✓	✓	✓	✓	✓	✓
62	Delivery of Brent Cross West Station	✓			✓		✓	✓	✓	✓
63	Feasibility study regarding introduction of a National Rail station at Colindale on local line in conjunction with introduction of the West London Orbital Line	✓			✓		✓	✓	✓	✓
64	Feasibility study regarding introduction of a national rail station at NLBP site in conjunction with development/Crossrail 2	✓			✓		✓	✓	✓	✓
65	Bus Priority improvements	✓			✓	✓	✓		✓	
65a	Healthy Streets Improvements around transport hubs	✓			✓	✓	✓	✓	✓	
	Accessible transport	✓	✓		✓	✓		✓	✓	

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
66	A programme of improvements to facilitate travel by persons with a disability including delivery of any further bus stop accessibility improvements, local accessibility improvements (eg dropped kerbs, tactile paving, removal of steps, provision of handrail etc) and disabled parking bays.	✓	✓		✓			✓	✓	
	Sustainable Development	✓				✓		✓	✓	✓
67	Delivery of Brent Cross Rail Freight Facility and delivery of a construction consolidation centre for the Brent Cross development					✓	✓		✓	✓
	Maintenance of assets	✓	✓	✓	✓	✓		✓	✓	
	Carriageways, Footways, Bridges and other assets	✓	✓	✓	✓	✓		✓	✓	
	Future projects and programmes developed from Long Term Transport Strategy	✓			✓	✓	✓	✓	✓	✓
	Further demand management options, permitting and emissions, workplace parking levy, car clubs, electric vehicles	✓			✓	✓	✓	✓	✓	✓

		Improving active, efficient and sustainable mode share	No !:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable Growth/Unlocking
	and charging point infrastructure, car free and permit free developments, approach to development control and planning conditions, “future proofed” transport infrastructure and transport innovation									

TfL Business Plan

In developing and preparing the borough's programme of works (as outlined in the Delivery Plan), the borough has considered the Mayor's aspiration to deliver the major projects in TfL's Business Plan and the milestones associated with these projects – including major infrastructure associated with Growth Areas and Opportunity Areas.

The following TfL projects have implications for the borough.

Project

Brent Cross London

TfL are working with the London Borough of Barnet and Highways England to support the regeneration of the Brent Cross area.

Funded by the developer, improvements in the first phase include two new bridges to provide better connectivity over the A406 for pedestrians, cyclists and public transport users, a new world-class bus station, and significant junction improvements at the M1, A41 and Staples Corner, delivering bus priority and greater capacity for road users. Construction will start in 2018 and finish by the end of 2022.

Implications for borough

The regeneration as a whole is a major project for the Borough and TfL have an important role to play in helping deliver that.

Complementary works to be carried out by the borough

Significant work to provide a new town centre and station is being undertaken by the borough and other delivery partners

Project

ULEZ / Air Quality

Implications for borough

The southern part of the borough is within the North Circular Road so expected to be within the ULEZ when it is extended. Demand for low emission vehicles in this part of the borough in particular is expected to increase. Limited off-street parking is a

feature of many roads in this area, and there is limited public car-park provision, so on-street charging infrastructure is likely to be particularly in demand.

Complementary works to be carried out by the borough

The boroughs roll out of electric vehicle charge points, including lamp column chargers and low emission car-club vehicles will complement this measure.

The ULEZ will have an impact on the borough's own fleet and work is in progress to identify how this will be addressed through the schedule of vehicle replacements and additional measures. ***Table 10*** (page 93) identifies as a long term intervention piloting and introduction of EV and other low emission vehicles in the borough fleet.

Project

Commercial Development

Implications for borough

A number of proposed TfL development opportunities in the borough provide opportunities and synergies with town centre strategies and plans.

Complementary works to be carried out by the borough

The borough's town centre strategies and plans aim to reflect the development opportunities.

Sources of funding

Table *9* (page 91) identifies potential funding sources for implementation of our LIP, including LIP funding allocation from TfL, contributions from the borough's own funds, and funding from other sources.

The key source of funding is the borough's LIP allocation. Figures provide by TfL indicate that the borough will receive nearly £3M per year from the formula allocated Corridors, Neighbourhoods and Supporting Measures Programme plus a £100k per year Local Transport Fund allocation.

Funding from TfL for maintenance of Principal Roads and Bridges is largely suspended for 2019/20, but provision is made in the TfL business plan for future years.

In addition to the above, the borough anticipates funding from TfL of about £5.5M between 2019/20 and 2022/23 (£3.5M by 2021/22) in relation to Liveable

Neighbourhood bids to TfL related to a Liveable Neighbourhood in the Colindale Area, integrating walking, cycling and the transport network.

The borough also uses its own resources and resources from developers to pursue local objectives and ensure that the road network remains in a safe and serviceable condition. This includes in particular maintenance of most borough roads and, in relation to the objectives set out in this document also parking management, cleaning and maintaining town centres and other streets, maintaining highway trees and planting and delivering environmental health and community safety interventions.

Table 8 identifies sums currently available from developers via section 106 agreements that help address the borough's transport objectives. Other contributions (such as contributions for open spaces, trees and health) may also play a part in addressing transport objectives. Contributions may be allocated to specific projects related to the relevant development, including major projects in the Colindale Area Action Plan area, and are not necessarily available for LIP funded projects.

Table 8 - s106 contributions

Type of contribution	**Total value £k**
Bus improvements / Bus stops / Public Transport	1540
Car Club	41
Car Parking / Controlled Parking Zone / Car free (inc reviews, traffic order changes etc)	797
CCTV	53
Colindale Station	4910
Highway contributions (general) inc junction improvements, pedestrian crossings etc	2605
Public Realm	1925
Town Centre Improvements	184
Travel Plans/Travel Plan monitoring	703
Total	**12758**

Table 9 - Potential funding for LIP delivery				
Funding source	2019/20	2020/21	2021/22	Total
	£k	£k	£k	£k
TfL/GLA funding				
LIP Formula funding –Corridors & Supporting Measures	2,967	2,967	2,967	8,901
LIP Local Transport Fund	100	100	100	300
Discretionary funding (See 3 Year Programme)	0	2975	8500	11,475
Strategic funding	900	1200	1200	3,300
GLA funding	TBC	TBC	TBC	TBC
Sub-total	**3,967**	**7,242**	**12,767**	**23,976**
Borough funding				
Capital funding / CIL	14,500	5,000	5,000	24,500
Revenue funding	TBC	TBC	TBC	TBC
Parking revenue	900	900	200	2,000

Workplace parking levy	0	0	TBC	TBC
Sub-total	**15,400**	**5,900**	**5,200**	**26,500**
Other sources of funding				
S106	2,750	4,150	1,150	8,050
European funding	TBC	TBC	TBC	TBC
Sub-total	**2,750**	**4,150**	**1,150**	**8,050**
Total	**22,117**	**17,292**	**19,117**	**58,526**

Long-Term interventions to 2041

In the medium to long-term the borough believes that a number of significant, but currently unfunded, investments will be required to ensure the economic and social vitality of the borough. These are shown in ***Table 10*** below with indicative costs and indicative but uncommitted timescales.

Table 10 - Long-term interventions up to 2041				
Project	**Approx. date**	**Indicative cost**	**Likely funding source**	**Comments**
North Finchley Town Centre remodelling	2022-2026	£30.0M	Developer, TfL, LB Barnet	Based on North Finchley Town Centre Framework Supplementary Planning document that envisages removal of the gyratory road arrangement with closure of part to most vehicles in that area.
Finchley Central	2020-2025	£10.0M	Housing Infrastructure Fund, TfL, LB Barnet, Developer	Major improvements developed from the Town Centre Strategy and including delivery associated with development of TfL assets
Edgware Town Centre	2025-2030	£20.0M	Developer, TfL, LB Barnet	Town Centre Development / Improvements guided by the Supplementary planning document for that town centre
New Southgate liveable neighbourhood	2036-2041	£20.0m	Developer, TfL, LB Barnet	A Liveable Neighbourhood to support and complement the New Southgate Opportunity Area/Crossrail 2

A5 corridor improvements	2025-2035	£5m	TfL, LB Barnet, Developer, Other	Improvements to various parts of the A5, reflecting an anticipated strategic review of the A5 and master-planning for Brent Cross West in conjunction with adjacent boroughs and TfL
Low emission fleet pilots and improvements	2020-2025	TBC	LB Barnet, Air Quality funds, TfL	Piloting and introduction of EV and other low emission vehicles in the borough fleet
West London Orbital (Dudding Hill) Line	2024-2029	£265M	TBC	
Consideration of a sub-regional extension and tightening of the ULEZ	2024-2029	TBC	TBC	
Add urban footpaths to the Definitive Map of public rights of way, and prepare a Rights of Way Improvement Plan	2020-2025	TBC	LB Barnet / other TBC	
Assessing feasibility of introducing SUDs through	2020-2025	TBC	TBC	

transport schemes				
Future projects and programmes developed from Long Term Transport Strategy	2019-2041	TBC	TBC	

Three-year indicative Programme of Investment

The Three Year indicative Programme of Investment has been completed in ***Table 11*** below.

Table 11 - Three-year indicative programme of investment for the period 2019/20 to 2021/22

The table summarises, at a programme level, the borough's proposals for the use of TfL borough funding in the period 2019/20 – 2021/22.

London Borough of Barnet TfL BOROUGH FUNDING 2019/20 TO 2021/22	Programme budget		
	Allocated 2019/20	Indicative 2020/21	Indicative 2021/22
LOCAL TRANSPORT FUND	£k	£k	£k
Local transport initiatives	100	100	100
Sub-total	**100**	**100**	**100**
CORRIDOR, NEIGHBOURHOODS & SUPPORTING MEASURES	£k	£k	£k
Healthier Lifestyles	545	295	185
Town Centre and other Healthy Streets proposals	503	258	459
Towards Vision Zero	1059	1565	1424
Supporting Sustainable Transport Choice	620	620	620
Air quality	170	159	159

London Borough of Barnet TfL BOROUGH FUNDING 2019/20 TO 2021/22	Programme budget		
	Allocated 2019/20	Indicative 2020/21	Indicative 2021/22
Public Transport Improvements	0	0	50
Accessible transport	70	70	70
Sub-total	**2967**	**2967**	**2967**
DISCRETIONARY FUNDING	£k	£k	£k
Liveable Neighbourhoods	0	500	3000
Major Schemes	0	0	0
Principal road renewal	0	1975	5000
Bridge strengthening		500	500
Traffic signal modernisation	TBC	TBC	TBC
Sub-total	**0**	**2975**	**8500**
STRATEGIC FUNDING	£k	£k	£k
Bus Priority	500	500	500
Borough cycling programme	300	600	600
London cycle grid	0	0	0
Crossrail complementary works	0	0	0

London Borough of Barnet TfL BOROUGH FUNDING 2019/20 TO 2021/22	Programme budget		
	Allocated 2019/20	Indicative 2020/21	Indicative 2021/22
Mayor's Air Quality Fund	100	100	100
Low Emission Neighbourhoods	TBC	TBC	TBC
Sub-total	**900**	**1200**	**1200**
All TfL borough funding	**3967**	**7242**	**12767**

Supporting commentary for the three-year programme

A long list of proposals that aim to deliver the borough transport objectives for the three year programme has been identified from officers across the council and partner organisations, essentially as identified in ***Table 7***. These in particular:

- Support major regeneration and town centre projects within the borough;
- Support the borough's aspirations regarding promoting healthy lifestyles and protection from air pollution
- Ensure the resources are in place to maintain road safety education and training and sustainable travel support for schools, other organisations and individuals;
- Deliver proposals to improve road junctions and other locations focussing on locations with limited facilities for pedestrians and/or high numbers of vulnerable road user casualties;
- Develop proposals for new public transport links and cycling and walking networks to serve the borough
- Deliver minor improvements to respond to local concerns about accessibility, safety, and the road environment.

Proposals have been reviewed considering synergies with other major projects, and the programme constraints for these, availability of other funding sources and associated timeframes and considering which proposals are best placed to be delivered in the three year time frame. Individual projects and programmes have then been prioritised and scheduled in line with this to populate ***Table 11***.

The work identified in ***Table 11*** (page 96) includes:

Local Transport Proposals: directed towards minor traffic management schemes prioritised using healthy streets indicators

Corridors Neighbourhoods and Supporting Measures: funding has been identified in ***Table 11*** based on the allocations assigned to projects under the headings in **Table 7** (page 75):

- Healthier Lifestyles
- Town Centre and other Healthy Streets proposals
- Towards Vision Zero
- Supporting Sustainable Transport Choice
- Air quality
- Public Transport Improvements
- Accessible transport
- Sustainable Development

Some areas have particular funding from other TfL programmes or other sources, and as a result need less (or nil funding) from the corridors programme.

Risks to the delivery of the three-year programme

Table 12 shows the principal risks associated with delivery of the LIP together with possible mitigation actions for the three-year programme. The risk register summarises the strategic risks identified that could impact on the three-year programme of schemes/initiatives.

Table 12 - LIP Risk Assessment for three-year programme 2019/20-2021/22					
Risk	**Likelihood**			**Potential mitigation measures**	**Impact if not mitigated**
	H	**M**	**L**		
Financial					
Significant reduction in funding levels available from TfL, the Council's own resources, or from third parties.		M		Identify and pursue alternative funding sources for key proposals Reprioritise and/or extend delivery programme	Unable to deliver programme as expected. Delay to delivery of outcomes
Increases in programme or individual project cost	H			Ensure effective monitoring and control of project costs. Reduce project scope, or extend delivery period if necessary to control costs. Reprioritise or substitute proposals if alternatives can deliver more effectively.	Increased cost and delay. Potential to prevent delivery of other outcomes

Statutory / Legal					
Council is required to “implement” its LIP under s151 of the GLA Act without sufficient external funding support.			L	Accept risk – keep under review	Extreme financial pressure on borough
Third Party					
Major development schemes do not proceed at pace envisaged		M		Reschedule proposals Consider bringing forward other proposals where feasible	Outcomes and objectives delivered later, although the slower pace of development likely to reduce need for some proposals.
Projects delayed by external or other factors		M		Re-programme and/or substitute other proposals addressing similar objectives.	Outcomes and objectives delivered later.
Public / Political					
Individual proposals do not receive sufficient public support / member approval to proceed		M		Redesign to overcome objections. Substitute other proposals addressing similar objectives.	Increased cost and delay. Potential to prevent delivery of outcomes

Programme & Delivery					
Insufficient staff resources to plan and deliver the LIP programme		M		Ensure effective monitoring and control of project costs. Reduce project scope, or extend delivery period if necessary to control costs. Reprioritise or substitute proposals if alternatives can deliver more effectively.	Outcomes and objectives delivered later.
Projects and programmes do not deliver expected outputs and outcomes			L	Ensure effective monitoring and control of project costs. Reduce project scope, or extend delivery period if necessary to control costs. Reprioritise or substitute proposals if alternatives can deliver more effectively.	Outcomes and objectives not delivered

Annual programme of schemes and initiatives

The annual programme of schemes has been completed and is appended as pro-forma A. It will also be submitted to TfL via the Borough Portal. The programme of schemes will be updated annually.

Supporting commentary for the annual programme

As identified in relation to the three year programme individual projects and programmes have been identified from a long-list of projects from officers across the council and partners, which has been scheduled to support other major projects and regeneration proposals and accommodate programme constraints associated with these and availability of other funding sources. Implementation schedules and in some cases scope of work have been adjusted to reflect available budgets and to support those projects best placed to deliver in the year or over the coming three years. A number of 19/20 projects are schemes developed or designed using LIP funding in previous years that are now ready to be progressed further.

The following proposals are expected to be delivered or part delivered during 2019/20.

- Define borough-wide strategic walking & cycling network and improvements needed
- Dollis Valley cycle route bridge widening (x2)
- Colindale Parks cycle routes inc Montrose Avenue crossing
- Cycle/pedestrian route lighting improvements (Pursley Road-Copthall)
- Cycle/pedestrian route lighting improvements (Sunny Hill Park)
- Digital Behaviour Change Intervention
- Completion of Chipping Barnet High Street pavement widening scheme
- A5 j/w Watling Avenue – junction improvement scheme and healthy streets improvements (say 500 overall)
- Finchley Central – “quick win” public realm and healthy streets improvements complementing the Station development and Town Centre Strategy
- West Hendon public realm works in advance of and complementing major development changes
- Minor traffic management schemes prioritised using healthy streets indicators
- Colney Hatch Lane pedestrian crossing facility/traffic calming
- Oakleigh Road South pedestrian crossing facility/improvements
- Church Hill Road/Cedar Avenue pedestrian crossing facility/improvements
- Alexandra Grove pedestrian crossing facility/improvement
- Road Safety Education, Training and Publicity

- Cycle Training – deliver cycle training to approx. 5000 people pa (children & adults)
- Pedestrian facilities at traffic signals: A5 j/w Station Road, Edgware
- Pedestrian facilities at traffic signals: Brent Street / Church Road / Parson Street
- Pedestrian facilities at traffic signals: A5 j/w Kingsbury Road
- Great North Road/The Bishops Avenue Accident Reduction scheme (implementation)
- Chesterfield Road traffic calming scheme
- High Road j/w Totteridge Lane (minor changes)
- Junction Improvement scheme A5 junction with Spur Road
- School Travel Plan support (staff and resources to support schools developing School Travel Plans and obtaining STARS accreditation)
- Danegrove Primary School – STP engineering scheme
- Grasvenor Avenue Infants School – STP engineering scheme
- St Theresa's Catholic School – STP engineering scheme
- Wessex Gardens Primary School – STP engineering scheme
- Frith Manor School – STP engineering scheme
- Bike It officer
- Cycle Officer
- Support for cycling – resources to promote cycling
- Introduction of / review of CPZs
- Car club provision
- Air quality audits on remaining schools in high pollution areas
- Delivery of Air Quality audit improvements
- Deliver EVCPs
- Support for car-free days & events
- Tree planting to address air quality and urban heat islands
- Sustainable business grants programme which would include an engagement officer to liaise with and approach businesses along the A1000 corridor and give their business an energy and sustainability appraisal – this would be backed up by small grants /discounts potentially be backed by EU funds which would count as match. MAQF/LIP
- Delivery of Brent Cross West Station
- Bus Priority improvements
- A programme of improvements to facilitate travel by persons with a disability including delivery of any further bus stop accessibility improvements, local accessibility improvements (eg dropped kerbs, tactile paving, removal of steps, provision of handrail etc) and disabled parking bays

- Delivery of Brent Cross Rail Freight Facility and delivery of a construction consolidation centre for the Brent Cross development

Other work that will address the Mayoral Objectives over the year include the development of the Borough's Long Term Transport Strategy which will address further demand management options, permitting and emissions, workplace parking levy, car clubs, electric vehicles and charging point infrastructure and how this will influence future movement within the Borough, car free and permit free developments, approach to development control and planning conditions, supporting development in the Borough via "future proofed" transport infrastructure on new developments and transport innovation.

Similarly development of the Local Plan will help embed the transport objectives and Mayoral outcomes in the wider planning framework for the borough, and help define how car-free and permit-free developments will be managed. A regeneration strategy will help define the future regeneration and town centre projects to which future LIP funded schemes will contribute.

Income from the Special Parking Account will help to deliver the parking and permitting aspirations of the borough transport strategy, and general revenue funding will continue to support reactive maintenance of streets, clean and maintain town centres, maintain highway trees and planting, deliver environmental health and community safety interventions.

Third Party delivery of infrastructure in regeneration areas, especially in Brent Cross Cricklewood, where major junction improvements, including projects supported by the TfL business plan, are planned together with continued development

Risk assessment for the annual programme

Table 13 shows the principal risks associated with delivery of the LIP together with possible mitigation actions for the annual programme. The risk register summarises the strategic risks identified that could impact on the annual programme of schemes / initiatives.

Table 13 - LIP Risk Assessment for annual programme - 2019/20					
Risk	**Likelihood**			**Potential mitigation measures**	**Impact if not mitigated**
	H	**M**	**L**		
Financial					
Significant reduction in funding available from TfL, the Council's own resources, or from third parties.			L	Identify and pursue alternative funding sources for key proposals Reprioritise and/or extend delivery programme	Unable to deliver programme as expected. Delay to delivery of outcomes
Increases in programme or individual project cost	H			Ensure effective monitoring and control of project costs. Reduce project scope, or extend delivery period if necessary to control costs. Reprioritise or substitute proposals if alternatives can deliver more effectively.	Increased cost and delay. Potential to prevent delivery of other outcomes

Statutory / Legal					
Council is required to “implement” its LIP under s151 of the GLA Act without sufficient external funding support.			L	Accept risk – keep under review	Financial pressure on borough
Third Party					
Major development schemes do not proceed at pace envisaged			L	Reschedule proposals Consider bringing forward other proposals where feasible	Outcomes and objectives delivered later.
Projects delayed by external or other factors		M		Re-programme and/or substitute other proposals addressing similar objectives.	Outcomes and objectives delivered later.
Public / Political					
Individual proposals do not receive sufficient public support / member approval to proceed		M		Redesign to overcome objections. Substitute other proposals addressing similar objectives.	Increased cost and delay. Potential to prevent delivery of outcomes
Programme & Delivery					

Insufficient staff resources to deliver the LIP programme			L	Ensure effective monitoring and control of project costs. Reduce project scope, or extend delivery period if necessary to control costs. Reprioritise or substitute proposals if alternatives can deliver more effectively.	Outcomes and objectives delivered later.
Projects and programmes do not deliver expected outputs and outcomes			L	Ensure effective monitoring and control of project costs. Reduce project scope, or extend delivery period if necessary to control costs. Reprioritise or substitute proposals if alternatives can deliver more effectively.	Outcomes and objectives not delivered

Monitoring the delivery of the outcomes of the Mayor's Transport Strategy

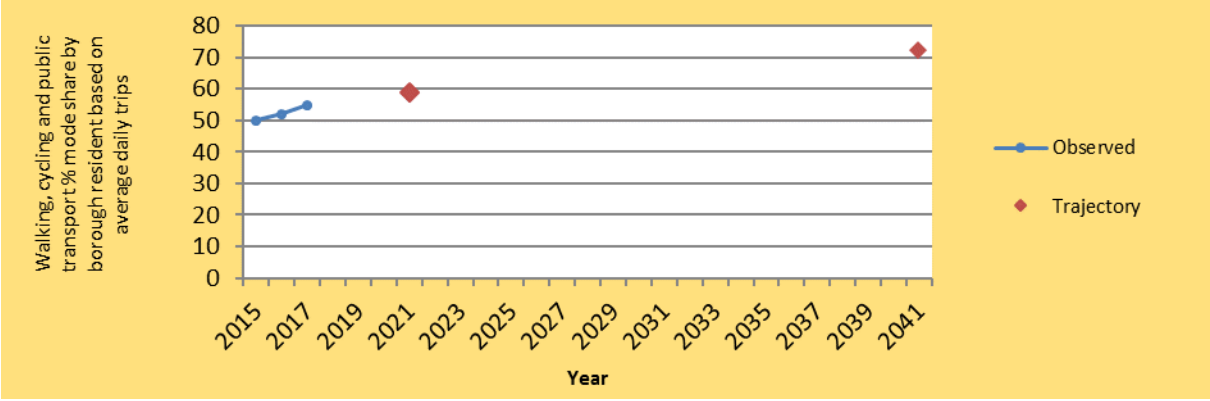
Overarching mode-share aim and outcome Indicators

Borough targets against the defined outcome indicators for the Mayoral mode-share aim and outcome indicators are set out in ***Table 16*** (page 116).

Overarching mode share aim

The **overall mode share aim** for Barnet is that 72% of all trips will be made by walking, cycling or other sustainable modes by 2041. Current trends appear to suggest that this may be achievable although the borough remains concerned that this is a very challenging target that is reliant on delivery of London-wide actions, improved public transport and other changes outside Barnet's control. The impact of, the changing nature of parts of the borough together with a focus on encouraging healthier lifestyles means that the borough has nevertheless chose to adopt challenging targets for this indicator of 59% by 2021 and 72% by 2041 for this.

Figure 15 – Mode share by walking, cycling and public transport



Outcome 1

Indicators related to **Outcome 1: London's streets will be healthy and more Londoners will travel actively** regarding active travel require some clarification. The LTDS survey on which indicator 1a is based is understood to include circular leisure trips (walking, running or cycling) within the total, and the target is set on the basis that this is the case.

With regard to indicator 1b the exact definition of strategic cycle routes will affect this indicator. Consequently a target for 2021 which is based on the presumption that 4%

of residents within 400m of a strategic route is equivalent to those who would be within reach of a Quietway route currently in development.

Outcome 2

The indicator for **Outcome 2 is Vision Zero - Deaths and serious injuries from all road collisions to be eliminated from our streets**

Barnet shares the ambition that there should be no deaths or serious injuries on the borough's roads by 2041 and has set this as a target.

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

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

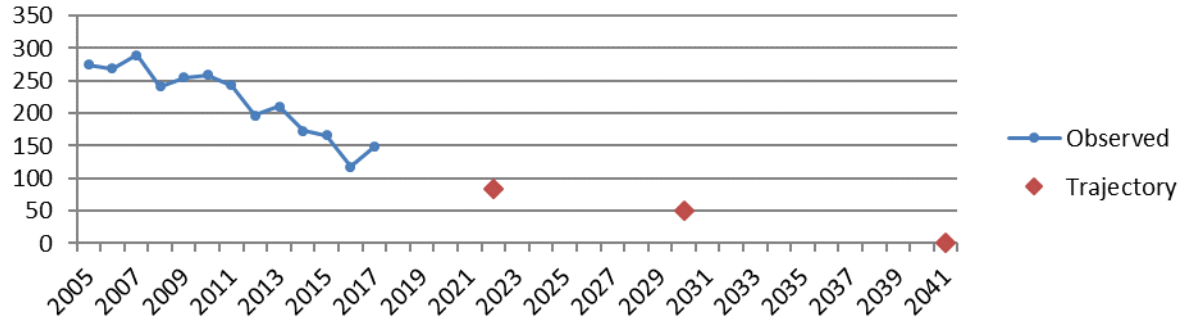
TfL commissioned the Transport Research Laboratory (TRL) to undertake a back-casting exercise to enable pre November 2016 data to be compared with post November 2016 data. These initial back cast estimates include the number of people killed or seriously injured (KSI) for each borough between 2005 and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

Table *14* and **Figure *16*** show the back-cast estimates and borough trajectory as identified by TfL, which are included as targets in ***Table 16***

Table 14 - Killed and Seriously injured casualty figures – back-casting applied

Killed and seriously injured casualties							
Observed with back casting applied				Observed	Trajectory		
2005-09 baseline	2010-14 baseline	2015	2016	2017	2022	2030	2041
266	217	167	117	148	84	50	0

Figure 16 - Killed and Seriously Injured Casualties – back-casting applied



Outcome 3

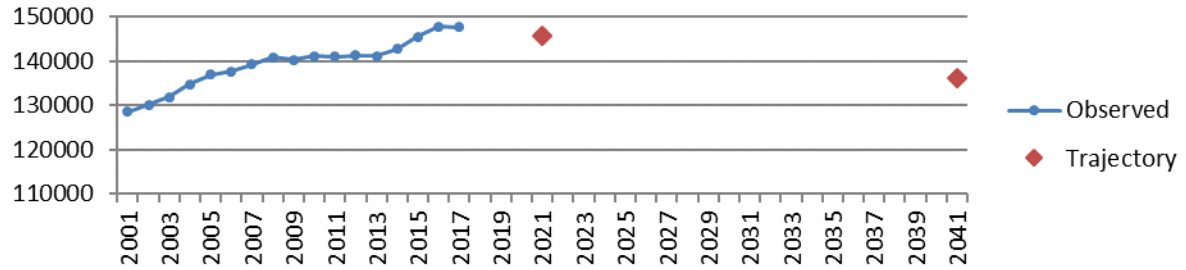
Targets for this outcome include both a target in relation traffic volumes on roads and one in relation to car ownership. While car ownership clearly has a part to play in traffic levels, ownership of a car does not necessarily correspond to increased traffic (despite a 15% increase in ownership over the period 2001 to 2016 traffic levels in Barnet are recorded as static. See ***Figure 17*** & ***Figure 18***).

Figure 17 shows the historic trend in traffic on roads in Barnet together with the range of future values that the trajectories suggested by TfL and the Mayor (for a 5%-10% reduction in traffic in Outer London by 2041) would suggest.

Figure 18 shows car ownership in the borough over an equivalent period. Growth in car-ownership was static between 2008 and 2013, presumably reflecting adverse economic conditions, but increased since 2013, plateauing again from 2016 to 2017.

Figure 17 - Annual traffic volumes (million vehicle kilometres)

Figure 18 - Car ownership (number of cars owned)



While the borough is keen to encourage residents to make less use of the car and use other forms of transport, measures to restrict ownership of a car are not generally envisaged. Lower levels of car ownership per household are expected over time, especially in parts of the borough where growth is occurring, but also in other areas as improved public transport and alternatives, such as demand responsive transport and car clubs, become more viable, however a reduction in ownership overall is not anticipated. Consequently a reduction to the 2041 trajectory level suggested by TfL is considered challenging given the increased population that is expected, but is identified as a target for 2041. However the target for 2021 (145800) shown in ***Figure 18*** is based on a straight line to the 2041 target rather than a figure in line with the trajectory suggested by TfL (139000)**.**

Targets of no increase in traffic by 2021 and at least 5% reduction in traffic by 2041, in line with the expected range for Outer London, are set in relation to the indicator related to Annual Traffic Volumes.

Outcome 4

A reduction in CO2 emissions can be expected from the projected reduction in road traffic, from a switch to cleaner vehicles and reductions in the emissions intensity of the national grid (resulting in lower emissions attributable to mains charging of

electric vehicles). A level of emissions by 2041 of 117300 tonnes (from 387600 tonnes at 2013) is projected for Barnet by TfL. This assumes 87% of car km in London will be driven by ultra low emission vehicles by 2041 and that grid emissions intensity reduces by 80% in line with projections from the Department for Business, Energy and Industrial Strategy.

The level of reduction in grid emissions intensity is largely beyond the control of London Borough of Barnet but with that caveat the borough has adopted the target based on the TfL's projection for CO2.

TfL projections for the emission reduction indicators for air quality (NOx and particulates) are also used to set targets for CO_2, NO_X, and particulates included in ***Table 16 - Borough outcome indicator targets*** (page 16).

Outcomes 5, 6, and 7

Targets for the Public transport outcome delivery indicators (outcomes 5, 6 and 7) are set in line with TfL's projections.

Delivery indicators

The borough will monitor and record delivery (or delivery via LIP-funded schemes where applicable) of the delivery indicators below and report these to TfL annually.

Table 15 Annual Delivery Indicators

Description	Unit of data
Outcome 1: London's streets will be healthy and more Londoners will travel actively	
Increase in cycle parking facilities	On-street spaces
	Off-street spaces
Improved facilities for pedestrians and cyclists	Number of new or upgraded pedestrian / cycle crossing facilities provided.
Outcome 2: London's streets will be safe and secure	
Lower speed limits	% of borough road network with 20mph limit

Deliver safety improvements to the highway network and ensure robust monitoring of road safety infrastructure schemes	Number of completed infrastructure schemes and % entered into Traffic Accident Diary System (TADS)
Deliver a programme of training and education to improve the safety of vulnerable road users	Number of people delivered training (eg BikeSafe- London, 121 Motorcycle skills)
Deliver a programme of training and education to improve the safety of vulnerable road users – adults	Trained to Basic cycle skills
	Trained to Urban cycle skills
	Trained to Advanced cycle skills
Deliver a programme of training and education to improve the safety of vulnerable road users – children	Trained to Bikeability level 1
	Trained to Bikeability level 2
	Trained to Bikeability level 3
Deliver a programme of training and education to improve the safety of vulnerable road users	Number of children who received pedestrian skills training
Deliver a programme of training and education to improve the safety of vulnerable road users	Number and proportion of STARS schools – bronze, silver and gold
Outcome 3: London's streets will be used more efficiently and have less traffic on them	
Support the provision of car clubs where it reduces car use and ownership	Number of car club bays implemented or secured by the borough
Deliver a London-wide strategic cycle network, with new, high-quality, safe routes and improved infrastructure	Kilometres of new or upgraded cycle routes
Increase number of publicly accessible electric vehicle charging points	Number implemented
Incorporate sustainable drainage infrastructure into schemes	The effective area (m^2) of impermeable surface (carriageway/ footway/cycle lane/car park, etc.) which drains into the SuDS feature

Outcome 6: The public transport network will be safe, affordable and accessible to all	
Upgrade and maintain network of accessible bus stops	% of stops accessible in borough

Local targets

No additional local targets are intended.

Table 16 - Borough outcome indicator targets				
Objective	**Metric**	**Borough target**	**Target year**	**Additional commentary**
Overarching mode share aim – changing the transport mix				
Londoners' trips to be on foot, by cycle or by public transport	Active, efficient and sustainable (walking, cycling and public transport) mode share (by borough resident) based on average daily trips. Base period 2013/14 - 2015/16.	59% 72%	2021 2041	Increase from 55% recorded 2014/15-2016/17
Healthy Streets and healthy people				
Outcome 1: London's streets will be healthy and more Londoners will travel actively				
Londoners to do at least the 20 minutes of active travel they need to stay healthy each day	Proportion of London residents doing at least 2x10 minutes of active travel a day (or a single block of 20 minutes or more).	36% 70%	2021 2041	Increase from 28% recorded 2014-15 to 2016-17 Assumes that leisure walking (& running) are included in total

Objective	Metric	Borough target	Target year	Additional commentary
Londoners have access to a safe and pleasant cycle network	Proportion of Londoners living within 400m of the London-wide strategic cycle network.	4% 58%	2021 2041	Targets set in line with trajectories provided by TfL. 4% by 2021 is understood to be equivalent to delivery of the North Finchley to Hornsey Quietway
Outcome 2: London's streets will be safe and secure				
Deaths and serious injuries from all road collisions to be eliminated from our streets	Deaths and serious injuries (KSIs) from road collisions, base year 2005/09 (for 2022 target)	84	2022	*The Metropolitan Police Service (MPS) introduced a new collision reporting system in November 2016 - the Case Overview and Preparation Application (COPA). The City of London Police also moved to the Collision Reporting And SHaring (CRASH) system in October 2015. This has had a number of impacts on the data that is available to Transport for London (TfL), and the London Boroughs in the ACCSTATS database for collision investigation.* *Under the new systems officers use an 'injury-based assessment' in line with DfT STATS 20 guidance and online self reporting is available. Both of these changes are expected to provide a better assessment of injury occurrence and severity but have made data collected from November 2016 onwards difficult to compare with earlier data.*
	Deaths and serious injuries (KSIs) from road collisions base year 2010/14 (for 2030 target).	50 0	2030 2041	

Objective	Metric	Borough target	Target year	Additional commentary
				TfL commissioned the Transport Research Laboratory (TRL) to undertake a back-casting exercise to enable pre November 2016 data to be compared with post November 2016 data. These initial back cast estimates include the number of people killed or seriously injured (KSI) for each borough between 2005 and 2017 and this data has been used to update borough targets to align with those contained in the Mayor's Transport Strategy, namely a 65 percent reduction in KSIs by 2022 against the 2005-09 baseline, a 70 percent reduction in KSIs by 2030 against the 2010-14 baseline and zero KSIs by 2041. The targets contained in this final version of our LIP have been set against Outcome 2 for Vision Zero to reflect the reporting changes. The level of ambition remains unchanged, despite these revised figures.
Outcome 3: London's streets will be used more efficiently and have less traffic on them				

Objective	Metric	Borough target	Target year	Additional commentary
Reduce the volume of traffic in London.	Vehicle kilometres in given year. Base year 2015. Reduce overall traffic levels by 10-15 per cent.	1657 1574	2021 2041	As an Outer London borough the expected trajectory is for a 5 to 10% reduction. 1574 is equivalent to a 5% reduction
Reduce the number of freight trips in the central London morning peak.	10 per cent reduction in number of freight vehicles crossing into central London in the morning peak period (07:00am - 10:00am) by 2026.	N/A	N/A	N/A
Reduce car ownership in London.	Total cars owned and car ownership per household, borough residents. Quarter of a million fewer cars owned in London. Base period 2013/14 - 2015/16.	145800 136100	2021 2041	High levels of car ownership in Barnet continue to be recorded. Ownership of a car does not necessarily correspond to increased traffic (despite a 15% increase in ownership over the period 2001 to 2016 traffic levels in Barnet are recorded as static), but as opportunities for travel by other modes increase, a reduction in car ownership can be expected in response. Lower levels of car ownership are

Objective	Metric	Borough target	Target year	Additional commentary
				expected in the relatively short term in parts of the borough where growth is occurring, but elsewhere reduction in ownership is expected to be slower.
Outcome 4: London's streets will be clean and green				

Objective	Metric	Borough target	Target year	Additional commentary
Reduced CO_2 emissions.	CO_2 emissions (in tonnes) from road transport within the borough. Base year 2015/16.	357,700 117,300	2021 2041	2013 level 387600. TfL projection for 2041 is 117300, but see commentary. This is reliant on reductions in CO2 emissions intensity from the national grid as well as changes in the transport mix. The target is set on the basis that projections for grid emissions, that are largely beyond the borough's control, are achieved.

Objective	Metric	Borough target	Target year	Additional commentary
Reduced NO_x emissions.	NO_x emissions (in tonnes) from road transport within the borough. Base year 2013.	560 80	2021 2041	Set in line with TfL projections. 2013 level 1300.
Reduced particulate emissions.	PM_{10} and $PM_{2.5}$ emissions (in tonnes) from road transport within borough. Base year 2013.	PM_{10} 109 PM_{10} 83 $PM_{2.5}$ 53 $PM_{2.5}$ 40	2021 2041 2021 2041	Set in line with TfL projections. 2013 level 127 for PM_{10}, 73 for $PM_{2.5}$.
A good public transport experience				
Outcome 5: The public transport network will meet the needs of a growing London				
More trips by public transport - 14-15 million trips made by public transport every day by 2041.	Trips per day by trip origin. Reported as 3yr moving average. Base year 2013/14 - 2015/16.	275,000 372,000	2021 2041	It is understood that this indicator measures trips by borough of residence.

Objective	Metric	Borough target	Target year	Additional commentary
Outcome 6: Public transport will be safe, affordable and accessible to all				
Everyone will be able to travel spontaneously and independently.	Reduce the difference between total public transport network journey time and total step-free public transport network	-64%	2041	Reduce the difference between average step free journey time and full network journey time from 12 minutes in 2015 to 4 minutes in 2041
Outcome 7: Journeys by public transport will be pleasant, fast and reliable				
Bus journeys will be quick and reliable, an attractive alternative to the car	Annualised average bus speeds, base year 2015/16	10.9 11.3	2021 2041	11.3mph represents a 5% increase in bus speeds compared with the 2015 observed figure of 10.8mph
New homes and jobs				
Outcome 8: Active, efficient and sustainable travel will be the best options in new developments **Outcome 9: Transport investment will unlock the delivery of new homes and jobs**				

Objective	Metric	Borough target	Target year	Additional commentary
No local targets				

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Jamie Blake
Strategic Director for Environment
London Borough of Barnet
Via email

07 December 2018

Dear Jamie,

Barnet's draft Local Implementation Plan

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

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

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

A summary of our key comments is as follows:

- The borough objectives are welcomed. However, they need to demonstrate a stronger commitment overall to supporting a reduction in car dependency to ensure consistency with the MTS.
- The borough needs to clarify their commitment to achieving Vision Zero by 2041 and should strengthen their objectives for this Outcome through the provision of greater detail.

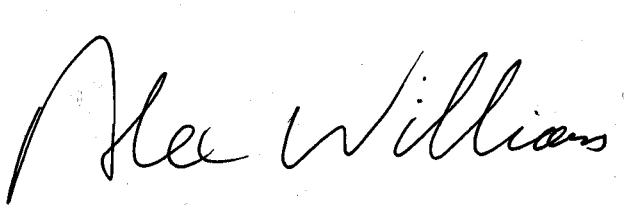
- The borough is asked to strengthen their objectives throughout the LIP through the provision of greater detail. By doing so, the LIP would more strongly demonstrate how the borough intends to achieve its short and longer term Outcome indicator targets.
- The borough is asked to provide more detail on proposals for the delivery of strategic and local cycle routes in Barnet.
- A commitment needs to be made in the borough objectives to achieve at least 95 per cent of bus stops in Barnet as wheelchair accessible by 2025 in accordance with the MTS Accessibility Implementation Plan (Figure 20 in the MTS).
- More detail needs to be provided in the supporting commentary for the Three-Year Indicative Programme of Investment.
- The borough needs to set 2041 targets for Outcome 1b and Outcome 2 and review the targets set for Outcome 3c and Outcome 4.

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

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

Joseph Phelan, Transport Strategy
Ahilan Kanagasabesan, Network Sponsorship

Yours sincerely



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Annex: Third Local Implementation Plan – Consultation Feedback Form December 2018

Borough name: LB Barnet

1. LIP Guidance Requirements

1.1. Requirement 1 – Draft LIP follows the template structure and provides a response to all requirements.

1.2. Requirement 12 – Regard is given to the draft London Plan, Mayor's Environment Strategy and Health Inequalities Strategy. More detail could be provided on how other Mayoral strategies have influenced the LIP.

2. Objective Setting – Mode Share

2.1. The draft LIP sets a number of borough objectives contributing to achievement of the borough's overarching mode share aim. Objectives include promotion of active travel, application of Healthy Streets principles to deliver improvements, promoting and enabling more sustainable travel, improving orbital public transport connectivity and securing growth in opportunity areas based on sustainable development. These objectives are welcomed.

2.2. **However, the borough is asked to strengthen their objectives throughout the LIP through the provision of greater detail. By doing so, the LIP would more strongly demonstrate how the borough intends to achieve its short and longer term Outcome indicator targets, including for mode shift.**

2.3. For example, given the key challenge highlighted in the draft LIP in relation to the necessity for improved orbital public transport connectivity, the LIP could provide much greater detail on the borough's short and longer term aspirations, in particular in relation to enhanced orbital bus provision. In addition, the borough is asked to provide much greater detail on their aspirations for the delivery of strategic and local cycle routes.

2.4. Moreover, the objectives could be stronger on the borough's intentions to support efficient freight in Barnet, namely in the context of town centres and new developments.

2.5. Given the significant growth anticipated in Barnet, there is much opportunity to facilitate mode shift through supporting car-free and car-lite development in the borough's more connected areas. The draft LIP does recognise this opportunity and makes a commitment to promote sustainable development in Barnet's opportunity areas. There is also reference in Objective D to "applying controls round car-free and car-lite development" and "introduction, extension and review of CPZs". This is welcomed. However, the borough could make a stronger commitment in their objectives to facilitating mode shift through supporting car-free and car-lite development in accordance with public transport improvements over time.

2.6. The LIP could be much stronger in outlining how, short and longer term, the borough will encourage reduced car use through walking, cycling and public transport improvements (i.e. 'carrot' measures) given the stated reluctance to introduce 'stick' measures to discourage car use in the less dense suburbs.

2.7. The MTS is not about being anti-car but supporting people to travel without having to rely solely on cars. The 'changing the transport mix' section of the LIP could give this much greater recognition, in particular opportunities for car dependency to be reduced through supporting walking and cycling for short trips, as well as over time through improved orbital public transport connectivity and support for Good Growth.

2.8. **The borough objectives need to demonstrate a stronger commitment overall to supporting a reduction in car dependency to ensure consistency with the MTS.**

2.9. Additionally, it is important for the borough to clearly indicate short term objectives stating their intentions for delivery for the period to 2021/2022. These objectives would sit under the longer term overarching policy objectives.

2.10. Also, it would be beneficial to outline the current transport mix (i.e. mode share breakdown) in this section.

3. Objective Setting – MTS Outcomes

3.1. *Outcome 1*

3.1.1. The draft LIP identifies a number of objectives for the purpose of achieving this Outcome. There is a commitment to develop a strategic network for walking and cycling, including cycle routes reflecting TfL's Strategic Cycling Analysis. There are also objectives to deliver improvements through the application of Healthy Streets principles, including in town centres and development areas, as well as Liveable Neighbourhoods in Colindale and Brent Cross. Included in the challenges and opportunities commentary there is reference to plans currently in consultation for improving cycle and walking access to local facilities such as Copthall Sports Hub. Other borough objectives are identified to deliver against this Outcome, including road safety improvement measures and promoting more sustainable travel. These objectives are welcomed.

3.1.2. However, it has not been made clear in the objectives or supporting commentary what the borough's specific short and longer term aspirations are for the delivery of a strategic cycle network. Although potential corridors are recognised and cycling potential analysis has been undertaken, it has not been made explicit what the borough's intentions for the delivery of strategic cycle routes over the period to 2021/22 and longer term to 2041 are, other than delivery of the in-development North Finchley to Hornsey Quietway.

3.1.3. Moreover, it is not clear what the borough's aspirations are in terms of the delivery of local routes to complement the development of a strategic cycle network (in accordance with Proposal 3b of the MTS) over the short and longer term.

3.1.4. **Hence, the borough is asked to provide more detail on proposals for the delivery of strategic and local cycle routes in Barnet.**

3.1.5. Figure 7 (page 37) is a useful inclusion in the LIP. However, it does not identify Strategic Cycling Analysis 'medium' potential corridors. This would be very beneficial to identify prioritised routes for delivery and enable comparison to existing routes which could be upgraded to form part of the strategic network. On the basis of this analysis, the borough could then map the strategic and local cycle network intended for delivery by 2021/2022. Longer term aspirations for 2041 could also be outlined.

3.1.6. More detail could be provided on the specific nature of the Healthy Streets improvements that will be delivered under Objective B. Greater detail on the locally specific barriers to walking and cycling that will be addressed could also be outlined.

3.1.7. The borough should also outline proposals for enhanced provision of cycle parking or ‘soft’ measures such as cycle training, behaviour change initiatives or community engagement to support an increase in cycling for shorter trips in Barnet.

3.2. *Outcome 2*

3.2.1. Chapter 2 of the draft LIP outlines the borough’s objective to seek to achieve Vision Zero for road danger (no KSIs) by 2041. This is strongly welcomed. However, a concern is raised in the executive summary regarding the achievability of Vision Zero “given the numbers of strategic roads in the borough and the reality that only a complete removal of all traffic can truly deliver zero serious accidents.” Moreover, in setting targets for KSI reduction (page 96), the borough affirm their commitment to Vision Zero but not necessarily its achievement by 2041.

3.2.2. **Hence, the borough needs to clarify their commitment to achieving Vision Zero by 2041.**

3.2.3. The draft LIP identifies a number of policy objectives for the purpose of achieving this Outcome. The main policy objectives are “programmes of road safety, education, training and publicity”; “targeted engineering schemes to address collision hot-spots, including major proposals that apply Healthy Streets principles”; and “delivery of 20mph areas around schools and other areas where pedestrian activity is high”. These objectives are welcomed.

3.2.4. **However, the borough should strengthen their objectives for this Outcome through the provision of greater detail.**

3.2.5. For example, the borough is asked to indicate what specific road safety, education, training and publicity measures they intend to deliver. The draft LIP identifies a proportional increase in pedal cycle and motorcycle KSIs in Barnet. As such, training and education could focus on these particular vulnerable road user groups.

3.2.6. The borough objective to use a targeted engineering approach to address collision hot-spots is welcomed. However, more detail could be provided on specific locations and measures, based on any spatial analysis undertaken. The borough is also asked to make a commitment in their objectives to the robust monitoring of infrastructure schemes, entering them on to TADS.

3.2.7. The borough is also asked to give consideration to the Safe Systems pillar of ‘safe vehicles’. Measures the borough could implement in

relation to this include promoting a work-related road risk policy to address the borough fleets.

3.2.8. In relation to improving security and reducing fear of crime, the borough is asked to set a specific objective in relation to this and give consideration to the appropriate use of HVM.

3.3. *Outcome 3*

3.3.1. It is stated in the draft LIP that the borough does support the aim of reducing reliance on private car use. This is welcomed. A number of challenges are highlighted, in particular, that the borough does not have direct control over key roads in the borough (including the A1, M1, A41 and A406), and that many car trips across Barnet have origins and destinations outside the borough. On this basis, the borough should emphasise in this section their commitment to working with key stakeholders such as TfL and neighbouring boroughs/local authorities to achieve the borough's traffic reduction targets.

*3.*3.2. The draft LIP also outlines that maximum parking levels for residential development in the borough are anticipated to reduce towards draft London Plan levels in the future. This is welcomed.

3.3.3. It is also stated that in the less dense suburbs car use and ownership "should not be made more difficult than it needs to be". To reiterate, the MTS is not about being anti-car but supporting Londoners in moving around the city without having to rely solely on car use. **A stronger commitment needs to be made in this section to supporting a reduction in car dependency.**

3.3.4. The borough is asked to outline more explicitly their commitment to reducing traffic in Barnet through the prioritisation of space-efficient modes of travel (in accordance with Policy 5 of the MTS). This is important given the high levels of growth anticipated in Barnet. The contemporary challenges in Barnet are acknowledged. However, the LIP could give greater recognition of the opportunities presented by new development and enhancement of public transport connectivity and services over time in facilitating a reduction in car use.

3.3.5. The draft LIP identifies a number of proposals under Objective D for the purpose of achieving this Outcome. This includes school travel planning and STARS, piloting school street closures (resident access only at certain streets around some schools), travel planning for new developments, review of on-street parking provision including introduction, extension and review of CPZs and making provision for car clubs. Supporting objectives include proposals to enhance public transport provision in the borough, including bus priority improvements

and orbital express bus provision. These objectives are welcomed. **However, the borough is asked to strengthen these objectives.**

3.3.6. As stated previously, the significant levels of growth projected in Barnet provides the opportunity to support car-free and car-lite development in the more connected areas in the borough. There is reference in the objectives to "applying controls around car-free and car-lite development" and the statement that "the level of development in Barnet provides opportunities to introduce or pilot new or innovative approaches to transport with lower levels of parking in accessible areas" is strongly welcomed. However, a stronger overall commitment could be made to supporting car-free and car-lite development in the more connected locations in Barnet in accordance with public transport improvements over time. This would support achievement of the borough's targets to reduce traffic and car ownership levels to 2041. This would also build on commentary already provided on plans for improved walking, cycling and public transport provision in the context of new development (Brent Cross, Colindale and North Finchley), as well as Objective H. This is also important given the stated reluctance to make car use more difficult in the "less dense suburbs".

3.3.7. Moreover, a strengthening of the borough's objectives for the development of a strategic and local cycle network, enhanced orbital bus connectivity and bus priority – namely through the provision of greater detail – would also be beneficial in relation to this Outcome.

3.3.8. A challenge highlighted is in relation to the large number of faith schools with extended catchment areas in the borough. On page 6 of the draft LIP it is stated that "school travel planning doesn't adequately tackle the challenges in this situation and further measures, including improved public transport options, may be needed." The borough is asked to indicate in their objectives on school travel planning how this specific challenge will be addressed.

3.3.9. The borough's commitment to travel planning for schools and new developments is welcomed. The borough is asked to give consideration to workplace travel planning and behaviour change, in particular in those locations already well connected by public transport.

3.3.10. The borough's intention to support car club provision is welcomed. However, this should be linked to a reduction in the availability of private parking, in accordance with Proposal 19 of the MTS.

3.3.11. In relation to freight, the borough is asked to provide more detail on their planned freight consolidation strategy. The borough is also asked to indicate the measures likely to be adopted in Barnet in accordance with

the work to be undertaken as part of the North London Freight Study. In particular, the borough should give consideration to measures to support efficient freight deliveries in town centres.

3.4. *Outcome 4*

3.4.1. A number of policy objectives for the purpose of achieving this Outcome have been identified. Key objectives include facilitating implementation of identified measures from the school air quality audits, pressing for a sub-regional extension and tightening of the ULEZ, delivering open access EV charge points, facilitating car-free days and events and increasing greening and tree planting. These objectives are welcomed.

3.4.2. **However, the borough is asked to strengthen their objectives.** Of the 14 air quality focus areas identified in Barnet, it is indicated in the draft LIP that 9 are associated with the TLRN or M1. The borough is asked to identify those 5 focus areas not associated with these road networks and indicate what specific measures will be used at these locations to address air quality issues.

3.4.3. The borough's commitment to deliver open access EV charge points in Barnet is welcomed. The borough is asked to consider measures to support the identification of sites for rapid charging points and support development of a rapid charging network for commercial fleets (taxis, PHVs and freight vehicles).

3.4.4. Although referenced elsewhere in the draft LIP, the borough is asked to give greater recognition to SuDS in this section.

3.5. *Outcome 5*

3.5.1. The draft LIP outlines the borough's intention to enhance public transport connectivity and services in the borough, in particular in relation to orbital travel. Key objectives include supporting and facilitating introduction of the WLO line and Crossrail 2 to New Southgate and working with TfL to realise the delivery of orbital express bus provision and demand responsive public transport. These objectives are welcomed.

3.5.2. The key focus for boroughs in relation to this Outcome is supporting mode shift from car use through the delivery of complementary street and public transport improvements to provide an attractive whole journey experience (Policy 10 of the MTS). However, borough Objective B – "to apply Healthy Streets principles, to deliver a range of improvements" is only cited as a supporting objective for achievement of this Outcome.

3.5.3. **As such, the borough is asked to place more emphasis on this objective in the context of this Outcome.** Moreover, the borough is also asked to provide more detail on how they will support the provision of an improved whole journey experience to facilitate mode shift away from the car, building on the existing commentary. For example, in relation to Objective B, more detail could be provided on the specific nature of the Healthy Streets improvements envisaged for particular transport hubs, especially in terms of enhanced priority for sustainable modes and improved access by walking and cycling.

3.5.4. Given the emphasis placed in the draft LIP on the need for improved orbital public transport connections in Barnet, the borough is asked to provide greater detail on their aspirations for orbital express bus provision and demand responsive public transport. It is recognised that this will be explored in the borough's emerging long term transport strategy. However, it would be beneficial if greater detail could be provided in the LIP, for example particular routes or locations the borough considers to be a priority.

3.6. *Outcome 6*

3.6.1. The draft LIP identifies a number of policy objectives for the purpose of achieving this Outcome. The borough indicate that they will support step-free proposals for Mill Hill East, Burnt Oak, Colindale and Brent Cross LU Northern Line stations, deliver the new Brent Cross West station with step-free facilities and support Network Rail to deliver step-free facilities for Mill Hill Broadway station. There is also a commitment to increase the percentage of accessible bus stops in the borough from 91% to 98%. These objectives are welcomed.

3.6.2. **However, a commitment needs to be made in the borough objectives to achieve at least 95 per cent of bus stops in Barnet as wheelchair accessible by 2025 in accordance with the MTS Accessibility Implementation Plan (Figure 20 in the MTS).** The Equalities Act (2010) places a duty on both public transport operators and highway authorities to provide reasonable adjustments so that disabled passengers are not disadvantaged. Providing access between a low-floor bus (fitted with ramps) and the footway is crucial to fulfilling these duties.

3.6.3. The borough is also asked to indicate any longer term aspirations for delivering step-free accessibility at stations in the borough, in addition to the proposals already identified.

3.7. *Outcome 7*

3.7.1. The draft LIP set the objective for the borough to “deliver programmes of Bus Priority improvements, especially focusing on locations that provide benefits for buses serving development areas, orbital movement and higher passenger numbers.” This objective and the supporting commentary in the challenges / opportunities section are welcomed. The main objective set in the draft LIP for Outcome 7 is Objective F, which is also the main objective set for Outcome 5. Whilst there are interrelationships between these two outcomes, the key focus for boroughs in relation to Outcome 7 concerns improving bus journey times and journey time reliability.

3.7.2. **As such, the borough is asked to provide specific policy objectives for Outcome 7 on this basis, thus strengthening their commitment to the delivery of Bus Priority improvement programmes.**

3.7.3. For example, the statement in the challenges / opportunities section that “Healthy Streets improvements on major roads provide opportunities to re-balance the provision of road space to provide facilities that better support bus movements” is strongly welcomed. The supporting commentary in the challenges / opportunities section (in particular the final paragraph on pages 55-56) would form the suitable basis for the determination of borough objectives.

3.7.4. In setting objectives on this basis, the borough is asked to consider their plans in relation to managing kerbside space and restricting parking to minimise delays to buses, installing more bus lanes and extending bus lane operating hours.

3.7.5. More detailed analysis of the specific challenges in Barnet in relation to bus speeds and journey time reliability could be provided, in particular in terms of spatial analysis.

3.8. *Outcomes 8 and 9*

3.8.1. The borough’s intention to seek to “secure sustainable transport in relation to all developments and to maximise active travel to new development sites” is welcomed. As stated previously, the Council’s review of its car parking policy in its local plan with an expectation of moving towards the draft London Plan standards is also welcomed and will be an essential element to ensure that new development is sustainable.

3.8.2. **Given the high levels of growth projected in Barnet, the borough is asked to strengthen Objective H.** As stated previously, the borough could be stronger in making a commitment to support car-free and car-

lite development in Barnet's more connected locations in accordance with public transport improvements over time. It is recognised that there is reference to "applying controls around car–free and car-lite development" in Objective D under Outcome 3 and it would be suitable to articulate this more strongly in the context of Outcomes 8 and 9.

3.8.3. Moreover, in the context of high growth, the need to use street space efficiently will increase and it may not be possible to accommodate higher levels of car ownership, particularly in the better connected areas of the borough. Additional on-street parking controls, in particular, may be necessary in areas of permit-free residential development with no or low parking if these are to come forward successfully. As such, the borough is asked to consider in their LIP the need to reduce high car ownership levels over time in accordance with improvements to public transport links, concentrating measures in areas with greater public transport access.

3.8.4. Alongside limiting parking provision and improvements to public transport, walking and cycling infrastructure, the borough should also outline other measures to support reduced car dependency in the context of new development. For example, car club provision in lieu of private car parking and cycle parking and storage provision.

3.8.5. The borough objectives in relation to rail freight and construction consolidation are recognised, in addition to the work the borough will undertake on a North London Freight Study. However, the borough is asked to provide more detail on 'efficient freight' in relation to deliveries and servicing in the context of new developments.

4. Borough Targets

4.1. *Outcome 1*

4.1.1. The Outcome 1a indicator does include walking and cycling for leisure and going for a run is included as a walk trip in the LTDS travel diary.

4.1.2. **A target has not been set for 2041 for Outcome 1b and no explanation has been provided for this. The borough needs to set a target for 2041 and this should be set in accordance with the trajectory in the MTS borough data pack.**

4.1.3. The 2021 trajectory is based on the delivery of measures outlined in the TfL Business Plan to 2021/2022. The Strategic Cycle Network is defined as routes that serve key corridors of demand (as identified by the Strategic Cycling Analysis), routes that are in line with the LCDS (high

quality infrastructure design, direct alignments etc.), and routes that fit into the wider network (i.e. link to other planned routes).

4.2. *Outcome 2*

4.2.1. The borough's commentary in relation to Vision Zero is acknowledged. **However, the borough needs to set a target set of 0 KSIs for 2041 in accordance with Policy 3 of the MTS.**

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

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

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

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

TfL commissioned the Transport Research Laboratory (TRL) to undertake a back-casting exercise to enable pre November 2016 data to

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

4.3. *Outcome 3*

4.3.1. The borough's commentary in relation to their target setting for car ownership is acknowledged. **However, the borough should set a target for 2041 in accordance with the MTS borough data pack trajectory.**

4.3.2. Growth in Barnet, if delivered in accordance with the transport principles of Good Growth, offers the significant opportunity over time to reduce car ownership levels in the borough. Given the considerable levels of development projected in Barnet, in addition to the scope of change anticipated to be delivered based on implementation of the MTS, it is not unreasonable to set a target for 2041 in line with the MTS borough data pack trajectory.

4.3.3. The borough's commitment to the traffic reduction trajectory also suggests greater ambition could be demonstrated in relation to reducing car ownership levels.

4.3.4. It is not unreasonable for the borough to set a target for 2021 which deviates from the MTS borough data pack trajectory, recognising that changes in travel behaviour will happen over time in accordance with new development and improved public transport and active travel provision in the borough. This is also based on the evidence provided in the draft LIP.

4.3.5. However, the borough is asked to set a target for 2021 which demonstrates an intention to reduce car ownership levels over the shorter term. To reiterate, reducing car ownership levels is not about being anti-car but providing people with opportunities to lead car-free lifestyles and supporting mode shift to active, efficient and sustainable modes.

4.4. *Outcome 4*

4.4.1. The borough's commentary in relation to their target setting for Outcome 4 is acknowledged. However, the MTS trajectories are not based on bringing forward the date for 100% zero emission road transport to 2041 and the MTS does not seek to do this. The statement that *"*emissions from electric vehicle charging from the mains being about one third of those for diesel power*"* does not appear to take into account that the CO_2 emissions of vehicle km driven by electric vehicles will decrease over time, as the grid emissions intensity of the national grid decreases. TfL modelling for the MTS trajectories follows BEIS projections of this intensity with 2041 emissions at c50 gCO_2e / kWh, c80% lower than the MTS base year. Moreover, in relation to the fleet composition, TfL's strategy scenario for the MTS is for c87% of car km in London to be driven by Ultra Low Emission Vehicles in 2041, with all road vehicles reaching zero emission by 2050. In relation to NO_x, Barnet will benefit from the ULEZ expansion and LEZ strengthening. In relation to PM emissions, a reduction in emissions levels is more contingent on traffic reduction than changes in fleet composition due to the effects of tyre and brake wear and the borough have set targets for traffic reduction in line with the MTS borough data pack trajectory.

4.4.2. **On this basis, the borough needs to review their targets for Outcome 4 which should be set in accordance with the Outcome indicator trajectories in the MTS borough data pack.** In particular, the borough should demonstrate their intention to achieve zero emission road transport by 2050 in accordance with the Zero Emission Road Transport Timeline in the MTS (Figure 15).

4.5. *Outcome 5*

4.5.1. This is trips by borough of residence.

5. Delivery Plan – Longer Term Interventions to 2041

5.1. The borough is asked to provide further supporting commentary. Table 8 could be strengthened through the identification of any additional interventions the borough considers necessary to deliver the MTS in Barnet over the longer term.

5.2. In addition, the borough is asked to cross-reference their objectives against Table 8 to ensure the full remit of their longer term aspirations for delivery against each Outcome is captured.

5.3. Some interventions included in Table 8 could be referenced more explicitly in the borough objectives section.

6. Delivery Plan – Three-Year Indicative Programme of Investment

6.1. In the supporting commentary for the Three-Year Indicative Programme of Investment, it is stated that a "long list of proposals that aim to deliver the borough transport objectives for the three year programme has been identified from officers across the council and partner organisations." However, this list has not been referenced.

6.2. **More detail needs to be provided on the nature of the measures that are to be implemented under each of the intervention categories**. This would not necessarily go into the same level of detail as the Annual Programme but would provide an indication of the type of measures (including scheme-specific detail, locations and timeframes) that will be delivered across the three years and provide more detail on the borough's intentions than currently outlined in the supporting commentary.

6.3. It is also not clear if the proposals listed in Table 5 are to be delivered only in 2019/20 or if this table also includes measures which will be delivered in years 2 and 3 of the Three-Year Indicative Programme of Investment. The borough is asked to clarify this.

7. Delivery Plan – Annual Programme

7.1. Comments on the Annual Programme (Proforma A) will be provided separately via the borough's Network Sponsorship contact.

London Borough of Barnet Draft LIP3 2018-2041

This response to the consultation on the London Borough of Barnet Draft LIP3 is from Barnet Cycling Campaign (Barnet Cyclists), the local borough group of London Cycling Campaign (LCC). We represent the interests of cyclists living or working in Barnet and aim to expand the opportunities for all to cycle safely in the borough.

The group has over 300 members in Barnet of all ages and abilities, including commuter, utility, sport and leisure cyclists. We encourage more active, healthy forms of travel and, in particular, help to get people out on their bikes and riding on the roads in Barnet. We campaign to make streets in Barnet healthier, safer and an improved experience for all cyclists, walkers and public transport users.

The draft plan in its current form does not fully address the issues faced by Barnet, in particular the lack of safe space for cycling on direct routes and within neighbourhoods.

Our response identifies further challenges and opportunities, focuses on why the borough transport objectives are not sufficiently robust to achieve the desired shift to walking, cycling and public transport set by the Mayor's Transport Strategy up to 2041, and suggests further measures and targets.

Have the main challenges and opportunities to delivering the MTS vision and outcomes been identified (pages 24-60) 2
1 Healthy Streets and Healthy People, including traffic reduction strategies..... 2
Outcome 1: Active 2
Outcome 2: Safe 3
Outcome 3: Efficient 3
Outcome 4: Green 5
2 A good public transport experience 5
Outcome 5: Connected 5
Outcome 6: Accessible 6
Outcome 7: Quality 6
3 New homes and jobs 6
Outcome 8: New Growth 6
Outcome 9: Unlocking 6
Are the borough transport objectives identified in the document (pages 26-29) suitable for addressing the challenges 7
A. Healthier lifestyles 7
B. Healthy Streets 7
C. Vision Zero 7
D. Sustainable Travel 8
E. Air Quality 8
F. Public Transport Routes 9
G. Accessibility on Public Transport 9
H. Sustainable Development 9
Should the LIP include other major proposals or general areas of work (pages 62-74 & 80-81) 10
Should any other targets be identified (pages 103-110) 11

Have the main challenges and opportunities to delivering the MTS vision and outcomes been identified (pages 24-60)

We have identified some additional challenges and opportunities:

1 Healthy Streets and Healthy People, including traffic reduction strategies

Outcome 1: Active

London's streets will be healthy and more Londoners will travel actively

Liveable Neighbourhoods (LNs)
The LIP refers to the benefits of the LNs for Colindale/Grahame Park, funded through the Mayor's LN scheme, but it needs to recognise the need and opportunity for LNs or Low Traffic Neighbourhoods to cover the entire borough and recognise the challenge of delivering that. The fear of limiting through traffic is often exaggerated, as seen with the extended closure of Hadley Green Road. The neighbouring outer London borough of Enfield has proposals for 36 Quieter Neighbourhoods[1] covering all residential parts of that borough and these can be very popular with residents.[2]

Promoting physical activity
We welcome plans to use green spaces as alternative routes and to link parks, but these will never be enough to provide a network. To achieve significant modal shift to cycling they need to be part of an integrated cycling network, utilising direct road routes, filtered residential areas and lower speed limits. Car parks are being expanded in parks, but people should not feel the need to drive to a park in order to go cycling. The LIP is silent on encouraging eBikes, which are particularly valuable for switching elderly and less fit people onto active travel in hilly areas.

The school run
The challenge of changing attitudes and getting parents & grandparents to stop driving children to school should be included. In a suburban area schools are mostly within cycling and walking distance.

Strategic cycle network
The MTS says, "Walking or cycling will be the best choice for shorter journeys. Seventy per cent of Londoners will live within 400m of the London-wide strategic cycle network." The LIP is far less ambitious, saying "We will seek to make cycling and walking more attractive for leisure, health and short trips."

The LIP needs to grasp this opportunity, show the full SCA map and demonstrate how it will meet this need by 2041. Unless journeys are straightforward and not intimidating to cyclists, the uptake from new riders is likely to be miniscule. A network that works for new cyclists, older cyclists and even children is key.

[1] https://drive.google.com/open?id=18wLjDjyHKQ3bRb9D1ZI4ht73NlnUUXUM
[2] http://betterstreets.co.uk/bowes-ward-petitions-for-a-low-traffic-neighbourhood/

Outcome 2: Safe

London's streets will be safe and secure

Liveable Neighbourhoods
The plan only mentions LNs in development areas (Colindale, Brent Cross and possibly New Southgate). It needs more ambitious targets for rolling out Liveable Neighbourhoods (or at least Low Traffic Neighbourhoods) across the borough for safety reasons. These should have limited points of access for motor vehicles to eliminate through traffic, coupled with free access for cyclists and pedestrians.

20 mph areas
Rather than in limited locations around schools and pedestrian areas, to promote cycling and walking between home and school and more generally for everyone, 20 mph should be the norm for all residential areas and on main roads where there is no segregation.

Whilst there may be concern regarding enforcement of lower speed limits – if authorities properly engage communities from the outset in street design that prioritises people (wider pavements, removal of street markings, addition of parklets etc) then less enforcement will be necessary, as the design of roads will lead to 20mph.

Evidence: Through a safe systems approach[3] to road safety lower speeds have been proven to reduce death and serious injury whilst improving quality of life. The risk of being killed is almost five times higher in collisions between a car and a pedestrian at 50km/h (31mph) compared to the same type of collisions at 30 km/h (18.6mph), reports OECD.

In Bristol a recent evaluation[4] done by the University of the West of England of their rollout of 20 mph found that four fatalities, 11 serious and 159 slight injuries were avoided each year. This equates to a cost saving of over £15 million. There was also an average reduction in speed of 2.7 mph across the city.

Education and training
We support programmes of Road safety, Education, Training and Publicity. To enable reporting against targets, there should be separate targets for numbers of adults and children given cycle training courses.

Outcome 3: Efficient

London's streets will be used more efficiently and have less traffic on them

Cycling infrastructure
Overall, there is a serious lack of ambition to "Deliver a London-wide strategic cycle network, with new, high-quality, safe routes and improved infrastructure".
The LIP needs to include annual targets for Km of new and upgraded cycle routes.
Barnet Cycling Campaign have published a map, based on local knowledge and TfL's Strategic cycling Analysis, showing the poor quality of cycling provision on a potentially good cycle network https://barnetlcc.org/safer-cycling-mapped-out/

There should be a commitment to London Cycle Design Standards, including no use of 'Cyclists Dismount' signs.

Modal share
With housing growth and the increasing population in Barnet with cars, plus more courier and construction traffic, the LIP should model the number of trips by all

[3] https://travelwest.info/project/ee-no-167-speed-crash-risk-oecds-recommendations
[4] http://eprints.uwe.ac.uk/34851/

modes to illustrate the scale of the problem. Will the 72% target for sustainable trips in Barnet (lower than the overall 75% in the MTS for outer London) be sufficient to reduce road traffic? If total trips increase how much of a reduction in the number of trips by motor traffic is expected?

Use of a car
Car ownership is increasing and the plan says that car ownership and the use of a car should not be made more difficult than it needs to be. People will generally take the easiest transport option, so it needs to be easier, quicker and cheaper to use sustainable modes more often.

Car clubs
We welcome car clubs as they can reduce the number of parked cars cluttering the streets and make people think about the cost of each trip they make.

Parking
Free, on street parking needs to be restricted to nudge people towards alternatives and to reduce traffic congestion and pollution, freeing up road width for safer cycling and buses.

Allowing parking on alternating sides along the length of a road is also a safety measure.

On street cycle hangars, which can store up to 6 bikes in half a parking bay, are needed to provide secure residential cycle parking.

Cycle hubs are needed at main stations.

Orbital routes
Alongside public transport, direct, safe, orbital cycle routes are also needed as part of a network to enable a realistic choice to cycle. This is particularly true for orbital routes where public transport is infrequent.

Electric vehicles
EVs do nothing to change the mode share, which is needed to reduce traffic, improve road safety and improve fitness. EV charging should not be included in this section, except in the negative context that pavement clutter can hinder walking and charging points would remove ability to remove parking to provide space for cycling on strategic routes.

School travel plans and School Streets
We welcome the introduction of school streets[5] and Barnet's high levels of cycle training, but without an integrated cycling network and Liveable Neighbourhoods few parents will allow their children to cycle to school.

One-way streets
One-way streets can be used to limit through traffic, but should allow contraflow cycling and not make cycling or walking more difficult. This is often used in Continental countries, where sections of opposed one-way working are used alongside other "Home Zone" treatments to create people-friendly residential streets with very low motor traffic levels. This has an effect similar to "cells" of modal filters, and sometimes can have advantages (such as eliminating problems from cars turning in restricted spaces, easing emergency access).

[5] https://hackney.gov.uk/school-streets

Outcome 4: Green

London's streets will be clean and green

Have Environmental Health applied for more funding from The Mayor's Air Quality Fund[6] (MAQF)? A £6M funding pot is currently available to Councils (deadline 11 Jan 2019).

Air quality audits and measures arising

In addition to schools, there are play areas next to major roads, e.g. in Basing Hill Park next to the A41, where Barnet Cyclists assist with cycle training. Shopping streets must also be included in pollution reduction measures.

We need to raise awareness that pollution is highest inside vehicles.

Idling engines

This is not mentioned, but we need to raise awareness of pollution from illegally idling engines, particularly at stations, taxi ranks and bus stands https://idlingaction.london/. We support the call by Mums for Lungs[7] asking councils to work together and apply jointly for funds to:

- set up and run a joint, centralised website and text message number where anyone can report idlers who will then be sent a letter informing them of the impact and illegality of idling and the more general impact of driving on their and other people's health
- change the current idling policies to ensure greater enforceability in a consistent way across large parts of London with fines appropriate to the harm it is doing to residents' health
- deliver a dedicated communications campaign, for example, by sending each household a leaflet on idling, driving and air pollution in the Barnet First magazine or with the council tax bill in 2019

Electric vehicles

Whilst pure EVs cut local NOx and CO2 emissions, there is also growing evidence that, because they may be heavier, electric vehicles can be more polluting than some diesel vehicles[8]. The erosion and breakdown of brake pads and tyres on the road generates very fine particulate (PM2.5) dust, including microplastics[9] that gets deep into the lungs and pollutes the oceans.

We question the practicality and cost of installing sufficient charging points on streets to ultimately serve every parking space. Additional on street charging points must not obstruct footways or cycleways with cabinets and cables.

2 A good public transport experience

Outcome 5: Connected

The public transport network will meet the needs of a growing London

Crossrail 2 to New Southgate

Decking the A406 here was one of Boris Johnson's ideas, but it is not in the current MTS. While it would be nice to have, should it be in the plan if there is no funding?

[6] https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/mayors-air-quality-fund
[7] https://en-gb.facebook.com/MumsforLungs/
[8] http://shrinkthatfootprint.com/electric-car-emissions and https://eandt.theiet.org/content/articles/2017/03/particle-pollution-from-electric-cars-could-be-worse-than-from-diesel-ones/.
[9] https://friendsoftheearth.uk/plastics/tyres-and-microplastics-time-reinvent-wheel

Town centres and transport hubs
Congested town centres and transport hubs are currently difficult for cycling and should be the first places where on-road cycling infrastructure is provided. The benefits can be explained with evidence, including the recent TfL analysis of the economic benefits of walking and cycling[10].

Improving public transport facilities here is an opportunity to encourage cycling to these destinations by making them nodes in the cycle network.

Bike hubs, with secure parking and services, should be established at centres and at transport hubs to making cycling to the station the best option.

Outcome 6: Accessible

Public transport will be safe, affordable and accessible to all

Step free access at stations
The plan should recognise that some people who can only walk short distances use cycles and e-Bikes as mobility aids[11] and want to be able to take them to stations and on public transport.

Outcome 7: Quality

Journeys by public transport will be pleasant, fast and reliable

Healthy Streets improvements
Healthy Streets improvements to better support bus movements are an opportunity to re-balance the provision of road space to improve facilities for cyclists alongside buses.

3 New homes and jobs

Outcome 8: New Growth

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

Provision in developments
The plan is an opportunity to include Borough objectives on how cycling and other sustainable transport will be made the best option in new developments.

Orbital routes
The plan accepts that a relatively high degree of car-based travel will still occur. Plans need to enable cycling to play an important role on orbital routes, which are much less well served by public transport than radial routes, and provide safe routes between developments and key outside destinations.

Outcome 9: Unlocking

Transport investment will unlock the delivery of new homes and jobs

Walking and cycling routes
Walking and cycling routes are also needed to serve Brent Cross and other development areas and to link them into the wider area.

[10] https://tfl.gov.uk/corporate/publications-and-reports/economic-benefits-of-walking-and-cycling
[11] https://wheelsforwellbeing.org.uk/mobility-and-my-bike/

Are the borough transport objectives identified in the document (pages 26-29) suitable for addressing the challenges

We have identified areas where borough transport objectives need to be strengthened:

A. Healthier lifestyles

Borough-wide network

We support the objective for a high quality on and off road cycle network based on TfL's Strategic Cycling Analysis[12], but the full SCA analysis needs to be shown rather than only the top and high potential links (LIP3 Fig 7). Previous LIP funding included "Define borough-wide strategic walking & cycling network and improvements needed" by 2020/21, but so far there appears to be only one possible Quietway (North Finchley to Hornsey) and some possible new green routes, to demonstrate commitment.

Quietways have often proved slow, difficult to deliver and poor quality. They have a role, particularly for providing safe crossings of main roads for walkers and cyclists. However, there also needs to be real commitment to safe, direct, comfortable and continuous routes, with space on main roads re-allocated from the general carriageway, not the footway.

In August 2017, Barnet Cycling Campaign provided Barnet Council with a good basis for this planning, based on the locations of schools, shopping, businesses, hospitals and Sports Centres. This was provided as both a Google Map of suggested network[13] and a Schematic Map of suggested network[14] and we are keen to work closely with the council and TfL on this.

B. Healthy Streets

Healthy Streets principles need to apply to ALL LIP and LN schemes, demonstrating a significant improvement on the Healthy Streets score.

C. Vision Zero

Dangerous junctions

All main road junctions should be assessed for cyclist safety (real and perceived) as two thirds of collisions happen at junctions. Barnet Cycling Campaign has published a map showing particularly dangerous junctions and other issues[18]. There may be quick wins, such as: removing left-turn only lanes, including early release stages and advance stop lines that do not need to wait for major schemes.

[12] http://camdencyclists.org.uk/tfl-SCA-maptiles/SCA-fig5.1trans/leaflet.html
[13] https://drive.google.com/open?id=1aiv76KY-lLLz2-Izhpig5R2FD9g&usp=sharing
[14] https://docs.google.com/drawings/d/1yxeGJjGSZgijKU9HLyYzs0ysonZk8mH51ZVkdbAgXug/edit?usp=sharing
[15] http://camdencyclists.org.uk/tfl-SCA-maptiles/SCA-fig5.1trans/leaflet.html
[16] https://drive.google.com/open?id=1aiv76KY-lLLz2-Izhpig5R2FD9g&usp=sharing
[17] https://docs.google.com/drawings/d/1yxeGJjGSZgijKU9HLyYzs0ysonZk8mH51ZVkdbAgXug/edit?usp=sharing
[18] https://drive.google.com/open?id=1F2QkVA2ig7F_K5ewO09QafyybUY&usp=sharing

HGV standards
Through planning permission and Section 106 agreements, we recommend that Barnet Council comply with the MTS Direct Vision[19] strategy by 2020 and should:

- oblige all HGV operators to use vehicles designed to comply with the Direct Vision Standard and conform to the CLoCS (Cycle Logisitics and Community Safety) standard
- stipulate the routes lorries must take
- require that construction sites are suitable for vehicles fitted with safety features (e.g.: sideguards)
- insist that all drivers are given cycle awareness training

Speed cameras
Average speed cameras are needed on roads where reckless driving is a problem. Currently, Barnet Council[20] has very few speed cameras (one?) and focuses on enforcing school zigzags, banned turns, no-entry, bus gates and yellow box junctions.

D. Sustainable Travel

School Streets
Piloting School Streets is welcomed and 20 mph limits around schools are mentioned against Vision Zero.

Liveable Neighbourhoods
However, to make cycling to school and elsewhere a safer and realistic option for everyone, there needs to be a new objective to propose Liveable or Low Traffic Neighbourhoods in all residential areas, responsive to local demand, with low traffic, 20 mph limits and walking/cycling permeability, linked to the cycling network.

Behavioural change
There needs to be a comprehensive programme of publicity and health education towards children (pester power), parents and grandparents to promote a cultural and behavioural change towards active, sustainable travel.

Parking
Provision of large, free car parks at parks and leisure centres should be reviewed and incentives offered for not arriving by car, e.g. discounted entry.

E. Air Quality

Audits
Air quality audits should extend beyond schools to high streets and play areas.

EV pollution
Raise awareness that EVs also produce particulate pollution from brake and tyre wear and that they are not a sustainable form of transport.

Being idle
Raise awareness that pollution inside vehicles is relatively high and that allowing an engine to idle is illegal and polluting.

eBikes
Raise awareness of eBikes, which are far more efficient than EVs and produce minimal pollution.

[19] https://www.cyclinguk.org/article/why-do-cyclists-need-safer-lorries
[20] https://www.barnet.gov.uk/citizen-home/parking-roads-and-pavements/Parking/moving-traffic-contraventions.html

Cargo bikes
Cargo bikes[21], including electrically assisted versions, can replace some lorry, van and school run trips. Cycle infrastructure needs to enable and facilitate their use. Provide more funding and raise awareness of current subsidies[22]. Enable freight consolidation with "last mile" delivery by cargo bike. Can council services lead by example?

F. Public Transport Routes

Bike hubs
Establish bike hubs, with secure parking and services, at centres and at transport hubs.

Connect hubs into a strategic cycle network for the catchment area.

Space for cyclists
Provide protected/segregated road space for cyclists on orbital and radial routes.

G. Accessibility on Public Transport

Cycle access
Work with rail companies serving Barnet to provide easy access to platforms for wheeled bicycles. Steep channels at the sides of steps are not accessible.

Severance
Work with Network Rail and developers to ensure railway lines allow active travel from one side to another for disabled, pushchairs, bikes and elderly pedestrians.

There are a number of places where steep steps on bridges and tunnels should be replaced with accessible ramps (e.g. New Barnet where access to the new Leisure Centre is restricted by the steps to the railway tunnel).

H. Sustainable Development

Require new development areas to not only provide internal walking and cycling routes, but also to link them into the wider area.

Pressure to maximise value to the developer (and hence to Barnet via affordable housing, CIL funds etc.) can result in principles being watered down. It is vital that the main principles are adhered to and form a significant part of any upcoming planning applications as they arise.

[21] https://www.cyclinguk.org/article/cycling-guide/guide-cargo-bikes
[22] https://www.gov.uk/government/news/funding-boost-for-green-last-mile-delivery-bikes

Should the LIP include other major proposals or general areas of work (pages 62-74 & 80-81)

Items 1, 6, 7, 8: Strategic Cycle network for Barnet should have been defined already under previous LIPs – we need firmer proposals for delivery here and in Table 8 to 2041. Initial schemes should include protected or semi-protected on road space for cycling on main roads, not pushed onto indirect parallel routes, for:

- A1000 corridor improvements between Archway and High Barnet, taking in the remodelling of North Finchley.
- A598 corridor improvements between Childs Hill and North Finchley, taking in improvements in Golders Green and Finchley Central.

Item 15: EBikes should be included in dockless hire schemes and Lime have just launched in London[23]. These are particularly useful in hilly parts of outer London and for older and less able cyclists.

Items 19, 26, 27: Liveable / Low traffic Neighbourhood proposals or similar need to extend to all areas, not just development areas, to implement low traffic, enforced low speed, with limited through motor access, in all residential areas by 2041 or sooner.

Item 34: A cycle library / loan–purchase scheme[24], alongside cycle training, is needed to introduce people to different types of cycle, including cargo bikes and eBikes, but not without safe road routes to ride them on.

Item 45: Identify (including by consultation), review and fix many more dangerous junctions and other problems, such as severance, than those identified in items 18, 41, 43 and 44.

We would like the council to lobby DFT / GLA for:

- mobility scooters to be allowed to use cycle lanes and tracks
- Turning the Corner - British Cycling campaign[25]
- powers to enforce speed limits
- increased powers to stop idling engines
- more policing in Barnet of speeding and close passes[26]
- promote 'Dutch Reach' in driving tests

[23] https://www.standard.co.uk/news/london/dockless-electric-bike-scheme-arrives-in-london-a4010041.html
[24] https://lcc.org.uk/pages/cycle-loan-scheme
[25] https://www.britishcycling.org.uk/campaigning/article/20161220-campaigning-Turning-the-Corner-author-explains-campaign-s-aims-0
[26] https://barnetlcc.org/stay-wider-of-the-rider/

Should any other targets be identified (pages 103-110)

All targets should cover short term (current 3 years), medium term (~2030) and long term (2041), with regular (annual) reporting.

Individual modal targets
Separate individual targets are needed for cycling in order to justify investment and measure results. The overall target of 59% by 2021 and 72% of trips by 2041 to be by walking, cycling or public transport is too general to guide the investment in physical infrastructure and cultural change required for achieving it.

We notice that the previous LIP cycling target of 4.3% of trips by 2026 has been omitted. Targets for 2021, 2030 and 2041 should include:

- overall mode share of cycling
- percentage of pupil journeys to school cycled

We suggest the 72% (lower than the 75% MTS target for outer London) should not count leisure trips unless these directly replace motorised trips.

Network proximity
The plan needs to include projected targets to show how the percentage of people within 400m of a cycle network can increase from 4% in 2021 to 70% by 2041. To meet that target smoothly it needs to be 10% by 2021 rather than 4%.

Annual targets for Km of new and upgraded cycle routes to achieve this are needed.

Neighbourhoods
Targets needed for percentage of population living in Liveable Neighbourhoods & Low Traffic Neighbourhoods.

Targets needed for % of borough roads with an effective 20 mph speed limit.

School Streets
Solid targets for X schools in next 3 years, by 2030 and by 2041.

Cycle parking
As well as the number of spaces, the target should be the percentage of people with somewhere to keep their cycle securely, including at or near home, on street and at transport hubs, to achieve 100% by 2041.

Vision Zero
Because walking and cycling should increase, KSI numbers should be compared to miles or numbers of trips to show how the rate is changing.

The plan should include projected KSI targets for 2041 (Table 13 goes to 2030).

Crossings
A target is needed for the percentage of required pedestrian / cycle crossings on the strategic walking / cycling network that are provided, rather than just the number of crossings.

Percentage of signalised crossings with max. 60 second delay and immediate activation when not used recently.

Traffic reduction targets
A reduction in traffic of about 5% seems a low target. With a reduction in modal share from 45% to 28% for motor traffic, the number of trips would have to increase by 60% to have the same volume of traffic by 2041.

Expenditure per mode targets
Plans need to be costed and a target is needed for the percentage of the transport budget spent on cycling annually.

Training
Rather than focusing targets on numbers of people trained (pedestrian skills, cycling skills, etc.), targets should be set for the percentage of (a) adults and (b) children requiring training who have received trained.

Healthy Streets Quality targets
Targets are needed for the degree of improvement required in Healthy Streets score for a scheme to be approved.

Consultation responses (except TfL & Barnet Cycling Campaign)

Respondent	Response / summary of response
Individual #1 Resident (East Finchley)	Firstly I would like to welcome and support the growing importance and prominence that is given to the promotion of walking and footpaths within the document. I think this is a good step forward. The draft delivery plan contains a number of ideas which support walking in the borough including items 1, 11,12, and 14 which are all extremely valuable. The definition of a strategic walking and cycling network is innovative and helpful and can be used as the basis on which to increase walking as a transport mode when combined with the other ideas around footpath improvements, the development of footpath guides, walking apps, and promoting linkages and improvements in the footpath network to connect schools, places of work and assembly, town centres, tube stations and bus stops.
	One addition that I would like to see included in the final LIP submission to the Mayor is the inclusion and production of a **"Rights of Way Improvement Plan"** Such a document, which is a statutory requirement, would be a productive way to assist in the delivery of the items included in the Delivery Plan and would set the strategic direction for improving footpath and walking conditions in the Borough over the longer term. A number of boroughs such as Hillingdon, have already produced such documents. It is good to see the Borough taking walking as a transport mode seriously both for health, work and leisure/recreation purposes.
London Borough of Enfield - officer response	Please note that having reviewed Barnet's draft LIP (at officer level), we welcome the London Borough of Barnet's plans to improve air quality, reducing car dependency, and enabling more Londoners to walk and cycle. As a neighbouring authority in outer London, we accept this presents challenges as we share some similar concerns in implementing the Mayor's Transport Strategy in the London Borough of Enfield
	We support proposals for joint working to try to address shared challenges such as pollution concerns on roads that link the boroughs, specifically the North Circular Road, and look forward to building on the good relationships that we already have in place.
20's Plenty for Us	We would like to thank you for the opportunity to respond to your LIP3 draft Local Implementation Plan. These comments come from the group 20's Plenty for Us and focus broadly on the proposed strategies around Road Danger Reduction and more specifically the Vision Zero policies as set out in the Borough

20’s Plenty for Us (cont)	Transport Objectives C. To seek to achieve the Vision Zero ambition of zero Killed or Seriously Injured Road Traffic Casualties by 2041. While there is an understanding that, as you outline in the Introduction, Barnet has specific issues around car dependence and the difficulties of increasing mode share for the “active modes” of transport, the focus of the strategy on just three elements of a Vision Zero programme of a) Education, b) some improvements in junctions and c) a very piecemeal approach to lower speed limits feels like a (wholly) inadequate response to the policy framework set out by TfL in its Vision Zero Action Plan (VZAP) and fails to embrace it in any meaningful way. The lack of analysis of casualties in the borough in the plan around Outcome 2 is extremely regrettable with no consideration being given to the measures that will be credible and effective in relation to the collisions that occur on A roads that pass through the town centres. At the very least a map of casualty locations (by borough roads, TLRN and HA) would have been helpful. It is also regrettable that the extent of the road danger to pedestrians is not acknowledged with Barnet having the fourth highest number of serious and fatal pedestrian casualties (61) in 2017.
	The Vision Zero Action Plan from TfL has a very clear focus on how road casualties can be reduced in relation to Safe speeds, Safe vehicles, Safe streets and Safe behaviours. Safe speeds in particular is a focus on the Vision Zero Action Plan but there is little mention of this in this document. We understand that Barnet has been sceptical about the role of lower speed limits to date but we would point out that the Vision Zero Action Plan identifies speed as playing a part in 37% of all serious and fatal casualties and there is almost nothing in the strategy that relates to addressing vehicle speed. We would argue that, in Barnet not every borough managed road is appropriate for a 20mph speed limit BUT a) many communities in the borough have demanded lower speeds over many years and b) many residential roads and street and streets where people and vehicle mix are appropriate for lower speeds limits. While the introduction of lower speeds limits in themselves will only make a small difference to average speeds, they do make a difference AND allow other things to occur to increase compliance with the lower speed limits. These include elements from all of the headings set out in the Vision Zero Action Plan as follows:
	1. Safe Streets. In those areas where lower speed limits are introduced, streets can then be designed for lower vehicle speeds. With main roads this will be along the

20's Plenty for Us (cont)	lines of the Healthy Streets guidance and could include: the removal of centre white lines when resurfacing occurs, narrowing and raising the entrances to side streets to require drivers and riders to manoeuvre more slowly and other devices to increase compliance with (lower) speed limits. For residential roads this may involve the use of Low Traffic Neighbourhoods to reduce road danger at source (https://londonlivingstreets.com/low-traffic-neighbourhoods-two-new-guides/) and reduce the impact that fast moving through traffic has on residential areas.
	2. Safe vehicles. The plan has nothing to say about this. There is, however, a wide range of existing and emerging initiatives that the Council can implement to reduce the danger that vehicle pose. One of the most significant of the emerging technologies relates to the uptake of intelligent speed adaptation (ISA) which following successful trials by TfL in 2015 is being adopted on all new buses from this year onwards. Indeed by 2022 all London buses will be fitted with mandatory ISA (with the roll out of ibus2). As this technology offers such benefits to increasing compliance with (lower) speed limits we would suggest that Barnet incorporates some/all of the following into its policies for Safe Vehicles: • Adopting ISA in its own fleet procurement practices as part of its renewal programme; • Ensuring ISA is a standard requirement for any service procured by the Council with a fleet requirement; • Promoting the installation of ISA in taxis and private hire vehicles and encouraging TfL to make ISA a requirement for new taxis and private hire licensing; • Encouraging the uptake of ISA in other fleets, such as hauliers, construction firms and coach operators; • Working with the insurance industry and vehicle manufacturers to promote and encourage the use of ISA in private vehicles; • Include ISA on any car club vehicles that aim to operate from a base within the borough.
	Safe Behaviours. The issue of enforcement of traffic laws does not appear in the strategy even through it is a significant element of the VZAP. Although police resources are stretched, the police have committed to a significant investment in improved enforcement as part

20's Plenty for Us (cont)	of the Vision Zero Action Plan and there are other opportunities afforded by proposals for an enhanced Safety Camera programme – again there are many borough managed roads in Barnet with high numbers of casualties which could be candidate locations for higher levels of enforcement. Also absent is any mention of Community Roadwatch which puts the monitoring of vehicle speeds into the hands of the community in terms of the nominations for locations with this work undertaken in conjunction with the Metropolitan Police.
	We understand that Barnet is in a difficult position in relation to a successful approach to Vision Zero for a number of factors. The plans outlined in this strategy are, however, simply not credible in relation to the task ahead in relation to the issues that pedestrians and the communities in the borough face in relation to traffic domination and road danger and casualties. We would urge you to address these issues face on and, at the very least, embrace some of the approaches set out in the VZAP in a more wholehearted way.
Ramblers Association	I am responding on behalf of the Ramblers to the consultation on the draft Local Improvement Plan. We welcome the emphasis that is placed on walking in the Draft Delivery Plan on pages 62 to 64, in paragraphs 1, 11, 12 and 14. The encouragement of walking both for leisure and commuting to work is central to our aims.
	I see from the supporting commentary for the annual programme on page 89, that item 1 **"Define borough-wide strategic walking & cycling network and improvements needed"** is to be delivered or part delivered during 2019/20. This borough is lucky to have a large network of historical routes for pedestrians that supplement the road network, along with other urban alleys. Walking on a footway that is **not** beside a road is a pleasanter experience, reducing exposure to pollution caused by traffic fumes and the risk of accidents. This network of urban routes should therefore be central in defining a borough-wide walking network.
	It would be a great help if the Borough had all the urban footpaths recorded on the Definitive Map of Rights of Way (as has been required since the Wildlife & Countryside Act 1981) so that the entire network of routes available to pedestrians is clearly recorded and protected. As a part of this work, the Borough could also take the opportunity to prepare a Rights of Way Improvement Plan (a statutory requirement under section 60 of the CROW Act 2000).

Ramblers Association (cont)	I therefore suggest that an additional item is added to the Delivery Plan to "Record footpaths not associated with roads as Rights of Way on the Definitive Map as part of a Rights of Way Improvement Plan for Barnet
	Ramblers volunteers would welcome the opportunity to help in identifying the walking routes and which of them may be suitable for shared use with cyclists
Barnet Society	We understand the London Borough of Barnet has to prepare a Local Implementation Plan (LIP) giving their proposals to implement the Mayor's Transport Strategy. Barnet's draft LIP sets out its long term goals and transport objectives for the next 20 years. Included in this draft LIP are several items in respect of walking and footpaths and it is this area the Barnet Society welcomes the opportunity to comment.
	The Barnet Society Supports the following parts of LIP3 We are very concerned that footpaths could be under threat if they are not identified on the Definitive Map of Rights of Way by 1st January 2026 and therefore we strongly support those elements on the plan that enhance walking provision and establishing the footpaths. These are described in the Delivery Plan Table 5 (pages 61-73) which support walking including: • Define borough-wide strategic walking and cycling network and improvements needed, including aspirations for networks serving Copthall, West Hendon and Dollis Valley. • Develop walkable neighbourhood plans for areas of the borough exploring links between home and work, schools, transport nodes, leisure activities and identifying small interventions that will make walking a more attractive option in the future. • Targeted improvements to public footpaths and strategic walks such as London Loop, Capital Ring, Dollis Valley Walk and PymmesTrail. • Develop/Refresh walking publications and make available via an app, electronically or on paper: 1. Historic Walking Guide 2. Circular Walks and linking routes from stations to London Loop, Capital Ring, Dollis Valley Walk and Pymmes Trail and others. 3. Prepare and publish footpath guides based on 20 minute walk times from each of the Borough rail and underground stations.
	Suggested additions to the LIP3

Barnet Society (cont)	We also ask that you include in the Delivery Plan a "Rights of Way Improvement Plan" (ROWIP). This is a statutory requirement (Countryside and Rights of Way Act 2000 section 60 and should be funded through the LIP. It should be a commitment to update the Definitive Map of Rights of Way to include urban as well as rural footpaths. Urban footpaths have to be included on the Definitive Map following the Wildlife & Countryside Act 1981.
	The Barnet Society thinks the production of a Rights of Way Improvement Plan would provide a useful tool and assist the Council to deliver the aims identified above in the Delivery Plan. When the existing footpaths are clearly identified it will show the historic network of existing paths that the Council already has and on which it will be possible to build a modern walking network containing links to new transport hubs, places of work, schools, places of assembly etc and thus help achieve the overall goal of 80% of trips being on foot, by cycle or public transport by 2041.
Individual #2 Resident (High Barnet)	The objectives are brave, but the proposed solutions are weak. There seem to be several principles that would be useful: 1. To encourage any shift in travel modality, the alternative has to be easy and safe. 2. If people are to walk, cycle or use public transport any gap or change in perceived or real safety will render the whole project far less effective. So to recap: easy and safe - and easy and safe in EVERY part of the route.
	I take your point about the diffusion of the area meaning the car will remain in use more than in central London - so the objective has to be to get those who are close enough, and willing, to walk or cycle. This means that the roads will flow better for those who simply have to drive - and perhaps an integration with public transport might bring those numbers down too.
	So, for public transport, I agree with your analysis that we need more east west orbital routes. I don't know enough about procurement and planning to give any advice, but braver aspirations would be more powerful.
	For walking, always think of school children and the aged. My wife does walk our children to school and she has to cross the A1000 at Hadley Green where there is no zebra crossing. Then she has to cross from the green to the Church, again with no crossing. As our

Individual #2 Resident (High Barnet) cont…	children grow, there is no way we can let them cross on their own. So the principle is, if you're making the school routes more palatable for walkers, make sure you address the whole problem. Any gap will kill the project.
	For cycling, I often cycle into London and around the borough. The Dollis Valley cyclepath way is pleasant, and I'm pleased its there. But there are gaps in it all over the place, and if I want to go a different way the roads are murderous. And that's literal. I've been cycling for over 45 years, I follow the rules, always have lights on and yet have been knocked off, attacked, chased. This is unacceptable and has nothing to do with how I cycle, and everything to do with the public perception of road ownership and entitlement. It's also true that cycling along the Dollis Valley adds around 9 to 10 minutes to my journey. I work in N12 and cycle from EN5. Going down the A1000 is fast and direct, but unpleasant and dangerous. Dollis Valley is more pleasant and safer, but my trip takes me 24 minutes against 15 on the A1000. If you look at the cycling provision in the borough it is disgraceful. Patchy, incomplete, badly maintained. If you saw a road network like that you'd be horrified by it's fragmentation. Walking routes are trickier to analyse as they follow the roads, but I think the same analysis would come from them, a transport system that is centred on the car.
	That's the paradigm shift that needs to be reached. We all need cars, and some need to use them more than others. But many people would happily walk and cycle more if it felt less like a third-rate choice, less like being left to skirt round the edge of a vehicle based road system. I hope you can make some changes to make a real difference to the provisions for walking and cycling in the borough, but they must have higher aspirations to make anything like the difference you're aiming for.
Individual #3 (address unspecified)	I think more could be done in the LIP for safer cycling. 1) In particular more safe spacing is needed on the roads not footways. Cyclists are forced to ride near the curb where roads are often in worst repair, potholes and large cracks in the highway. 2)More Quieter Neighbourhoods please. Enfield has 36.

Individual #3 (cont)	3) Park routes are fine in LIP but lack ambition. 4) Healthy Streets improvements for buses should also cater for cycling 5) More Advanced Stop Lines (ASL) would be beneficial for cyclists and safer 6) Restrict car speeds to 20mph for all residential areas
Individual #4 Resident (High Barnet)	As someone who's been a keen walker since an early age, I've been looking at the draft LIP, dated October 2018, from that particular perspective, and I'm very glad to see the Council giving so much attention to walking, and note that the words walk(s)/walking appear 38 times in it. However when the document is examined in detail it reveals what appears to me to be a significant lack of balance - in the LIP "walking" is seen mainly as a functional means of getting from A to B using streets - which is great as far as it goes and is, of course, to be encouraged. But that's only a part of the story, and the LIP is very weak when it comes to off-road footpaths and walking as a leisure activity. The evidence for this assertion lies not only in the sparsity and, frankly, the low quality of what the document does say, but also in what it doesn't say about walking, most particularly about rights of way, which don't rate even a passing mention, which I find very odd
	Whilst the words street(s)/on-street/off-street appear 89 times, the words path(s)/footpath(s) appear only 4 times, (and that's in a 110 page document! Need I really say any more ...?) The draft LIP doesn't even pay lip service (no pun intended) to walking off-road, along not only the footpaths and bridleways in the greener parts of the Borough, but also along the very many urban alleys and footpaths. Whilst it does mention the long distance routes such as the London Loop, it completely misses out this huge network of local footpaths which in total vastly exceed the lengths of all the long distance route through the Borough combined. The use of all these footpaths should feature much more prominently in the LIP, to complement the references to the Joint Health and Wellbeing Strategy (Page 21) as well as the Council's ambition "to make ... walking more attractive for leisure, health and short trips" (Page 20), and their use is something to be encouraged as both a healthy and enjoyable exercise in its own right
	At Page 89, the draft reads: "The following proposals are expected to be delivered or part delivered

Individual #4 Resident (High Barnet) cont…	during 2019/20 ... Define borough-wide strategic walking ... network and improvements needed..." Taken in the context of the rest of the document, this "strategic walking network" would appear to have been conceived as something which sits alongside the rail, underground, and bus networks i.e. directed principally at the means of getting around the Borough. There is, of course, absolutely nothing wrong in that as far as it goes: the problem is that the proposed strategy doesn't seem to relate to, or to include, a strategic network of footpaths. [If I'm misreading this part of the draft, and the intention is, indeed, to include footpaths, this should be explicitly spelt out.]
	The Borough does already have a readily-available borough-wide walking network - it's the Definitive Map and Statement (DMS), which is the Council's statutory record of all the rights of way on foot (and on horseback, though this doesn't feature that much in Barnet), and this covers many of the local footpaths referred to above, but it has been completely ignored in the LIP. Why? The DMS should be the starting point for the development of the borough-wide strategic walking network as envisaged in the LIP, and furthermore any "strategic" network such as this will need to link in to those of neighbouring authorities, and there appears to be nothing whatsoever in the document to reflect that, either.
	Right now Barnet Council's DMS is a hugely undervalued resource, and the key to exploiting that resource is for Re to do what would appear to be included in its contract with the Council, and put a copy on the Internet, and this is something which should be funded though the LIP (if no funds are otherwise available). Having online access to this would play a significant rôle in encouraging more people to walk more, which is avowedly what the LIP envisages the Council doing.
	Furthermore, the DMS would be even better still if the Council were to pull its finger out and meet its statutory obligation under Section 53 of the Wildlife and Countryside Act 1981 to keep the DMS under continuous review. (There's plenty of evidence of the Council's failure to meet this statutory obligation, which has happened under all administrations since this provision came into effect in 1983.) Directly related to this point is the Council's failure to meet another of its statutory

Individual #4 Resident (High Barnet) cont …	obligations, this one under the Countryside and Rights of Way Act 2000 to draw up a Rights of Way Improvement Plan, which should have first been prepared by November, 2005 at the very latest, and should by now already have had its first review (the Act requires the Plan to be reviewed no more than 10 years after its initial preparation, i.e. by November 2015 at the very latest). Given the Council's long term failure to meet even its statutory obligations, and the fact that rights of way don't receive even a single mention in the LIP, it's very difficult to take at all seriously the very little that the LIP does say about footpaths and walking as a healthy leisure activity, and the Council's commitment to this.
	At Page 64, the draft LIP reads "Develop / refresh walking publications and make available via an app, electronically and in paper format: • Historic walking guide • Circular walks and linking routes from stations to London Loop, Capital Ring, Dollis Valley Walk, Pymmes Trail etc • Prepare and publish footpath guides based on 20-minute walk times from each of the Boroughs Rail and underground stations" The idea of a historic walking guide is to be welcomed, though there are some issue with the other two bullet points.
	Firstly, if the Council wants to encourage more people to make more use of these circular routes and footpaths, as the LIP explicitly states that it does, it also needs to explain how to reach them by bus as well as by train and underground, the stations of which are far too widely separated to serve as the only means of getting there and back by public transport.
	Secondly, I would guess that the majority of residents of the Borough would need to walk more than 20 minutes in order to get to and from a rail or underground station in the first place (i.e. 10 minutes each way). To suggest that they will then choose to make a journey by rail or underground for the sole purpose of a walk of as little as 20 minutes at the other end strikes me as ludicrous in the extreme.
	You can't be serious! When it comes to rights of way, footpaths and walking for leisure, the Council is hugely under-ambitious as far as the LIP is concerned, and also as far as the funding

Individual #4 Resident (High Barnet) cont …	which it could potentially bring in, and none of what the draft does say seems to have been thought through by anybody who has any idea of what they are talking about, or can even be bothered to get the names of the long-distance paths right - it should be the “Dollis Valley Green**W**~~w~~alk” and the “Pymmes Brook Trail”. And one wonders whether the people who wrote this stuff have ever even been for a walk in the Borough ...?
Individual #5 (address unspecified)	Document arguing to have “Transport for London not fund the replacement of two bridges over Dollis Brook in Barnet’s Local Implementation Plan (LIP)”, and for Barnet to “not replace these bridges, but rather to spend some funds on maintenance”. This expresses the concern that pedestrian only paths are being converted to shared pedestrian and cycle paths without consideration of pedestrians or the areas they pass through.
London Borough of Brent	Brent Council welcomes the objectives of the LIP3 and are pleased that the objectives align with the identified key transport issues for our borough, in particular: i. Support for improved orbital transport links across the borough and between outer London centres to provide wider access to employment opportunities and to enable journeys currently made by car to be made by sustainable forms of transport; and ii. Improve public transport accessibility, support the expansion of bus and rail services and, support increased bus priority to deliver more reliable, faster and more accessible public transport services; iii. Improvements along the A5 being the boundary road to our two boroughs. This reflects the significance of an improved public transport offer to encourage more residents to travel more sustainably more often in the context of Outer London and aligns with Brent Council’s identified priorities and objectives of further regeneration on both sides of the A5. The Council, therefore, whilst encouraged to see reference to improvements along the A5 borough boundary road. We would support the inclusion of the reference of increased partnership working along the A5. This strategic road needs to have joined up thinking to ensure both Barnet and Brent get the maximum benefits from initiatives and schemes proposed along it.

London Borough of Brent (cont)…	Brent Council would like to see reference to the A5 corridor study which we have been speaking with TfL and Barnet officers. Brent Council notes that whilst the Brent Cross Rail Freight Facility will reduce lorry movements across London, the acknowledgement by Barnet Council to the increase in localised lorry movements without 2 reference to measures to mitigate them is a concern and needs to be addressed. Mitigation measures need to be included in the delivery plan for the rail freight facility. Brent Council would welcome the opportunity to discuss these matters further, and would also welcome updates on the progression of the Barnet Council's Local Implementation Plan and accompanying delivery plan for both short to medium and long-term interventions.

Report

3rd December 2018

TEMPLE
LEADERS IN ENVIRONMENT, PLANNING & SUSTAINABILITY.

In association with steer

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

Draft

Document version control

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Contents

1.0 Non-Technical Summary i
1.1 Introduction i
1.2 Summary of the LIP i
1.3 Approach to the SEA ii
1.4 Outcomes of the SEA ii
1.5 Monitoring iii
1.6 Next Steps iii
2.0 Introduction 5
2.1 About the Environmental Report 5
2.2 Overview of the Local Implementation Plan (LIP) 5
2.3 Compliance with the SEA Regulations 6
2.4 Report Structure 7
3.0 Context and Scope of the LIP 8
3.1 Introduction 8
3.2 Policy Context 8
3.3 Long-Term Transport Strategy for Barnet 9
3.4 Summary of the LIP 9
3.5 Defining the assessment area 13
3.6 Timeframe for the Plan 14
3.7 Other policies, Plans, Programmes and Sustainability Objectives 14
4.0 Baseline Environmental Conditions 17
4.1 Air Quality 17
4.2 Attractive neighbourhoods 17
4.3 Climate change mitigation and adaptation 21
4.4 Energy use and supply 21
4.5 Fairness and inclusivity 21
4.6 Flood risk 22
4.7 Geology and soils 23
4.8 Historic Environment 24
4.9 Materials and waste 25
4.10 Mental and physical wellbeing 25

4.11 Natural Capital and Natural Environment 25
4.12 Noise and vibration 26
4.13 Safety and security 27
4.14 Water resources and quality 27
5.0 SEA Objectives and Framework 28
5.1 Objectives 28
5.2 Alternatives 29
5.3 Habitats Regulations Assessment 29
5.4 SEA Framework Matrices 29
5.5 Monitoring 97
6.0 Next Steps 98
6.1 Development of the LIP 98
6.2 Remaining Stages in the SEA Process 98

1.0 Non-Technical Summary

1.1 Introduction

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

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

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

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

1.2 Summary of the LIP

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

A. To encourage healthier lifestyles through promoting physical activity, enabling supporting and promoting active travel and improving public transport links to facilities;

B. To applying 'Healthy Streets' principles to deliver a range of improvements;

C. To seek to achieve the Visions Zero ambition of zero 'Killed or Seriously Injured' Road Traffic Casualties by 2041;

D. To promote, enable and support more sustainable travel to school, workplaces and other destinations;

E. To improve air quality in Barnet and protect residents and visitors, especially children from exposure to pollution;

F. To secure new and revised public transport routes to support the growth of the borough, particularly addressing the challenges presented by orbital travel and travel to neighbouring areas and orbital connectivity across the borough; and

G. Facilitate the introduction of step-free facilities at stations and accessible bus stops to help make public transport accessible for all passengers, directly or through support of TfL and

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

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

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

1.3 Approach to the SEA

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

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

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

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

1.4 Outcomes of the SEA

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

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

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

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

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

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

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

1.5 Monitoring

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

1.6 Next Steps

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

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

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

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

2.0 Introduction

2.1 About the Environmental Report

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

To meet the requirements of the Environmental Assessment of Plans and Programmes Regulations 2004, Local authorities are required to carry out Strategic Environmental Assessment (SEA) for policies, plans and programmes across various areas, including transport[1]. Government guidance on transport plans stresses the importance of the SEA being an integral part of developing and delivering a transport strategy. The statutory environmental agencies (i.e. the Environment Agency, Natural England and Historic England) must be involved throughout the development and monitoring of a plan.

A Scoping Report for the SEA[2] was forwarded to the consultation bodies by the London Borough of Barnet earlier this year. This report takes account of the comments received from these bodies on the Scoping Report and updates and extends the baseline environmental information on which the SEA is based.

2.2 Overview of the Local Implementation Plan (LIP)

The LIP is a statutory document, prepared under Section 145 of the Greater London Authority Act 1999. This Act requires each of London's 33 local authorities to prepare a LIP containing proposals for the implementation of the Mayor's Transport Strategy[3] in their area.

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

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

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

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

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

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

- Green: London's streets will be clean and green.

- **A good public transport experience:**
  - Connected: The public transport network will meet the needs of a growing London.
  - Accessible: Public transport will be safe, affordable and accessible to all.
  - Quality: Journeys by public transport will be pleasant, fast and reliable.

- **New homes and jobs:**
  - Good Growth: Active, efficient and sustainable travel will be the best option in new developments.
  - Unlocking: Transport investment will unlock the delivery of new homes and jobs.

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

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

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

2.3 Compliance with the SEA Regulations

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

Table 2.1: SEA Requirements[4] and where covered in the Environmental Report

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

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

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

2.4 Report Structure

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

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

3.0 Context and Scope of the LIP

3.1 Introduction

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

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

3.2 Policy Context

3.2.1 The Mayor's Transport Strategy

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

3.2.2 The Sub Regional Transport Plan (North)

This Plan[5] is part of an ongoing programme, enabling Transport for London (TfL) to work closely with the London Boroughs in North London to address strategic issues, progress medium-longer term priorities and respond to changing circumstances. The Plan translates the MTS goals, challenges and outcomes at a sub-regional level. While these needed to be considered across London, and addressed locally through LIPs, there are some matters which benefit from having a concerted effort at a sub-regional level. Challenges such as improving air quality, reducing CO_2 emissions and achieving targets for increased cycling and walking are better dealt with at sub-regional level across London.

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

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

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

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

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

3.3 Long-Term Transport Strategy for Barnet

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

3.4 Summary of the LIP

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

- **Encouraging healthier lifestyles:** Promoting physical activity, active travel and public transport. Through this, the strategic network will better overcome barriers to walking and cycling. This will include providing high quality cycle routes suitable for cyclists of all abilities, improved public transport connections to leisure facilities.

- **Applying 'Healthy Streets'[6] principles to deliver a range of improvements**: Delivering new liveable neighbourhoods in Colindale and Brent Cross, in Town Centres including town centre Transport Hubs, and in development areas in line with Town Centre Strategies and Development Frameworks. Other improvements will include proposals for main road corridors and major junctions, together with non-town centre transport hubs and stations.

- **Achieve zero 'Killed or Seriously Injured' Road Traffic Casualties by 2041:** Promoting safer behaviours and reduce road danger through education, training and publicity, programmes, road safety schemes at accident 'hot-spots, 20mph areas around schools and other areas where pedestrian activity is high.

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

- **Support more sustainable travel to school, workplaces and other destinations:** Increasing the proportion of schools developing travel plans and achieving STARS accreditation[7], especially at higher levels, delivering educational programmes and engineering schemes to support school travel plans including, piloting school street proposals. Barnet Council will also require travel plans for new developments and work with other organisations to ensure these are robust. The relocation of Barnet Council to new offices also will provide an opportunity to reduce car-based travel and pilot new approaches as an exemplar scheme. The Council will also continually review parking provision on-street and in borough-controlled car parks, and introduce, extend and review of CPZs, review town centre demand and parking provision, issue permits based on emissions levels, make provision for car clubs and electric vehicle charging and apply parking controls around car-free and car-lite development.

- **Improve air quality in Barnet and reduce exposure to pollution, especially for children:** Carry out air quality audits on remaining schools in areas of poor air quality and implement measures identified. The Council will also work with adjacent boroughs to press for and develop proposals for extension and tightening of the Ultra-Low Emission Zone (ULEZ)[8]. Open access electric vehicle charge points (e.g. in streetlamp columns) will be provided and the Council will work with town teams and other community groups to organise car-free days and events.

- **New and revised public transport routes:** These will support the growth of the borough, particularly to improve orbital travel and travel to neighbouring areas. Schemes will include a new Brent Cross West Station, the West London Orbital Line from Brent Cross and Crossrail 2 to New Southgate. The Council will work with TfL on new bus routes to serve new development and less accessible locations, including orbital express bus and demand responsive services. Bus Priority improvements will focus on development areas, orbital movement and generating higher passenger numbers. The Council also will explore potential for coach facilities in conjunction with the proposals at Brent Cross West/Brent Cross south.

- **Introduce step-free facilities at stations and accessible bus stops:** To make public transport more accessible for all passengers, both directly and in partnership with TfL, National Rail and private developers. Proposals will include Mill Hill East, Burnt Oak, Colindale and Brent Cross northern line stations, the new Brent Cross West station and Mill Hill Broadway station. The Council also will increase the percentage of accessible bus stops in Barnet.

- **Secure significant regeneration and growth in Barnet's opportunity areas:** Sustainable development principles will ensure majority of new trips are by public transport, on foot and by cycle, and reliance on the private car will be reduced. The Council will support the Brent Cross Rail Freight Facility and a construction consolidation centre for the Brent Cross development. Borough-wide requirements and best practice for new development, in particular in the Green Infrastructure SPD and Sustainable Design and Construction SPD will incorporate guidance on climate change resilience and adaptation, green transport and access, air quality, noise and sustainable urban drainage.

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

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

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

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

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

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

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

- Borough cycling programme.

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

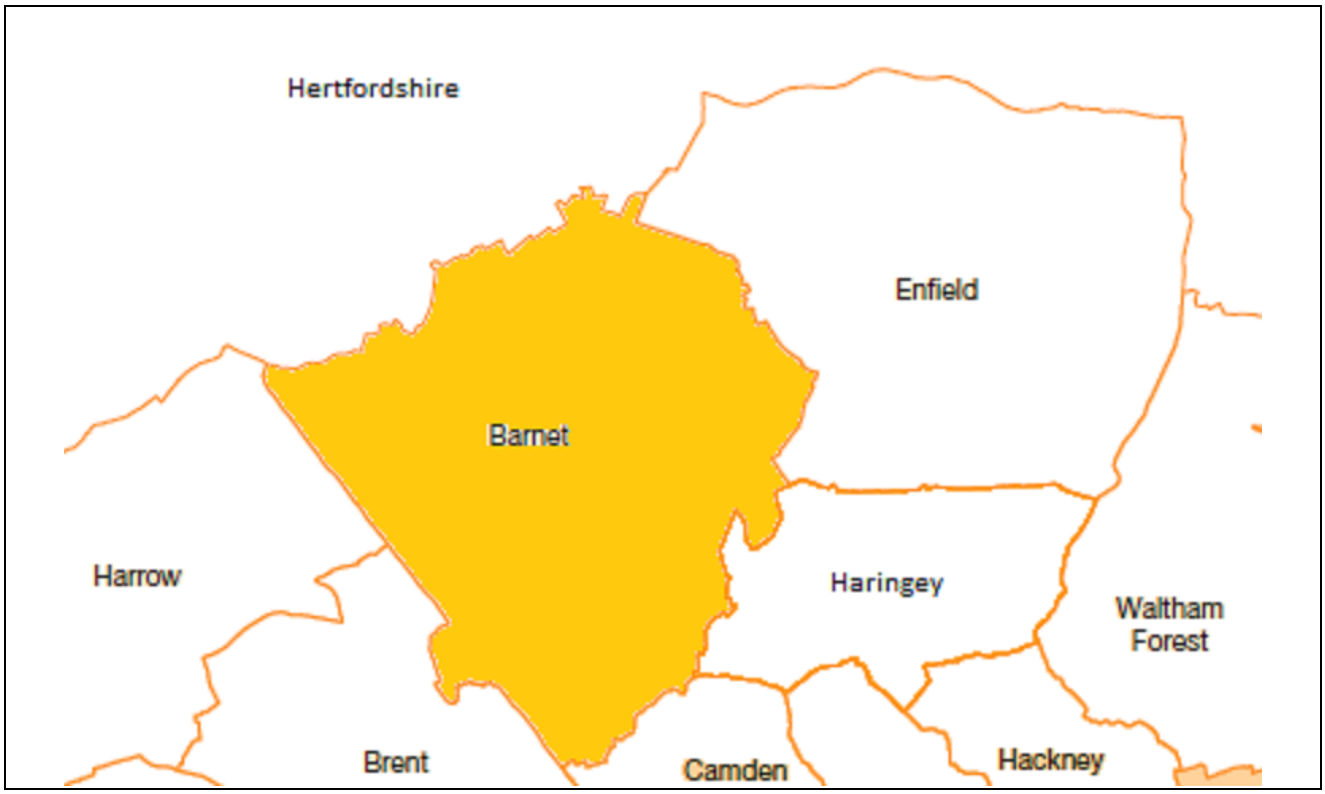
- Definition of borough-wide strategic walking & cycling network and improvements needed;
- Dollis Valley cycle route bridge widening (x2);
- Colindale Parks cycle routes including Montrose Avenue crossing;
- Cycle/pedestrian route lighting improvements at Pursley Road-Copthall and Sunny Hill Park;
-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

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

3.5 Defining the assessment area

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

Figure 3.1: London Borough of Barnet area and adjoining boroughs



3.6 Timeframe for the Plan

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

3.7 Other policies, Plans, Programmes and Sustainability Objectives

3.7.1 National and Regional Policies

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

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

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

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

3.7.2 London Borough of Barnet Policies

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

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

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

4.0 Baseline Environmental Conditions

4.1 Air Quality

In common with other local authorities, air quality in Barnet is monitored at several specific locations and this information is also used to model the quality of air across the borough. The Council's latest air quality Annual Status Report indicates the whole of the borough of Barnet was designated an Air Quality Management Area (AQMA) for the nitrogen dioxide (NO_2) annual mean objective and PM_{10} particulate daily mean objective since 2001. In 2010 this was extended to include the one-hour mean for NO_2 due to elevated concentrations at Golders Green Bus Station and at High Street locations across the borough.

Air quality monitoring indicates a steady and consistent reduction in NO_2 concentrations which will be further aided by LIP implementation. Large areas of the borough away from major roads enjoy air which is below the NO_2 annual mean objective. Measured concentrations of PM_{10} do not exceed national air quality objectives. However, some are locations, including the major junctions in the borough, have been predicted to exceed the objectives due to high traffic flows, especially during peak times and at junctions where there are many stationary vehicles.

The dominant source of NO_2 and PM_{10} emissions in Barnet is road transport with a variety of other sources contributing emissions. According to the latest London Atmospheric Emissions Inventory (LAEI) 2013, compiled by the GLA, 64% of oxides of nitrogen (NO_x) emissions in Barnet come from road transport and 19% from domestic or commercial gas use. For PM_{10} emissions, 52% come from road transport.

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

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

Pollutant	2013	2021	2041
Oxides of Nitrogen (NO_x)	1,300	560	80
Particulates (PM_{10})	127	109	83
Particulates ($PM_{2.5}$)	73	53	40

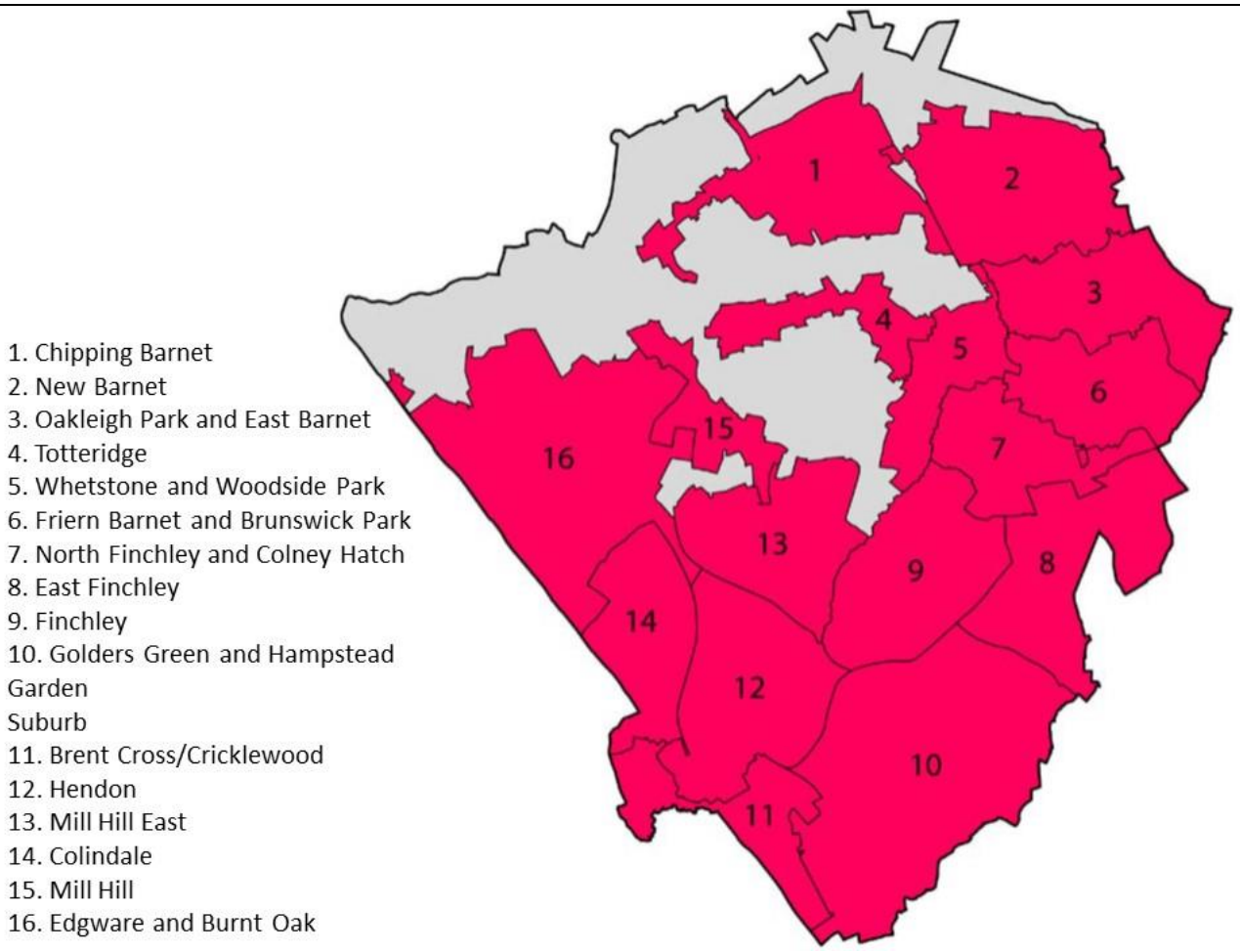
Although detailed modelling would be required to confirm this, it is likely that these reductions would allow the UK air quality objectives to be met across the borough. Also, without this modelling, it is not possible to disaggregate how much of these reductions are attributable to technological changes,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

4.2 Attractive neighbourhoods

16 Character Areas have been identified in Barnet[9], as illustrated in **Figure 4.1** on the following page and can be characterised as follows:

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

Figure 4.1: Character Areas in London Borough of Barnet



Source: Barnet Characterisation Study

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

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

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

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

- **Brent Cross/Cricklewood:** This area largely comprises industrial and commercial uses, the Brent Cross Shopping Centre, and open space. There are some smaller areas of semi-detached or terraced houses, laid out on regular streets and set back behind front gardens, many given over to parking.

- **Hendon:** The street layout across this area is a rectilinear grid, although some streets terminate in culs-de-sac, especially to the west of Edgware Road. While the residential streets are typically terraced, there are a few high-rise residential blocks. There also are larger buildings for education and commerce in the central part of the area, a large area of open space at Sunnyhill Park in the northwest, and Hendon Park in the south. The character area includes three retail high streets at Brent Street / Church Road, Watford Way / Vivian Avenue, and West Hendon Broadway. The area also includes several residential estates. Buildings generally two storeys, and some taller buildings up to five storeys at the centre of the area.

- **Mill Hill East:** This area includes large areas of open space, including the cemetery and golf course, the former barracks site south of Mill Hill East station, schools and a small area of residential estates. Most of the built-up area is residential streets, and semi-detached in a suburban setting, two to three storeys with front and rear gardens. The street pattern comprises linear well-connected streets, although some streets at the western end of the area are culs-de-sac.

- **Colindale:** There is a distinct difference in character between the north and south of this area. Mixed uses (retail, industrial, hospital, training college etc.) cut across the residential areas. Areas to the south are largely residential streets of a coherent character, while areas to the north largely residential estates. Building heights are consequently inconsistent through the area, and the central and northern parts do not have any coherent character. Houses in the south of the area typically are two storey and semi-detached, built between the wars. In the north, the dwellings were mostly built in the mid to late twentieth century and include a mix of types arranged on culs-de-sac. Current plans for regeneration in Colindale will see an additional 10,000 homes provided, and a consequent increased density of development.

- **Mill Hill:** This area is largely semi-rural in character, and mostly residential.

- **Edgware and Burnt Oak:** This area is overwhelmingly residential in character, mostly comprising inter war development of semi-detached housing on linear residential streets. The area includes two linear shopping streets at Station Road (Edgware) and Mill Hill Broadway, as well as small pockets of residential estates, and commercial “sheds”.

4.3 Climate change mitigation and adaptation

The most recent figures available, for 2016[10], indicate that after reaching a peak of 1773.7 kilotonnes per annum (kpa) in 2006, the level of carbon dioxide (CO_2) emissions in Barnet had fallen back to 1,252 kpa in 2016. The 2016 figure comprised 48% from dwellings, 21% from non-domestic buildings and 31% from transport.

The TfL LIP3 MTS Borough Datapack indicates that as a result of a combination of changes to the vehicle fleet and MTS policies, CO_2 emissions from road transport in Barnet will reduce from 387.6 kta in 2013 to 357.7 kta in 2021 and to 117.3 kta in 2041. However, detailed modelling would be required to determine what proportion of this reduction is due to technology and what to the MTS policies.

4.4 Energy use and supply

In 2015 (the latest figures available), Government statistics[11] indicated that 466 tonnes of oil equivalent (ktoe) energy was consumed in the London Borough of Barnet. This is lower than the average for boroughs across Inner London. Of this, gas consumption accounted for just under 50%, while 22% was electricity consumption and just over 27% was of petroleum products. Over 21% of energy consumed was by industry, and nearly 52% was consumed in people's homes. Over 27% of energy used was for transport.

4.5 Fairness and inclusivity

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

Table 4.2: Ethnic makeup of London Borough of Barnet 2018

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

[10] Department of Energy and Climate Change (2018) - **2005 to 2016 UK local and regional CO_2 emissions: Statistical Release**.

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

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

Source: London Datastore

The proportions of the White British and BAME populations in Barnet are similar to those for London as a whole. However, it should also be noted that Barnet has by far the largest Jewish population of any London borough, with 17.5% of the population reported as Jewish in the 2016, compared with 1.7% for London as a whole[12].

In terms of disability, approximately 14% of Barnet's population is disabled, which is about average for London[13]. Just over 4% of Barnet's population receive Employment Support Allowance or Incapacity Benefits. This is slightly below the London average and below the average for Britain as a whole. Less than 1% of the population claim Disability Benefit, which is similar the regional and national average[14].

The London Borough of Barnet ranked 156 out of 326 local authorities in England in the Index of Multiple Deprivation, and 25 out of the 33 London Borough[15].

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

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

4.6 Flood risk

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

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

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

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

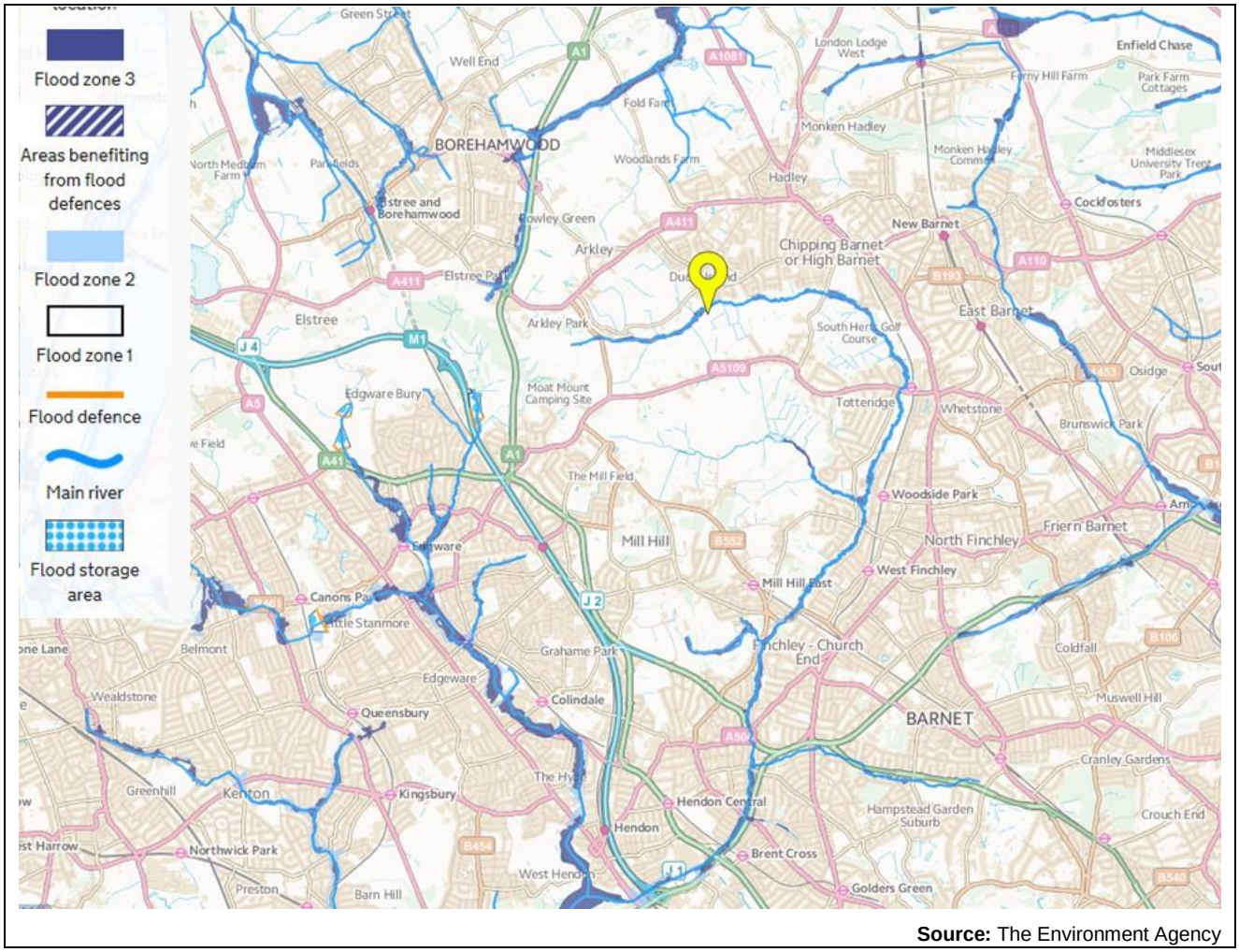
[14] Office for National Statistics (2016 – **NOMIS**.

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

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

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

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



Source: The Environment Agency

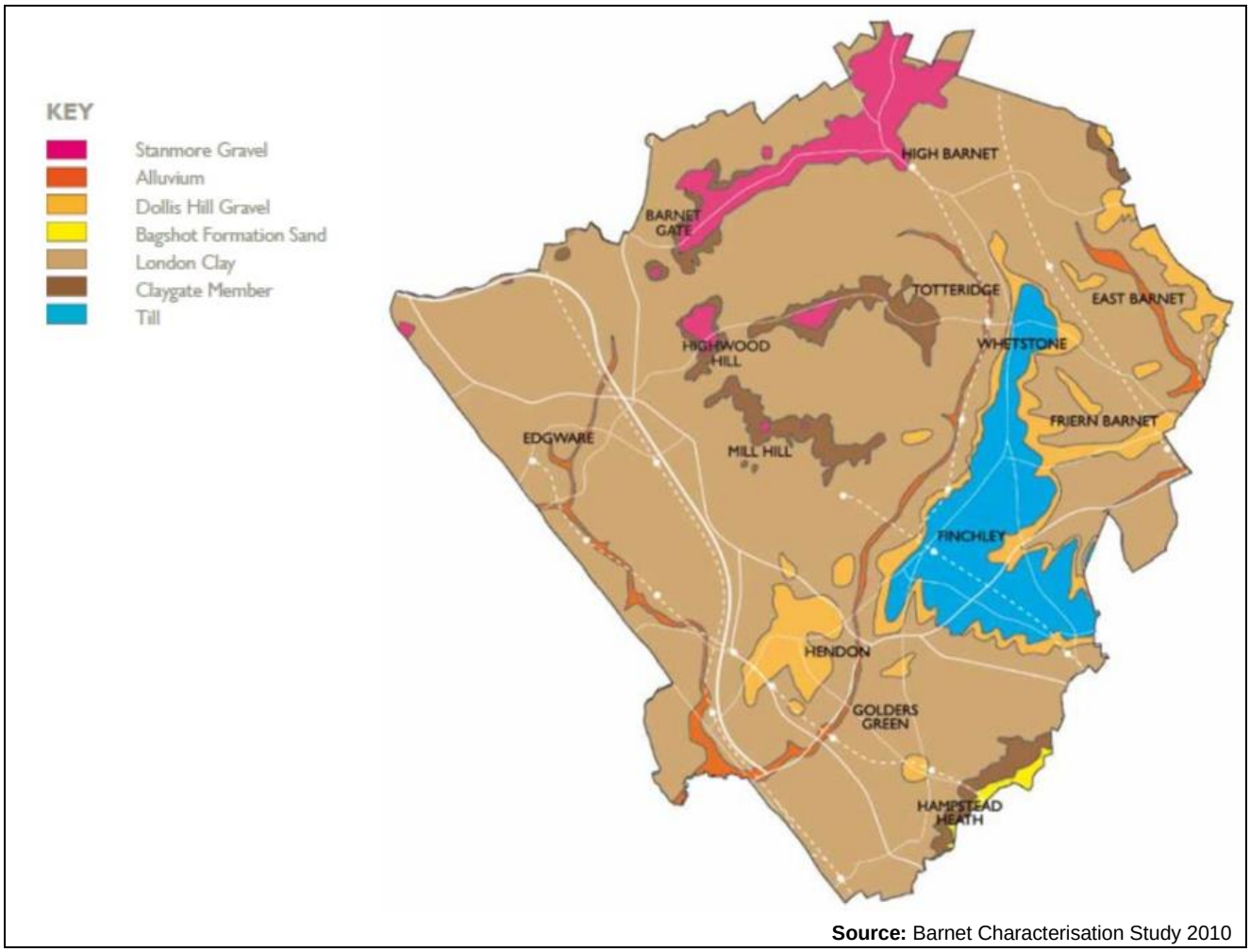
4.7 Geology and soils

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

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

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

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



Source: Barnet Characterisation Study 2010

4.8 Historic Environment

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

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

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

4.9 Materials and waste

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

4.10 Mental and physical wellbeing

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

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

4.11 Natural Capital and Natural Environment

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

- **Epping Forest Special Area of Conservation:** Epping Forest was designated as a SAC in 2005. It comprises a large ancient wood-pasture with habitats of high nature conservation value including ancient semi-natural woodland, old grassland plains, wet and dry heathland and scattered wetland. The forest is primarily beech on acid soils, which are important for a rare mosses, fungi, invertebrates and insects (including stag beetles) associated with decaying timber.

- **Lee Valley Special Protection Area and Ramsar Site:** Lee Valley comprises nearly 450 ha. of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that display a range of man-made and semi-natural wetland and valley bottom habitats. The area comprises the Sites of Special Scientific Interest (SSSIs) at Amwell Quarry, Rye Meads, Turnford and Cheshunt Pits, and Walthamstow Reservoirs. SPA status was granted in 2000 because of the site's European ornithological interest. It is used regularly by rare species such

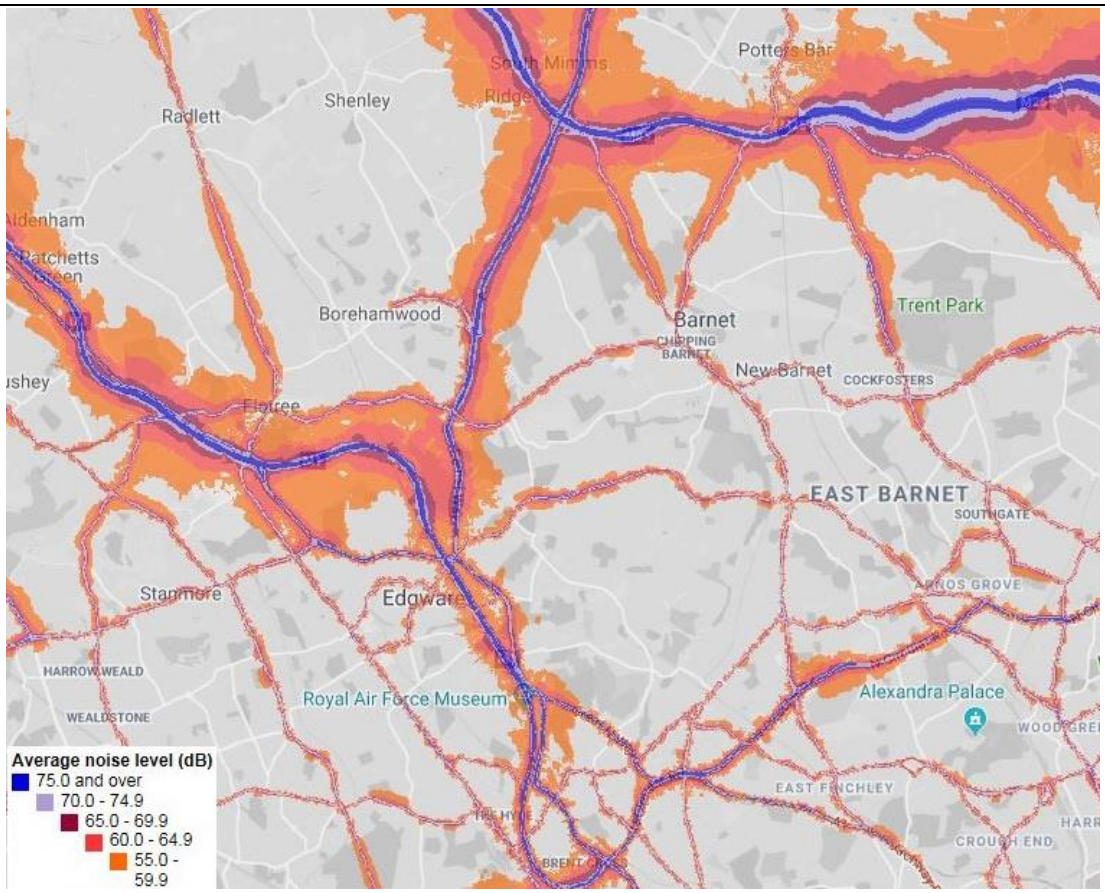
[16] Public Health England (2018) – **Local Authority Heath Profiles: Profiles for London**.

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

4.12 Noise and vibration

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

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



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

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

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

4.13 Safety and security

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

4.14 Water resources and quality

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

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

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

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

5.0 SEA Objectives and Framework

5.1 Objectives

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

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

Table 5.1: TfL/GLA environmental objectives for SEA

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

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

5.2 Alternatives

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

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

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

5.3 Habitats Regulations Assessment

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

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

5.4 SEA Framework Matrices

5.4.1 Approach

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

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

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

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

Table 5.2 Summary of SEA Matrices and Barnet LIP objectives

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

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

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

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

Table 5.3: Description of packages modelled for the MTS

Package	Description
Package A: Core reference case	The core reference case includes funded public transport and highway schemes and likely changes in London's land use and economy. It assumes the latest available projections of population and employment from the GLA as well as Government assumptions on changes in the wider economy, and current funded schemes. A scheme list is provided in Appendix 1 and a summary of key schemes is provided below: • Current view of funded National Rail2 schemes, HLOS programme, Thameslink programme, HS2, West Anglia and Great Western improvements. • The opening of the Elizabeth Line in 2019, the Northern Line Extension and Tube upgrades to the Victoria, Jubilee, Northern and Sub Surface Lines. • DLR, Trams, London Overground and bus service improvements. • TfL's Road Modernisation Plan, cycling infrastructure schemes and the introduction by 2020 of the Central London Ultra Low Emission Zone (ULEZ). Wider assumptions have been made about policies relating to aspects such as fares, fuel costs and car parking.
Package B: Optimising the network	One of the main challenges identified in the core reference case is continued traffic dominance with highway congestion affecting bus speeds. Package B aims to enhance the existing network through bus priority schemes the reallocation of road space in areas of high place value identified by the Street Types for London. It also includes frequency improvements to some rail services. A summary of key schemes is provided below: • Bus priority schemes, enabling faster journey times in Central London; low emission bus zones; and high frequency links; • 30 trains per hour on the Elizabeth Line; • Some selected National Rail and London Overground improvements; • Tram frequency uplifts; and • 10 to 30 per cent reduction in highway capacity on the highway links with the highest value ('place') as identified in Street Types for London.
Package C: Incremental expansion	Crowding on the Tube, Elizabeth Line, DLR, London Overground, Trams and National Rail is a key challenge in the core reference case because funded improvements do not go beyond the mid-2020s and demand for travel will increase. Building upon the improvement schemes included in package B, package C aims to reduce crowding, encourage further mode shift from the car and increase public transport demand. London can also maximise the benefits of National Rail in south London by creating a London Suburban Metro. These schemes represent improvements that require line or track upgrades and new rolling stock but not new rail lines. A summary of key schemes is provided below: • Deep Tube upgrade & World Class Capacity programmes including upgrades to the Bakerloo, Central, Waterloo & City, Piccadilly, Jubilee and Northern Lines; • Creating a London Suburban Metro; • Further National Rail investment including upgrades to West Anglia mainline, Brighton mainline, Chiltern Line and new stations; • 30 trains per hour on the DLR; • London Overground frequency increases; and • Construction of the Silvertown Tunnel and associated bus improvements.

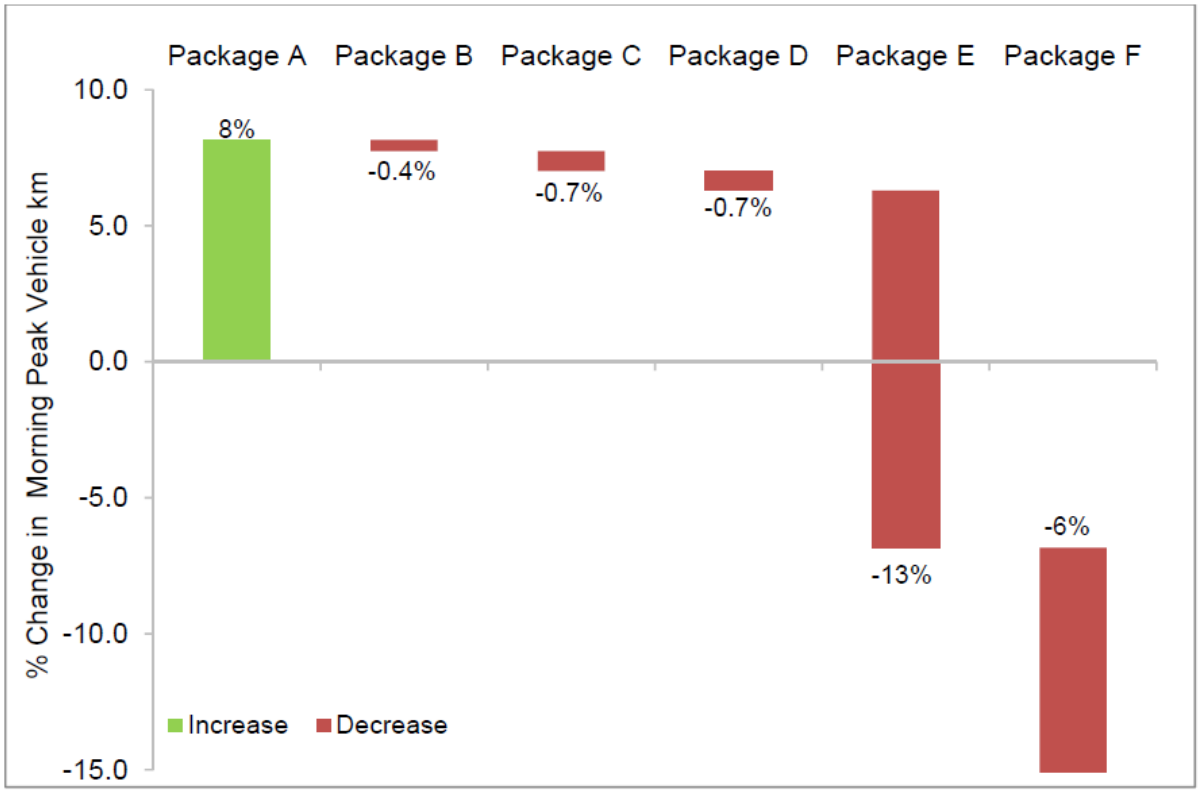
Package	Description
Package D: New connections	New public transport connections are needed to unlock growth in jobs and homes, provide an improved public transport service and reduce crowding. These schemes also support further agglomeration benefits in London's economy. A summary of key schemes is provided below: • Crossrail 2, linking Surrey and Hertfordshire with two new 37 kilometre tunnels from Wimbledon to Tottenham Hale and New Southgate; • Bakerloo Line Extension to Lewisham and beyond; • Elizabeth Line extension to Slade Green; • DLR extensions from Gallions Reach; • London Overground extensions and strategic interchange investment including to Barking Riverside and Abbey Wood, and to Hounslow; • Tram extension from South Wimbledon to Sutton; and • Further bus network development.
Package E: Traffic reduction	Package E contains a range of measures to reduce traffic and achieve Healthy Streets for London. A summary of key schemes is provided below: • Further road space reallocation to walking, cycling and bus priority in order to reduce traffic dominance and deliver Healthy Streets for London. • Further increases in parking charges, limits on free commuter parking or a work place parking levy; • Measures to accelerate the rate of car ownership reduction resulting in a quarter of a million fewer cars owned in London; and • Measures to limit the growth of freight traffic, so that HGV traffic does not rise, and van traffic grows only in line with population.
Package F: Longer term changes to the way road use is paid for	Changes to the way road use is paid for in the longer term could help achieve an 80 per cent mode share for walking, cycling and public transport. A summary of the illustrative measures included is provided below: • An indicative distance-based charge. The inner London distance-based charge assessed was twice the outer London charge per kilometre; and • Measures to encourage green technology uptake.

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

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

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

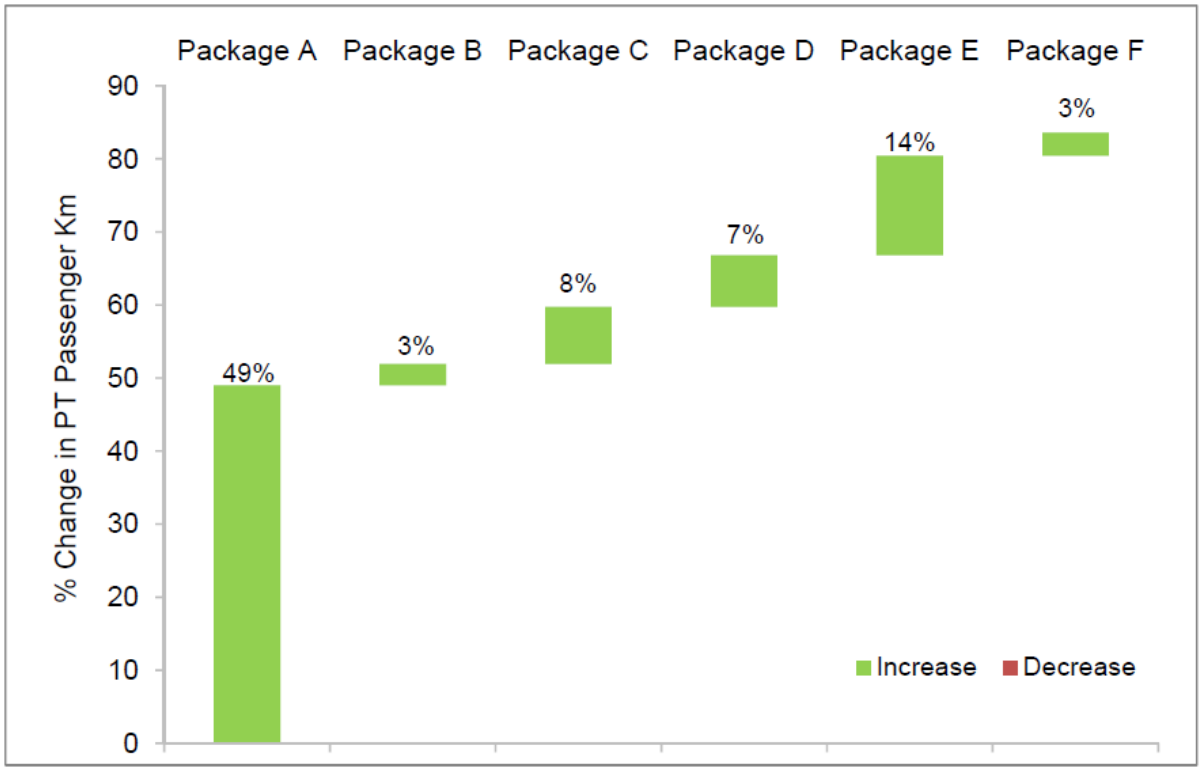
Figure 5.1: Change in London morning peak hour vehicle kilometres, 2015 to 2041 for packages A to F



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

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

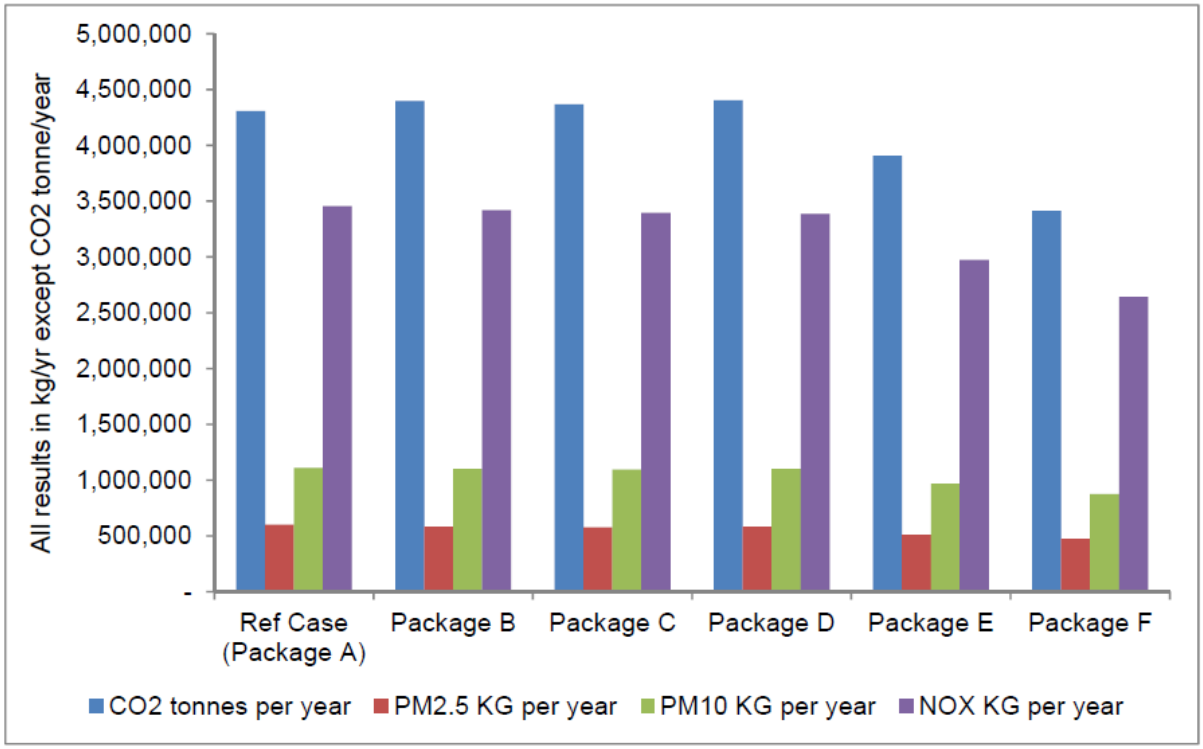
Figure 5.2: Change in 12-hour public transport passenger kilometres, 2015 to 2041 for packages A to F



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

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

Figure 5.3: CO_2, $PM_{2.5}$, PM_{10} and NO_X emissions from road-based transport, 2041 for packages A to F



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

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

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

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

5.4.2 Matrix 1: LIP Objectives A-C

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

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM_{10}, NO_x, NO_2)?	Encouraging healthier lifestyles and active travel will help mode shift from cars, together with support for liveable neighbourhoods will support emissions reduction. Promotion of Healthy Streets and Vision Zero principles will help reduce growth in emissions.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift and healthy streets proposals are not likely to be sufficiently great to give a significant improvement in air quality in addition to that due to changes in vehicle technology.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Mode shift and healthy streets proposals are not likely to be sufficiently great to give a significant improvement in air quality in addition to that due to changes in vehicle technology.	0	None required

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

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

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

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

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

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

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

Topic	Objective	Assessment guide questions	LIP Objectives A: Encouraging healthier lifestyles, B: Applying 'Healthy Streets' principles and C: Achieve zero 'Killed or Seriously Injured' by 2041.		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
		Will it protect and enhance the biodiversity of the region's waterbodies to achieve a good ecological status?	No direct effects.	0	None required
		Will it increase the planting of green roofs, green walls and soft landscaping?	No direct effects.	0	None required
		Will it create better access to green space to enhance mental and physical health benefits for all Londoners, particularly those with existing mental health conditions?	No direct effects.	0	None required
		Will it result in a greener public realm that can enhance mental health benefits?	No direct effects.	0	None required
Noise and vibration	To minimise noise and vibration levels and disruption to people and communities across London and reduce inequalities in exposure	Will it improve access to quiet and tranquil places for all?	Greater emphasis on walking, cycling and public transport will support this and Vision Zero principles will support this.	+	None required
		Will reduce levels of noise generated?	Mode shift is unlikely to be sufficient to reduce noise levels	0	None required
		Will it reduce inequalities in exposure to ambient noise?	Mode shift is unlikely to be sufficient to reduce noise levels.	0	None required

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

5.4.3 Matrix 2: LIP Objective D

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

Topic	**Objective**	**Assessment guide questions**	**LIP Objective D:** Support more sustainable travel to school, workplaces and other destinations		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM_{10}, NO_x, NO_2)?	The reduction of car trips to schools, new development travel plans and car club provision will help reduce growth in emissions.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift is not likely to be sufficiently great to give a significant improvement in air quality	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	The focus on schools and new developments are likely to have positive impacts on communities vulnerable to poor air quality	+	None required
		Will it result in air quality changes which negatively impact the health of the public?	Mode shift will not have a negative impact on health.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Mode shift is not likely to be sufficiently great to reduce number of people exposed to poor air quality in addition to that due to changes in vehicle technology.	0	None required

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

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

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

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

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

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

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

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

5.4.4 Matrix 3: LIP Objective E

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

Topic	**Objective**	**Assessment guide questions**	**LIP Objective E:** Improving air quality		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM_{10}, NO_x, NO_2)?	Improvements to EV infrastructure and ULEZ extension will support emissions reduction.	+	None required
		Will it help to achieve national and international standards for air quality?	Improvements to EV infrastructure and ULEZ extension will support emissions reduction and help achieve air quality standards.	+	None required

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

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

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

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

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

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

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

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

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

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

5.4.5 Matrix 4: LIP Objectives F and G

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

Topic	**Objective**	**Assessment guide questions**	**LIP Objectives: F New and revised public transport routes and G. Introduce step-free facilities at stations and accessible bus stops**		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants,	Will it help to reduce emissions of priority pollutants (e.g. PM_{10}, NO_x, NO_2)?	Reduction in traffic through improving public transport routes will reduce pollutant emissions	+	None required

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

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

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

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

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

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

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

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

5.4.6 Matrix 5: LIP Objective H

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

Topic	**Objective**	**Assessment guide questions**	**LIP Objective H:** Secure significant regeneration and growth in Barnet's opportunity areas		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM_{10}, NO_x, NO_2)?	The reduction of car trips and promotion of active travel will help reduce growth in emissions.	+	None required
		Will it help to achieve national and international standards for air quality?	Mode shift is not likely to be of a sufficient scale to give a significant improvement in air quality.	0	None required

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

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

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

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

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

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

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

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

5.4.7 Matrix 6: LIP Long-term proposals

Table 5.10: SEA Matrix 6 LIP long term proposals

Topic	**Objective**	**Assessment guide questions**	**LIP Objective:** Long term proposals up to 2041		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM_{10}, NO_x, NO_2)?	Measures are unlikely to contribute to signifiant reductions in emissions of pollutants in addition to effects of changes in vehicle technology and other MTS policies.	0	None required
		Will it help to achieve national and international standards for air quality?	Measures are unlikely to contribute to signifiant reductions in emissions of pollutants in addition to effects of changes in vehicle technology and other MTS policies.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Measures are unlikely to contribute to signifiant reductions in poor air quality in addition to effects of changes in vehicle technology and other MTS policies.	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	No negative effects from these measures.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Measures are unlikely to contribute to signifiant reductions in emissions of pollutants in addition to effects of changes in vehicle technology and other MTS policies.	0	None required

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

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

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

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

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

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

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

5.4.8 Matrix 7: LIP Short-term proposals

Table 5.11: SEA Matrix 7 LIP short term proposals

Topic	**Objective**	**Assessment guide questions**	**LIP Objective:** LIP 3-year indicative programme		
			Assessment	**Scale of Effect**	**Mitigation or Enhancement**
Air Quality	To reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure	Will it help to reduce emissions of priority pollutants (e.g. PM_{10}, NO_x, NO_2)?	Reductions in pollutant emissions will result from measures.	+	None required
		Will it help to achieve national and international standards for air quality?	Reductions in pollutant emissions are unlikely to help achieve air quality standards in the short term.	0	None required
		Will it reduce the number of people exposed to poor air quality, particularly for vulnerable communities and 'at risk' groups?	Numbers of people exposed to poor air quality are unlikely to reduce in the short term.	0	None required
		Will it result in air quality changes which negatively impact the health of the public?	Air quality will improve, although not significantly in the short term.	0	None required
		Will it reduce the number of premature deaths caused by poor air quality?	Number of premature deaths unlikely to reduce in the short term.	0	None required

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

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

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

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

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

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

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

5.5 Monitoring

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

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

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

No.	Indicator	Measure
	Environment	
1, 2	CO_2 emissions	Total CO_2 emissions in London
4	Oxides of nitrogen emissions	Tonnes of NO_x emitted in London
5	Particulate emissions	Tonnes of $PM_{2.5}$ and PM_{10} emitted in London
8b	Flood risk (surface water)	Properties at risk of surface water flooding
	Social	
10	Healthy Life Expectancy	Healthy life expectancy at birth for men and women
N/A[19]	Child Obesity	Percentage of overweight and obese children in Reception Year (aged 4-5) and Year 6 (aged 10-11)
15	Happiness	Self-reported levels of happiness
16	Satisfaction with London	% of Londoners satisfied with the capital as a place to live
18	Social integration	% of people who think their local area is a place where people from different backgrounds get on well together
	Economic	
19	Gross Value Added	Gross Value Added (GVA) per head (£) in London
20	Employment	Employment rate in London
24	Income inequality	Disposable income differentials in London
25	Child poverty	Children living in households below 60 per cent median income
27	London Living Wage	% of people earning less than London Living Wage (LLW) per hour in London

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

6.0 Next Steps

6.1 Development of the LIP

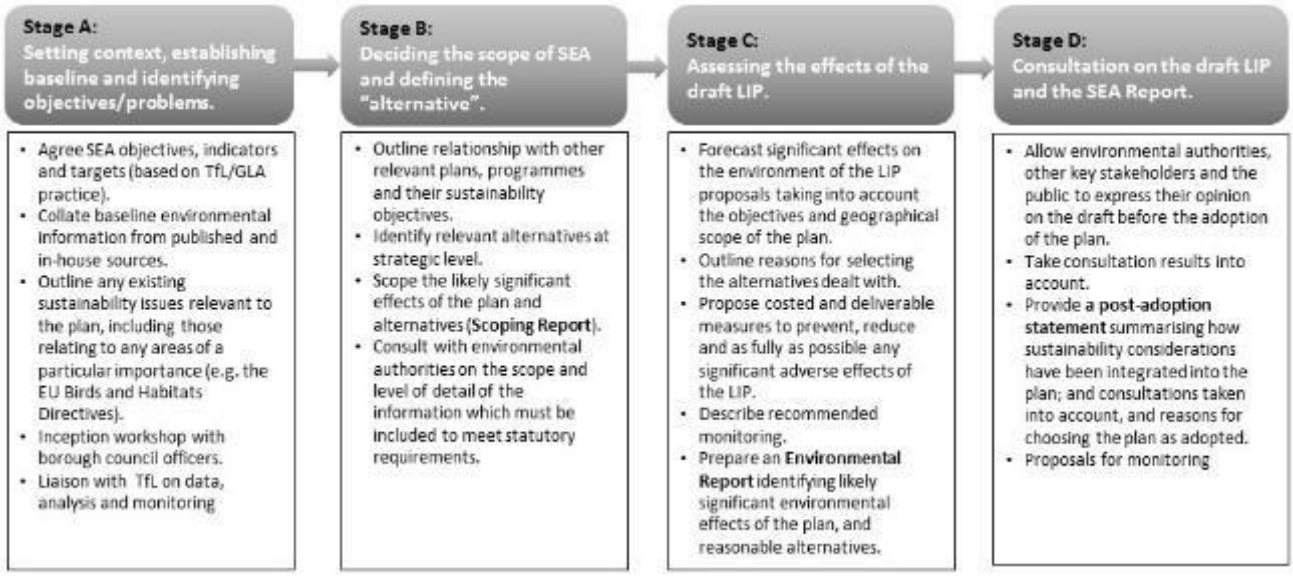
A draft of the LIP was submitted to Transport for London in November 2018 for comment. Barnet Council is also presently conducting a public consultation exercise on the LIP proposals.

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

6.2 Remaining Stages in the SEA Process

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

Figure 6.1: Stages in the SEA Process



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

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

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

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