

Local Implementation Plan

Roads and transport

17 June 2019

London Borough of Richmond upon Thames

Third Local Implementation Plan

April 2019

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Executive summary

The Third Local Implementation Plan for the London Borough of Richmond upon Thames is a statutory document detailing how the borough will implement the Mayor's Transport Strategy on a local level. The plan provides an overview of the existing transport provision in the borough, short- and long-term targets and a roadmap for achieving these targets. There is a detailed three-year delivery plan for achieving the short-term targets.

The plan shows support for the over-arching mode share target and the nine outcomes of the Mayor's Transport Strategy. The mode share target for LB Richmond upon Thames is for 75% of all trips to be undertaken by walking, cycling and public transport, from a baseline of 61%.

The nine outcomes are:

1. London's streets will be healthy, and more Londoners will travel actively
2. London's streets will be safe and secure
3. Londoner's streets will be used more efficiently and have less traffic on them
4. London's streets will be clean and green
5. The public transport network will meet the needs of a growing London
6. Public transport will be safe, affordable and accessible to all
7. Journeys by public transport will be pleasant, fast and reliable
8. Active, efficient and sustainable travel will be the best option in new developments
9. Transport investment will unlock the delivery of new homes and jobs

These outcomes will be achieved through the adoption of 14 over-arching objectives and 57 objectives linked to specific outcomes. These include:

- Provide safe and sustainable transport choices for all people, including those with disabilities and limited mobility
- Encourage and enable higher rates of walking and cycling through the development and improvement of high-quality, comprehensive walking and cycling corridors and supporting measures, thereby increasing physical activity levels amongst residents
- Reduce the number of people killed or seriously injured through collisions in LBRuT, with the long-term aim of achieving Vision Zero by 2041, by lowering speed limits on local roads, working with TfL to lower speeds on the TLRN, addressing collision hotspots and through education and training
- Reduce the environmental impacts and pollution levels due to transport, and encourage improvements in air quality, particularly near schools, town centres,

along major roads and areas that already exceed acceptable air quality standards

- Encourage improvements in public transport, including bus priority and quality and connectivity of transport interchange
- Work in partnership to promote safe, sustainable and accessible transport solutions, which minimise the impacts of development including in relation to congestion, air pollution and carbon dioxide emissions, and maximise opportunities including for health benefits and providing access to services, facilities and employment

The three-year delivery plan is broken down into four primary programmes:

- Support of Vision Zero
- Healthy Streets & active travel
- Working with school
- Improving air quality

Support of Vision Zero is the borough's road safety programme, focused on reducing road danger and addressing known collision hotspots. The programme includes introducing the 20mph speed limit and major highway improvements projects on the A310 Strawberry Vale, A305 Sheen Road, A308 Hampton Court Road, A307 Kew Road and A305 Staines Road.

The Healthy Streets and active travel programme is focused on infrastructure improvements that support walking, cycling and public transport use. This programme includes area-based projects, spot infrastructure improvement funds (our Healthy Streets fund for pedestrian and local cycle route improvements, and funding for cycle parking) and supporting the development of the borough's portion of the strategic cycle network. A new Active Travel Strategy will be developed to guide this programme, widening the remit of the borough's Cycling Strategy.

Our schools programme is focused around school travel planning, and the potential benefits for modal shift towards walking and cycling, safety improvements around schools and improving air quality around schools. The programme includes funding for School Streets and other infrastructure improvements, for 'Safe Walking' pedestrian training for Y3s, support for a Bikelt officers and other school-based programmes.

The air quality programme is composed of three strands: electric vehicle charge points, air quality revenue and air quality infrastructure and monitoring. The electric vehicle charge points will help support increased uptake of zero-emission vehicles and is an extension of our existing programme. The air quality revenue programme

will enable the borough to work more intensively with schools and in town centres to raise awareness of air quality and encourage behaviour change. The infrastructure and monitoring strand will fund additional air quality monitors and air quality specific infrastructure such as green screens, green walls and air filters.

The targets set for 2021 envision a borough with more people walking, cycling and using public transport, with fewer collisions, fewer car journeys and improved air quality. Achieving these targets will be a collaborative effort between the Council, Transport for London and everyone that lives, works or visits the LB Richmond upon Thames.

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 Guidance for Borough Officers on Developing the Third Local Implementation Plan (March 2018).

This document is the third LIP for the London Borough of Richmond upon Thames (LBRuT). 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 LBRuT 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 LBRuT 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. The LIP outlines how Richmond Council will set local priorities and targets to assist with achieving this aim.

This document also outlines how the Council will work with TfL to assist with delivering the outcomes, policies and proposals of the MTS.

Local approval process

The Housing, Community Safety and Environment Overview and Scrutiny Committee approved the Draft LIP on the 29th October 2018 and by Cabinet on 15th November 2018. The approval including releasing the Draft LIP for public consultation and for the approval of the Final LIP to be granted by the Portfolio Holder, Cllr Alexander

Ehmann, Deputy Leader of Richmond upon Thames Council and Cabinet Member for Transport, Streetscene and Air Quality.

All Elected Members were given the opportunity to comment on the final draft of the LIP, after changes had been made in response to the statutory public consultation.

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 between 30 November 2018 and 11 January 2019. The consultation appeared on the borough's website and was available for any member of the public to respond.

In addition, email notification of the consultation was sent to 128 individuals, 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, and were also given the option of responding via return email.

The direct consultees fell into several broad categories as follows:

<i>Statutory consultee</i>	<i>Number consulted</i>
TfL	1
Police	1
Disability groups (RUILs, Transport for All, London Travelwatch)	3

Local authorities	7
<i>Non-statutory consultee</i>	
National agencies	9
Transport & environment groups and operators	8
Business groups	1
Community/ residents' groups	22

Various NHS groups, public utility companies and other regional government agencies (e.g. London Fire Brigade) were also issued direct invitations to respond to the consultation.

There were 57 responses to the public consultation, including 14 direct responses and 43 using the online form. Bodies and individuals responding to the consultation included:

- Transport for London
- Metropolitan Police Service
- London Borough of Hounslow
- London TravelWatch
- Richmond Cycling Campaign
- Make Air Safe and Clean (MASC)
- Mums for Lungs East Sheen
- Friends of the River Crane Environment (FORCE)
- National Grid
- Natural England
- Historic England
- Port of London Authority
- Highways England
- Teddington Society

All comments received have been individually logged, considered and addressed. Individual responses have been issued to local groups.

Responses to the online consultation were largely positive, with 28% fully supporting the LIP objectives and a further 44% tending to support the objectives. Only 9% tended to oppose the objectives, and no respondents were fully opposed.

Online consultees showed similar levels of the support for the delivery plan, with 63% either fully or tending to support the plan, contrasted with 14% tending to oppose and 2% fully opposing.

Numerous themes could be seen through responses; concern over how poor air quality would be addressed, the need for improved bus services to offer a viable alternative to the car, a desire for better enforcement (of speeds, on idling and in respect to parking and loading restrictions) and the need for better infrastructure for walking and cycling. There were numerous comments that the plan could be more ambitious, most often in reference to walking, cycling, School Streets and the introduction of low-traffic neighbourhoods and filtered permeability.

Those that did not support the plan expressed concern about the proposals for 20mph and that due consideration was not given to trips that need to be undertaken by car. Some concern was also raised about how the expanded ULEZ would divide the borough in two.

Several changes were made in response to comments received by individuals and groups. These include:

- Inclusion of interim targets for 2021
- Updated text to reflect the results of the consultation on borough-wide 20mph
- Clarity on the borough's ambitions for the creation of a strategic cycle network and the process we will undertake to deliver this network
- Clarity on the new Healthy Streets fund and how this will be used to improve local walking and cycling routes
- Greater detail on how the Council will improve air quality and reduce exposure, particularly near schools and in town centres, including additional funding allocated directly to air quality
- Greater detail on how we will work with schools, including the aims of the school travel planning programme, the education and training programmes we provide and how we plan to better manage traffic outside of schools, including the wider introduction of School Streets
- Additional commentary on the need for better bus provision in the borough, with a request to TfL to find a way to improve local services and to introduce cleaner buses
- Greater detail on how the borough will support car-free and low-car developments, and how we will work with developers to minimise the traffic impact of new developments

Additional detail on consultation responses can be found in Appendix 1.

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 met its statutory duty and conducted a Strategic Environmental Assessment (SEA) and, as recommended, an Equality Impact Needs Assessment (EINA) on the proposals contained in its LIP. The LIP outcomes and programmes have been assessed for both purposes, and while this process has not identified any necessary changes to the LIP, the results of the assessment will be considered as part of each individual project.

The SEA Environmental Report, including a non-technical summary, and a draft of the EINA were available on the borough's website during the consultation period, with responses received from Historic England and Natural England. The Environmental Report and Environmental Statement, and the final EINA remain on the website at this link:

https://www.richmond.gov.uk/services/roads_and_transport/transport_planning/local_implementation_plan_for_transport

LIP approval

The draft LIP was submitted to the Mayor on 15 February 2019 and approved by the Deputy Mayor for Transport on 12 April 2019.

2. Borough Transport Objectives

Introduction

This chapter sets out the local policy context for the third round of LIPs. It covers the LBRuT'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 is informed by evidence and analysis of local needs and issues. 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

Geography

Richmond upon Thames is in southwest London and is bordered by the London Borough of Hounslow to the north, the London Borough of Wandsworth to the east, the Royal Borough of Kingston upon Thames to the south, and Surrey to the west.

The borough covers an area of 5,095 hectares (14,591 acres) and is the only London borough spanning both sides of the Thames. The borough has a resident population of 197,300 and consists of some 85,100 households.

The corporate vision is for Richmond upon Thames to be the best borough in London; a borough identified by its green character, historic buildings, high quality appearance, vibrant high streets and outstanding schools and services; one where business and the voluntary sector can thrive; where citizens can help change neighbourhoods in which they live and feel safe being part of one of London's safest boroughs. A borough where the most vulnerable of our residents are supported and where everyone can live as independently as possible with good health and a sense of wellbeing for the better.

Richmond's Spatial Strategy reinforces the borough's context as an outer London borough that is characterised by a high quality natural, built and historic environment with highly valued open landscape, parks, green spaces and opportunities for sport, recreation, culture and tourism. The overarching principles are to protect the unique local character, maintain and enhance open spaces as well as heritage, achieve high levels of sustainability and ensure all communities have access to housing, employment opportunities, services and facilities.

The 2015 Residents' Survey showed that almost all Richmond residents (97%) are satisfied with their local area as a place to live. The natural environment with its high-quality parks and open spaces, the location and convenience as well as the quiet and peaceful nature of the borough are the most important attributes for the borough's residents.

The borough is composed of 14 neighbourhoods, each with a distinct community, facilities and local character. The borough's neighbourhoods are attractive with many listed buildings and Conservation Areas. The local character of each is unique, recognisable and important to the community and to the character of the borough as a whole. The special quality and character of the borough and its neighbourhoods has led to the designation of 14 Registered Parks and Gardens, 4 Scheduled Monuments, 72 Conservation Areas and over 1,100 listed buildings (including 40 Grade I listed sites).



Figure 1: Richmond's 14 neighbourhoods

The borough's main town centre is Richmond, and there are four district centres at Twickenham, Teddington, East Sheen and Whitton, as well as many smaller local centres. Richmond has a range of convenience and comparison shopping, is a major

office location and has a well-developed entertainment sector, theatres and cinemas. The town has considerable historic interest, including remnants of the former Richmond Palace, historic homes and parks on Richmond Hill, Richmond Green and the river frontage are all attractive destinations for tourists. Public transport connections are good with both rail and Underground train services.

Just over 50 per cent of the borough is greenspace, including landscapes of intense historic interest such as Richmond and Bushy Parks and the Old Deer Park, the River Thames and the River Crane corridors and other tributaries. The Arcadian Thames landscape runs through the borough, and is the setting of a number of parks, palaces, towpaths, open spaces and places of cultural and historic importance; the area is also one of high archaeological potential.

In addition to the parks and open spaces, visitors come to major attractors within the borough such as Royal Botanic Gardens Kew, Hampton Court Palace, the Wildfowl and Wetland Centre and the Rugby Football Union at Twickenham and other sporting venues. The Royal Botanic Gardens are one of only four World Heritage Sites in Greater London. Approximately 4.5 million tourists visit the borough every year, generating an income of £200m.

The borough's historic environment and its protected open spaces limit the opportunities for development within the borough. Most new developments are focused on small brownfield sites, with a small number of larger sites identified within the Local Plan. Expected growth levels for the borough are the lowest of any outer London borough with an identified ten-year capacity of 8,110 new homes (by contrast, Wandsworth is 23,100, Kingston 13,640 and Hounslow 21,820).

Demographics

The borough's residents are among the most affluent in London. The median household income is £53,470, which is the highest of any outer London borough. There were approximately 95,900 employee jobs provided in the borough in 2008 and 14,185 active businesses.

Employment levels amongst residents are high, with a large proportion employed in highly skilled jobs. Education attainment levels are the highest amongst the outer London boroughs, as is gross weekly pay. While overall deprivation levels in the borough are low, there are also pockets of relative deprivation around Castelnau, Ham, Hampton Nursery Lands, Heathfield, Mortlake and Whitton.

Housing is mainly in owner-occupation (64% per the 2011 Census), and most people live in houses (nearly 60%). A key issue for the borough is the lack of affordable housing, with median house prices the highest of any borough in outer London

(£535,176 in 2014). The lack of affordable housing makes it difficult for first time buyers and affordability can have an impact in terms of overcrowding and poor-quality housing.

There is less ethnic diversity in the borough than many other parts of London, with 71% of residents describing themselves as White British, and an additional 12% describing themselves as 'white other'. The largest minority groups are Asian/Asian British: Indian, at 2.8% of the population, and Asian/Asian British: Other, at 2.5%. English is spoken as the main language by 90% of residents, and 99% can speak English well.

Transport & the environment

Transport in the local area is both a means to an end and a popular leisure activity. The borough has the highest cycling levels in outer London and walking is a popular option for many local trips.

There are 393 kilometres of public highway in the borough, including 13 kilometres of the Transport for London Road Network (TLRN). The Council is the highway authority for all but the TLRN and Crown Roads (those running through the Royal Parks). The A316 (Great Chertsey Road) and A205 (South Circular) are the two major trunk roads in the borough and are both part of the TLRN.

Figure 2 shows the designated 'Street Types' for all roads within the borough. Street Types are designated based on a combination of the movement and place function of each street. Street Types are intended to help ensure that new schemes are appropriate to their location. There are nine Street Types, based on three possible movement categories and three possible place categories.

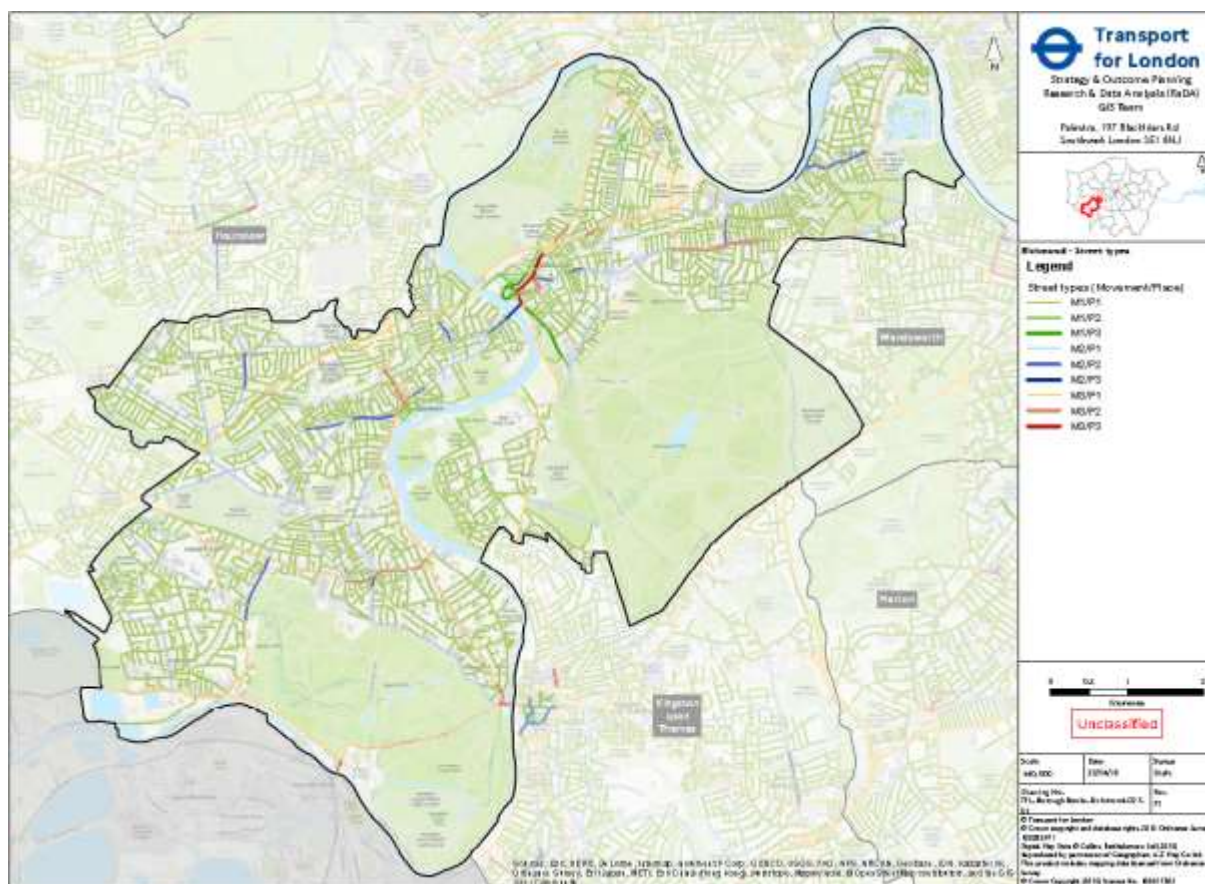


Figure 2: Street Types (Source: TfL)

The vast majority of the roads in the borough are designated as local streets (M1/P1), and the TLRN designated as core roads (M3/P1). Additional core roads include the A308 Hampton Court Road and High Street in Hampton, as well as the A312, A307 and the A310. Locations with the highest ‘place’ designations are all within Richmond town centre, with parts of Twickenham, Teddington, Hampton Hill, Whitton, Sheen and Barnes having the medium place function.

The River Thames is a major source of severance within the borough, as are the Royal Parks and some portions of the rail network. There are ten bridges that cross the River Thames within the borough. Of these, seven are road bridges and three are foot bridges. The largest gap between road bridges is over 7km, between Richmond Bridge and Kingston Bridge. In addition, the Hammertons Ferry operates offers seasonal crossings between Marble Hill House and Ham House, and the Hampton Ferry operates between Hampton and Hurst Park in Surrey.

Just over 75% of households in the borough have at least one car or van, with overall car ownership at 1.06 cars per household and a car trip rate of 1.17. Both car ownership and car use rates are comparable to other outer London boroughs. Car ownership levels are highest in the west of the borough, in Hampton Hill, west

Twickenham and Whitton. Ownership levels are also high in the area bordering the north side of Richmond Park, where housing densities are very low.

There are over 35 Controlled Parking Zones (CPZs) within the borough, ranging from a single road to whole neighbourhoods, covering approximately one-third of the borough. Some are operational for a few hours on weekdays, while others operate seven days a week. The zones are mainly located in the north and east of the borough, with small zones in the south around Teddington station, Hampton Wick station and Hampton Court Palace.

Access to public transport varies across the borough, with Public Transport Accessibility Levels (PTALs) ranging from 6a (the second highest level) in Richmond and 5 in Twickenham, to PTAL 2 and below in most of the borough. There is some correlation between car ownership and PTALs, with lower car ownership levels in Richmond and Twickenham.

There are 14 rail stations across the borough. While most are radial routes offering services to Central London, the borough does feature one of the few orbital routes in London with the Kingston loop running between Richmond and Kingston via Twickenham, Strawberry Hill, Teddington and Hampton Wick.

Many of the borough's train stations are in residential areas and are vital for people to access employment, shopping and leisure facilities. Although rail routes are largely segregated, there are four level crossings located in the east of the borough at:

- Vine Road, Barnes
- White Hart Lane, Barnes
- Sheen Lane, Mortlake
- Manor Road, North Sheen

Around 30 bus routes serve the borough. The major bus interchanges are located at Richmond, Twickenham and Teddington town centres. In addition, a bus garage is located at Fulwell. The garage is divided in two with one part operated by Abellio London and the other part by London United. Between the two operators, 17 bus routes operate from the garage.

Due to the large open spaces, much of the borough has low NO_x and PM levels. The worst air quality levels are along the TLRN, particularly the A316 from East Twickenham to Richmond. NO_x levels are also high on the South Circular through Sheen, along Castelnau through Barnes and in Richmond and Twickenham town centres.

Changing the transport mix

Challenges and opportunities

The Mayor’s Transport Strategy sets the strategic direction for transport across London. The strategy includes a headline target for 80% of all journeys to be undertaken by walking, cycling or public transport by 2041, including 75% of trips in outer London. On a local level, this will require a 14% mode shift away from cars over the next 25 years, from a baseline of 61%. Achieving this target is reliant on ongoing investment in the public transport and cycling networks, and public realm improvements that will make it easier and more enjoyable to walk. The baseline and target mode shares are shown in Figure 3.

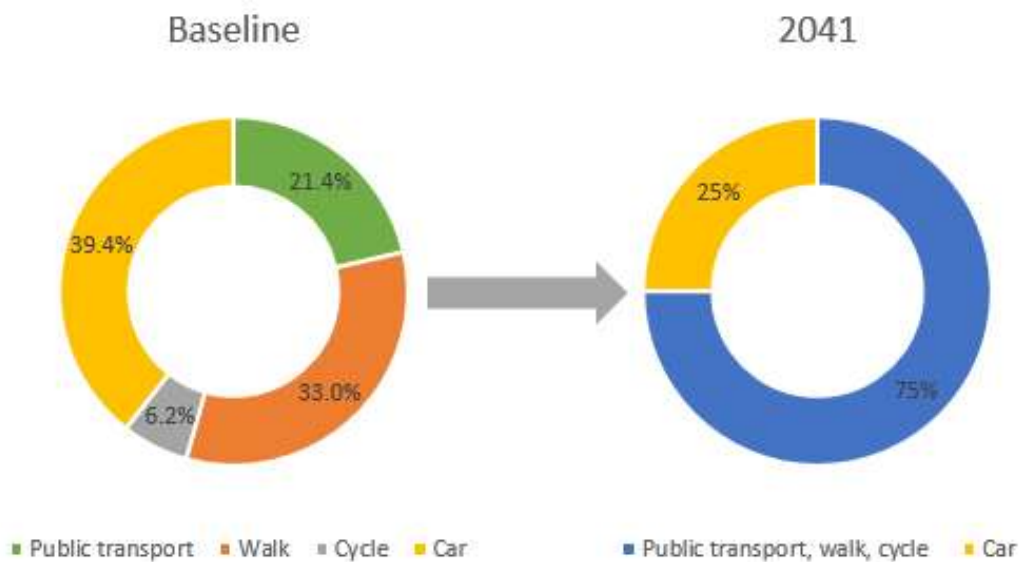


Figure 3. Baseline and target mode shares

The unique features and setting of LBRuT provide several challenges and opportunities in helping to achieve this target. The borough has strong base levels of walking and cycling (32.2% and 6.2%), with a high-quality public realm in many of the town centres. Access to public transport is limited in many parts of the borough, including parts of Ham and Petersham and areas in the west of the borough. Car ownership levels are high and continue to increase, but vehicle mileage is decreasing. Severance can make some local journeys difficult, particularly for those with limited mobility. Community engagement levels are high across many parts of the borough, and it’s an imperative that local groups are supportive of any infrastructure changes.

Increasing the mode share for walking and cycling provides the best opportunity for decreasing car use in LBRuT. In the long term this will be supported by improved access to public transport, particularly the arrival of Crossrail2 in the 2030s.

Walking

Walking plays an important part in urban life and is part of almost all journeys, whether as the complete journey or as a link between other modes of transport making up longer trips. The baseline mode share for walking is 33.0%.

The borough hosts portions of several strategic walking routes, including the Thames Path, Capital Ring and London LOOP. These routes are predominantly along towpaths and through the Royal Parks, but also include small stretches in local parks and along streets. These routes are predominantly used for leisure.

Per TfL's Analysis of Walking Potential 2016, there are 183,100 existing walking trips and 56,500 potentially walkable trips per day. Teddington and Richmond town centres are both identified as having high numbers of potentially walkable trips, and to a lesser extent, Twickenham, Sheen and Whitton. Figure 4 shows the potentially switchable trips across the borough. Overall, journeys to or from town centres are recognised as providing the greatest opportunity to encourage more walking. On a local level, there is also potential to increase walking levels for journeys to and from schools.

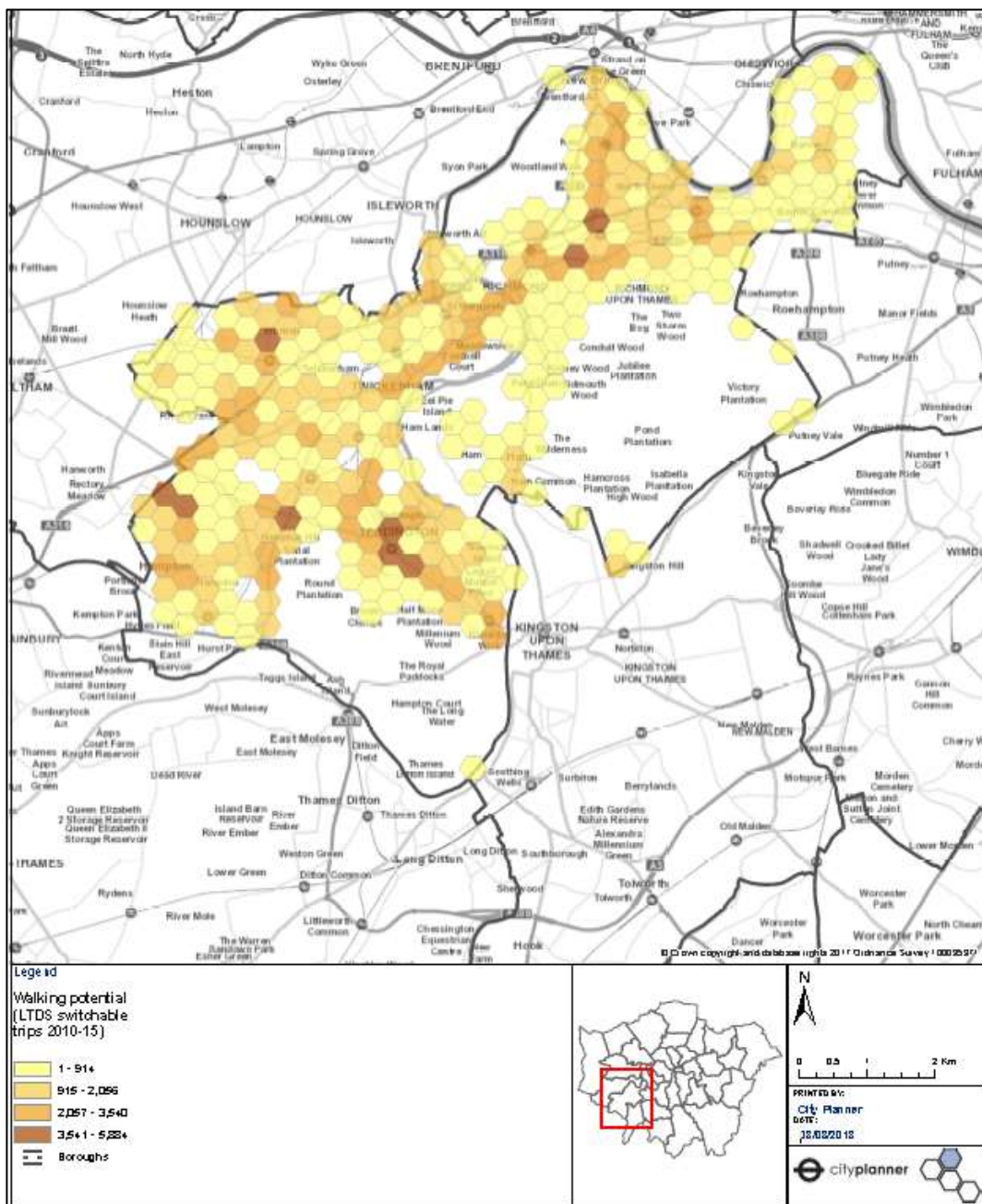


Figure 4: Potentially walkable trips (Source: TfL CityMapper)

Cycling

The cycling mode share for the borough stands at 6.2%, and the Active People Survey indicates that in 2014/15, 33% of adults in the borough cycled at least once a month. Per TfL's Analysis of Cycling Potential, 15% of Richmond's potential cycle trips are currently achieved (compared to 6% across Outer London). Most of the trips that have been classed as cyclable are currently undertaken by car, with high concentrations of these trips located in the south and west of the borough.

Introducing high-quality cycling routes, where people feel safe cycling, will be key to increasing cycling levels in the borough. Safety is identified as a key barrier to increased levels of cycling, particularly a fear of collisions, conflicts with motorists and busy traffic conditions. TfL's Attitudes to Cycling report has found that infrastructure improvements appear to be a key factor behind Londoners cycling more.

There are no strategic cycle routes currently located within the borough but there are four in development. A Quietway route connecting Teddington Lock to Richmond Park is currently in development with construction due to start in early 2019, a route linking Kingston to Bushy Park and Teddington Station, a route linking Twickenham with Brentford in Hounslow and a route along the A316 are currently in the design stage. TfL's Cycling Action Plan has identified several potential routes within the borough, indicating that there is considerable scope for further development of the strategic cycle network within the borough.

There are many other barriers to cycling that can also be addressed to encourage more people to cycle, more often. Ensuring that the supply of cycle parking facilities is in line with demand at stations, town centres and workplaces is an ongoing piece of work as cycling levels and travel patterns change over time. Working with schools to increase the numbers of children cycling is also critical, and the Council has engaged a Bikelt officer to work with several schools in the borough over the 2018/19 school year.

Public transport

The baseline mode share for public transport in the borough is 21.7%, which is very similar to other outer London boroughs - for example, Kingston is 21.6%. The lower densities in many areas make public transport less viable. While most areas are served by buses or trains, services are often infrequent or indirect and journey times cannot compete with the private car.

The arrival of Crossrail2, currently expected in the early 2030s, will increase the number of trains on the Shepperton line from four to six per hour, and up to eight trains per hour serving Hampton Wick. This will provide a welcome boost in an area with low PTALs.

Borough objectives

The overarching aim of this plan is for LBRuT to achieve the target of 75 per cent of trips to be made by walking, cycling and public transport by 2041, from a baseline of 61 per cent.

The following objectives support this aim and will provide the over-arching framework for transport improvements in the borough through 2041. While some aspect of these objectives will change over time, many will be iterative as the population of the borough ages and new children start school. Programmes will be adaptable to changing travel trends, different collision patterns and new technologies.

LBRuT will:

- Provide safe and sustainable transport choices for all people, including those with disabilities and limited mobility
- Encourage and enable higher rates of walking and cycling through the development and improvement of high-quality, comprehensive walking and cycling corridors and supporting measures, thereby increasing physical activity levels amongst residents
- Create attractive and pleasant environments and spaces that promote active and healthy lifestyles, including recognising their benefits to residents' social life and their economic benefits to the borough's centres. Locations will be assessed against the Healthy Streets Indicators
- Work closely with school and major employers to decrease car use and encourage and enable the uptake of active modes
- Make better use of the kerbside in town centres, with a focus on reducing conflict between different road users, encouraging active travel and improving bus speeds
- Reduce the number of people killed or seriously injured through collisions in LBRuT, with the long-term aim of achieving Vision Zero by 2041, by lowering speed limits on local roads, working with TfL to lower speeds on the TLRN, addressing collision hotspots and through education and training
- Reduce the environmental impacts and pollution levels due to transport, and encourage improvements in air quality, particularly near schools, town centres, along major roads and areas that already exceed acceptable air quality standards. This will include supporting the ULEZ expansion to the South Circular and improving access to electric vehicle charging points
- Ensure transport proposals conserve and enhance the built and historic environment, and are sensitive to the potential impacts on natural landscapes and bio-diversity
- Encourage improvements in public transport, including bus priority and quality and connectivity of transport interchanges, and support the use of Smart City technology and practices
- Improve accessibility to rail stations, including step-free access to platforms, by working with partners, including the operating companies

- Seek to improve bus journey times, particularly along key corridors and through town centres
- Support good growth by supporting car-free and car-lite development in areas of the borough with higher levels of public transport accessibility, where they can demonstrate that there would be no unacceptable adverse impact on the surrounding area
- Ensure that major developments are accessible by public transport, enabling new residents the best opportunity to use active, efficient and sustainable travel
- Work in partnership to promote safe, sustainable and accessible transport solutions, which minimise the impacts of development including in relation to congestion, air pollution and carbon dioxide emissions, and maximise opportunities including for health benefits and providing access to services, facilities and employment

These objectives are consistent with both the Mayor's Transport Strategy and the Richmond Local Plan. Targets and indicators have been set to ensure all objectives have been achieved and are detailed in Chapter 3.

Mayor's Transport Strategy outcomes

This section details how LBRuT will support the delivery of the individual outcomes within the Mayor's Transport Strategy. It details the challenges and opportunities for delivery within a local context and is mindful of the funding currently expected to be available for implementation.

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

Challenges and opportunities

The borough is well poised to achieve the Mayor's targets for active travel. The borough already has the highest combined levels of walking and cycling (39.2%) in outer London and the potential to achieve even more. The borough also has the highest proportion of residents achieving a healthy level of activity through travel of any outer London borough, with 40% of borough residents currently doing at least 20 minutes of active travel each day.

The current high levels of cycling are achieved without any access to the London-wide strategic cycle network. Access to the emerging network will help cycling to become an obvious choice for even more journeys. It is expected that by 2021, 15

per cent of the population will be within 400m of the network, and that this should increase to 72 per cent by 2041. Within LBRuT, the Richmond portion of the network includes four routes proposed for implementation by 2024, three of which are shown in Figure 5.

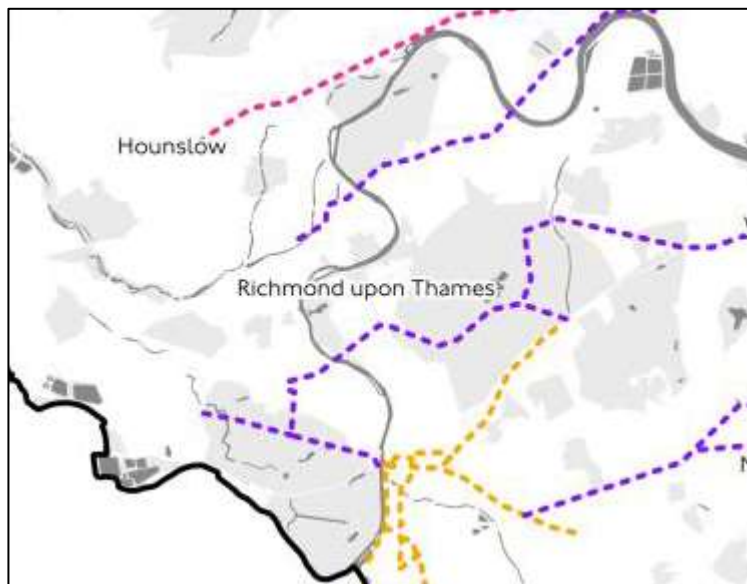


Figure 5: Proposed Quietways (Source: TfL Strategic Cycling Analysis)

The Teddington Lock to Richmond Park portion of the route is due for implementation in 2019/20. The other three routes proposed for the borough – Bushy Park to Kingston (plus the link to Teddington Station), Twickenham to Brentford and Twickenham to Richmond via the A316 - are currently in the design phase and expected to all be completed by 2023/24, with the exception of Twickenham to Brentford, which is expected to open beyond April 2024.

TfL's Cycling Action Plan has highlighted several opportunities for additional cycle corridors in the area. A top potential route has been identified through Sheen and Mortlake in to LB Wandsworth, with high potential corridors identified from Teddington to Twickenham and Teddington to Hampton Hill. Medium potential connections have been identified between Twickenham and Hampton Hill, Richmond and Kingston and Teddington and Kingston. Development of these corridors into high-quality cycling routes meeting the standards for inclusion in the London-wide strategic cycle network will be vital for reaching the borough's target cycling levels.

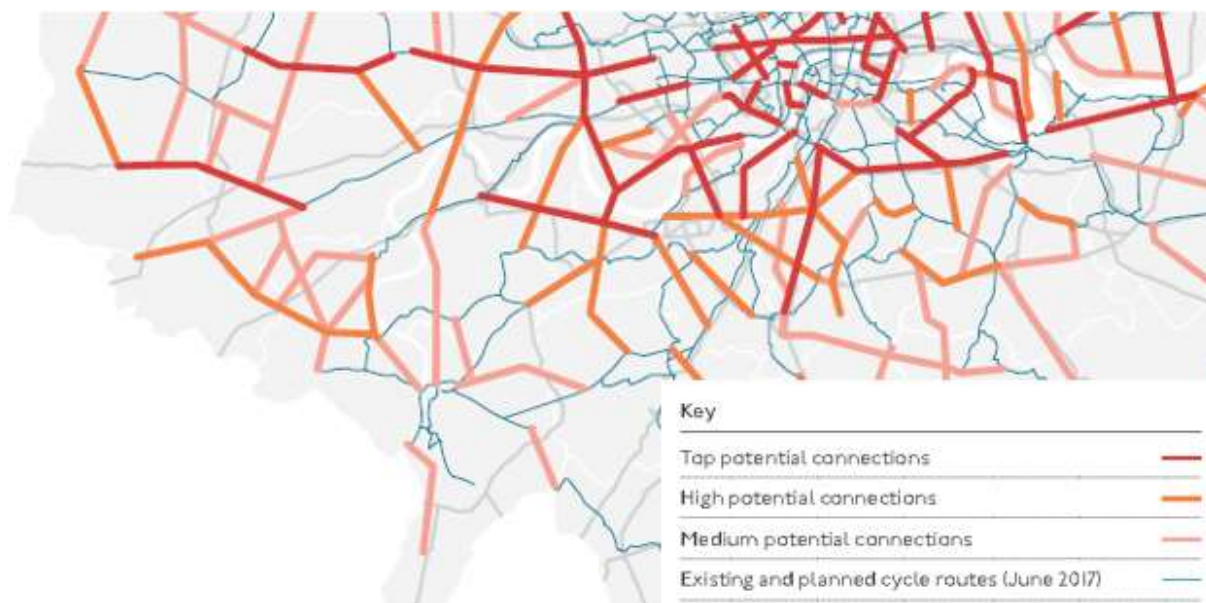


Figure 6: Priority connections for London-wide cycle network for 2041 (Source: TfL Cycling Action Plan)

In addition to strategic routes, making small-scale improvements can help to reduce severance and improve the attractiveness of local routes. Such interventions include crossing points, lighting improvements, footway widening, junction improvements and the introduction of contra-flow cycling on more one-way roads.

While activity levels are higher than average across the whole borough, there is significant variation in the proportion of residents achieving the target of two, ten-minute active travel trips per day, as shown in Figure 7.

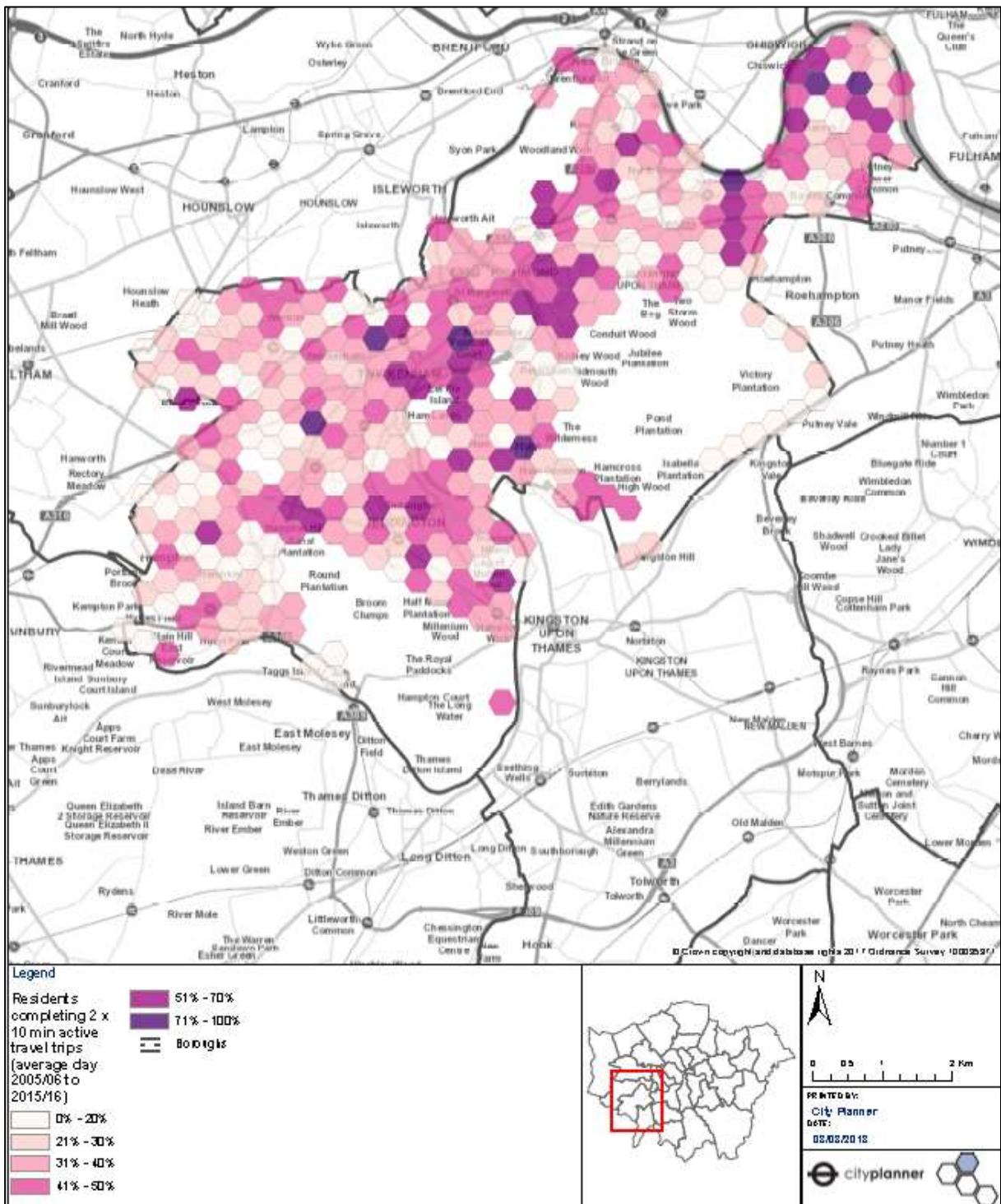


Figure 7: Residents achieving 20 minutes per day of active travel (Source: TfL CityMapper)

Residents in Whitton, Hampton and East Sheen are less likely to achieve the active travel target than those living in Twickenham, St Margaret’s and Richmond. There is a correlation between areas with low active travel levels and areas with both lower levels of public transport accessibility and higher levels of health deprivation and

disability. Targeting these areas will be a priority for both infrastructure improvements and community schemes, designed in partnership with Public Health. Interventions will include improving local walking and cycling routes to schools, town centres, bus stops and local rail stations, as well as softer measures such as school travel planning and promotion of cycling training to local residents.

Borough Objectives

The council will focus on increasing levels of walking and cycling as a means of supporting the borough's target of 75% of trips being undertaken by walking, cycling and public transport. This includes adopting the additional targets of increasing the proportion of the population undertaking 20 minutes of active travel daily and increasing the proportion of the local population living within 400m of the strategic cycle network.

The council will focus on following the Healthy Streets Approach to ensure walking and cycling are the natural choices for local journeys and use the Healthy Streets Toolkit to assess new infrastructure schemes.

The Richmond Cycling Strategy was published in 2017 (written in 2015/16) with an ambition for a 15 per cent cycling mode share by 2026. The strategy is focused on creating an improved cycle network across the borough and increase activity levels amongst residents. There have been numerous changes in policy since the current Cycle Strategy was written, namely the new MTS and its daughter documents – TfL's Vision Zero Action Plan, Cycling Action Plan and Walking Action Plan. This updated in policy, and updated analysis that underpins these documents, provides an opportunity to update and expand the current strategy to encompass walking as well as cycling, with a rounded focus on active travel.

The following objectives will be adopted to ensure outcomes are achieved:

- Expanding the existing Richmond Cycling Strategy into a comprehensive Active Travel Strategy, with a balanced approach to increasing both walking and cycling levels in the borough
- Developing a comprehensive strategic cycle network based on TfL's Strategic Cycling Analysis, with initial focus on supporting the implementation of the proposed Quietway routes and other high priority connections, and to work closely with neighbouring boroughs to strengthen cross-borough cycling routes. By 2022, we aim to have completed a strategic route linking Kingston Bridge to Twickenham (via the A310 and Broom Road), and to be in the process of building a route linking Mortlake to Putney, in partnership with LB Wandsworth

- Identifying and reviewing existing local walking and cycling routes against the Healthy Streets Indicators to identify where improvements can be made, such as crossing improvements, reducing street clutter, clearing pavement obstructions and improvements at junctions. This will be achieved through proactive area-based studies (starting with Hampton in the south west of the borough) and reacting to concerns raised by councillors, as well as those that live, work and visit the borough
- Prioritising permeability for non-car modes through the introduction of contra-flow cycling and filtered permeability
- Healthy Routes to schools will be developed to encourage more children to walk and cycle to school, including the introduction of School Streets, improving crossing facilities, including dropped-kerbs and Copenhagen crossings at side roads, but will also look at sight lines, lighting and address issues of severance
- Improve the walking and cycling routes through local parks, outdoor spaces, path and alleyways, to reduce severance and encourage physical activity for leisure as well as offering an alternative to trafficked routes for commuting and utility journeys. This will include examining existing public rights of way to formalise cycle access, where appropriate
- Continue to add more cycle parking throughout the borough, while also reviewing the location and quality of existing cycle parking spaces in town centres, schools, at stations and other key trip destinations, including examining the provision of spaces for larger cycles
- Improving wayfinding for pedestrians and cyclists, including on existing and new routes, supported walking and cycling maps highlighting key routes
- Responding promptly to requests for dropped kerbs and any other requests that related to providing basic levels of accessibility for those in wheelchairs or with limited mobility
- Request reviews of traffic signals with an aim of providing additional priority to pedestrians, where appropriate

Working with the local community will be a key component of helping to ensure that projects are in the right locations and include the improvements most needed by local people.

Education and training, including programmes focused on public health, will provide residents and local employees with the skills and confidence to use these facilities. These will focus on continuing the existing Safe Walking, Safe Scooting and Bikeability training offered to primary school students and adult cycle training. In 2017-18, the Council providing Bikeability training to 2,450 Y6 pupils across 48 schools, Safe Walking to 3,002 Y3 pupils across 50 schools, Safe Scooter training to

2,504 Y2 pupils at 45 schools. In addition, 1-2-1 cycle training sessions were held with 207 over 16s. The programme will aim to maintain this level of engagement.

The borough has an active school travel planning programme and is introducing a Bikelt officer into three local schools for the 18/19 school year. Connecting school travel plan activity to other active travel initiatives will encourage more children (and parents) to walk and cycle to school.

Active travel will also be supported through the introduction of safety schemes, including the introduction of lower speed limits on borough roads and junction safety improvements. Actions supporting reductions in vehicle traffic will also support increased uptake of walking and cycling. The borough's support for Good Growth will ensure that new developments are accessible by walking, cycling and public transport, encouraging new residents to establish healthy habits.

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

Challenges and opportunities

LBRuT has seen a decrease in the number of deaths and serious injuries from road collisions over the last ten years. The Mayor has set the ambitious target for zero deaths and serious injuries on London's roads by 2041, supported by interim targets for 2022, and 2030.

As with London as a whole, vulnerable road users account for most deaths and serious injuries from road collisions in the borough. This is expected to be an ongoing challenge as more trips are set to be made by active modes.

Figure 8 shows the location of killed and serious injury (KSI) casualty collisions in the borough between 2014 and 2016. There are relatively few locations with more than two KSI collisions in this time, with sites in Richmond town centre, the South Circular and Teddington serving as notable exceptions.

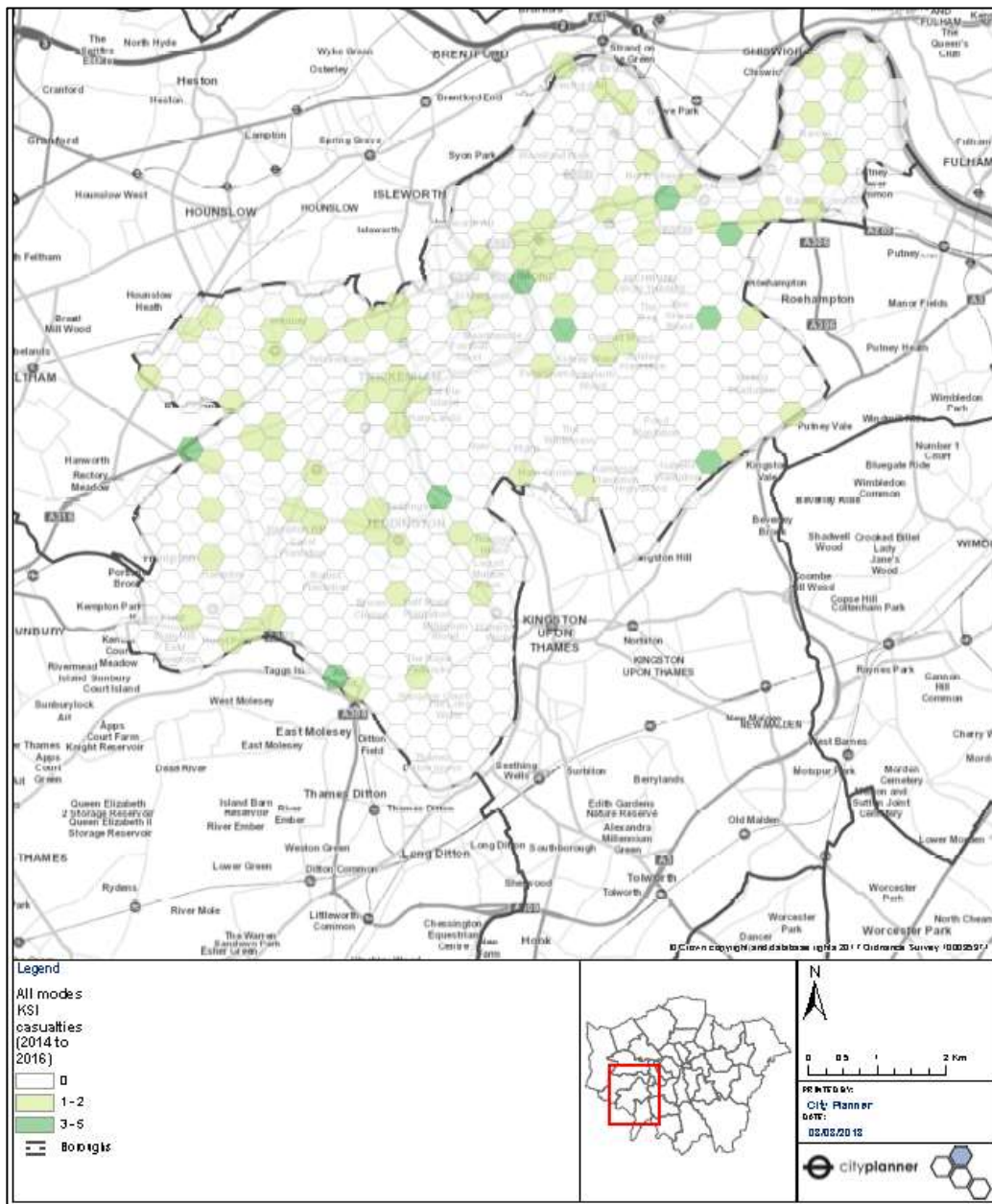


Figure 8: All mode KSI casualties (Source: TfL CityMapper)

Most KSI hotspots do not have discernible patterns to their collisions, but as a whole they can be seen to be symptomatic of congestion and a need for improved provision for pedestrians and cyclists.

Of the KSI collisions along Hampton Court Road, almost all involved a cyclist. In Teddington there was one serious collision involving a cyclist and a nearby serious collision involving a car; both collisions occurred late at night. There were five serious collisions along Cross Deep (approaching Twickenham town centre), with two involving pedestrians. Serious collisions around Richmond town centre are clustered

along Sheen Road, and include two collisions involving buses, two with pedestrians and two involving cyclists (including one pedestrian/cyclist collision). Along the South Circular there were two pedestrian KSI collisions in close proximity, and other KSI collisions along this stretch included both cyclists and motorcyclists.

Advancements in vehicle technology, such as automatic braking and detection monitors, are expected to reduce the chances of collisions occurring in the longer term. Local regulations, such as the introduction of the Direct Vision Standard, will help to improve visibility of pedestrians and cyclists to the drivers of HGVs. TfL's Bus Safety Standard will help reduce collision risk and reduce the severity of collisions that do take place. The introduction of Intelligent Speed Assistance (ISA) on new buses will help reinforce local speed limits.

The borough has recently agreed to introduce a borough-wide 20mph speed limit. The plans will see a 20mph speed limit on the entire borough-wide road network, with a small number of exclusions. Studies will be undertaken on routes being considered for exclusion to better understand what changes need to be made to road geometry to self-support a lower speed limit. Implementation of the lower speed limit will be a major focus for the Council over the following years and will include the introduction of signing as well as traffic calming measures. The lower speed limit is expected to reduce the number and severity of collisions and create an environment more conducive to walking and cycling.

The borough has several ongoing training and education initiatives focused on improving safety and raising awareness amongst different road users. This includes Safe Walking training for Y3 pupils, Junior Road Safety Officers, Junior Citizens and cycle training for both Y5/Y6 children and adults. The borough also works with theatre groups to bring productions to schools covering topics such as distractions, responsible travel behaviour, the impact of idling and information on air quality. The exact productions vary by year.

Crime and fear of crime can be a major factor in determining how people choose to travel. While street crime rates are generally low across the borough, data provided by TfL indicates that the street crime rates are highest in Hampton, Twickenham town centre and scattered locations around Barnes and Mortlake.

Lighting levels, active street frontages and natural surveillance can all play a role in both crime levels and perceptions of crime. The borough has large parks and open spaces offering high quality walking and cycling routes away from traffic, however many of these are unlit and isolated, and some parks close at dusk. This can have a particularly large impact on travel options in winter months and may encourage more people to choose to travel by car.

Borough Objectives

LBRuT supports the Mayor’s ambition for Vision Zero and will support the implementation of the Vision Zero Action Plan. Figure 9 shows the observed and target trajectory collision figures which will be adopted by the borough.

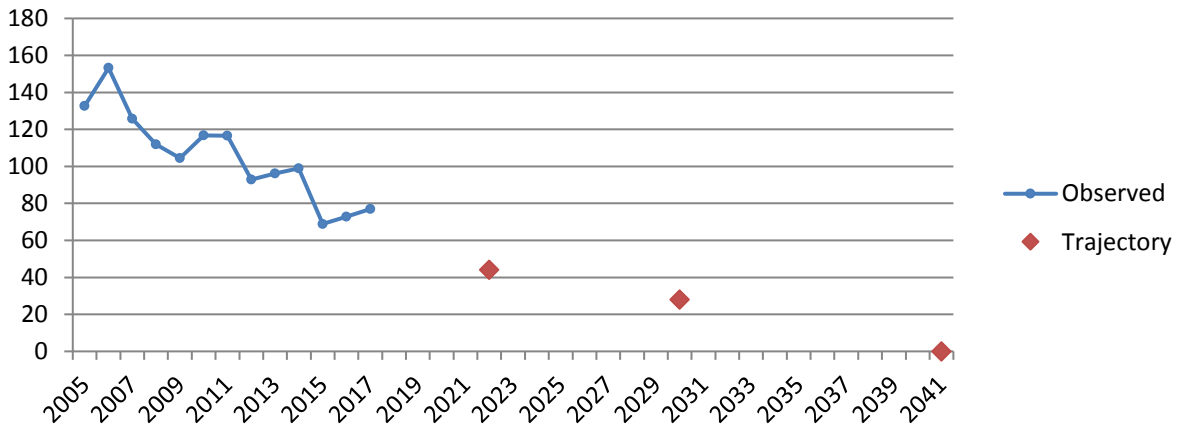


Figure 9: Observed and target KSI collision figures (Source: TfL)

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 several impacts on the data that is available to TfL, and the London boroughs in the ACCSTATS database for collision investigation.

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

TfL commissioned the Transport Research Laboratory (TRL) to undertake a back-casting exercise to enable pre-November 2016 data to be compared with post-November 2016 data. These initial back cast estimates include the number of people 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.

The key safety objectives for the borough to ensure we achieve Vision Zero will be:

- Reducing vehicle speeds through the introduction of a 20mph speed limit on local roads, and by supporting TfL in the introduction of a 20mph speed limit on portions of the TLRN within the borough
- Regularly assessing and addressing collision hotspots through infrastructure improvements, including junction design. This will include using a road danger reduction approach to design, completing Road Safety Audits and formal evaluation of schemes using the Traffic Accident Diary System (TADS)
- Seek to minimise the impact of level crossings on pedestrians and cyclists, either through the introduction of bridges or development and promotion of alternative routes
- Working with residents and cycling groups to gather additional information on 'near misses' and locations with perceived safety issues so that improvements can be made
- Empowering residents and local employees with the skills they need so they can make safe decisions while travelling, including working with schools and offering cycle and motorcycle training
- Promote a work-related road risk policy to address borough fleets, and encourage the uptake of emerging technologies such as ISA and automatic braking

The council will address crime and fear of crime through adoption of the following objectives:

- Undertake area-wide studies to identify and assess key walking and cycling routes, including to and from town centres, schools, bus stops and stations, using the Healthy Streets Approach, starting in Hampton and Fulwell in 19/20, where street crime rates are currently higher than other parts of the borough. These projects will focus on improving Healthy Streets scores, inclusive of lighting and surveillance
- Assessment of lighting levels through parks and other open spaces, and either introduce environmentally lighting or ensure an alternative 'lit' route is available
- Incorporating the principles of hostile vehicle mitigation into roadway and public realm improvements, in a way that supports the Healthy Streets Approach
- Supporting TfL, the Metropolitan Police and other transport policing agencies in the tackling of 'high-harm' crimes, and working to protect vulnerable adults and children using the transport network, including rough sleepers

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

Challenges and opportunities

Reducing the dominance of streets and public spaces by motorised traffic will create a pleasant environment for walking, cycling and greater use of public transport. This requires taking a whole street approach – looking at on-street car parking, freight and servicing activity and analysis of the types of trips that are being undertaken. The key focus of this objective is to increase the efficiency with which our limited road space operates through a reduction in vehicle use.

The MTS objectives of reducing both the numbers of cars and the mileage they travel will be a challenge for the borough. LBRuT has relatively high car ownership levels and car usage levels, although these are comparable to the average for outer London. There are no plans for major improvements to public transport in the borough, and while walking and cycling levels are high and expected to increase, there is seasonal variability in these modes which means many residents will wish to keep their cars for use in times of inclement weather.

Car ownership levels in the borough have been increasing since at least 2001, with a small drop of 400 vehicles between 2010 and 2012 before increasing again for the following five years. Trends in car ownership in the borough are shown in Figure 10, alongside the suggested target trajectory for car ownership as determined by TfL and the trajectory that has been adopted.

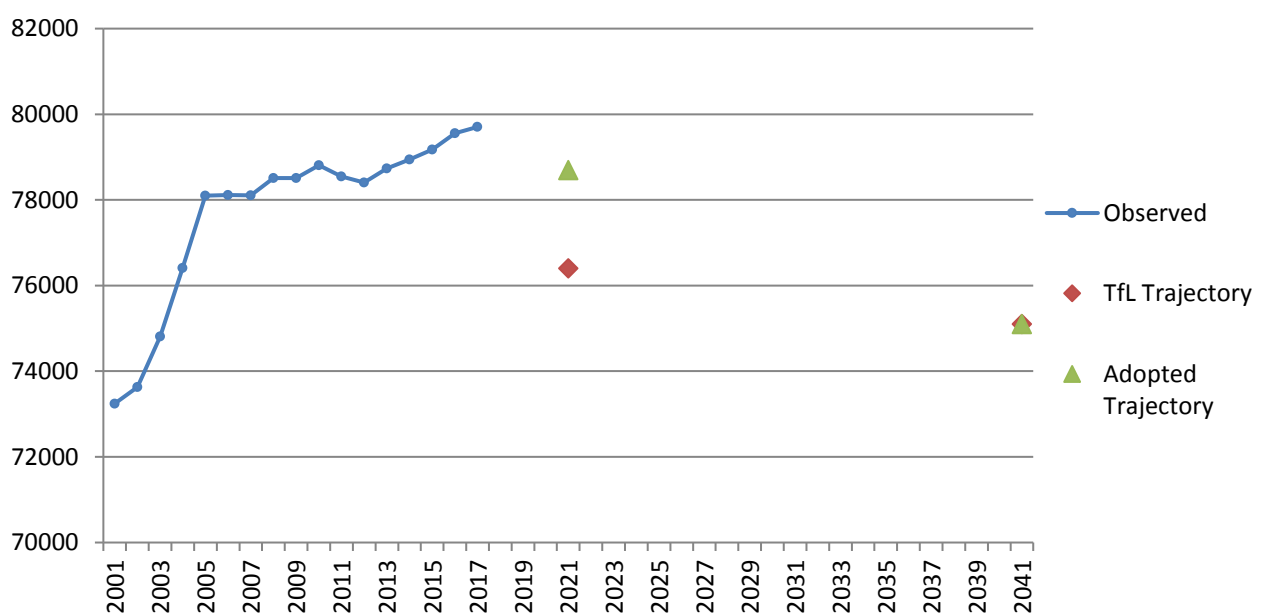


Figure 10: Car ownership figures and proposed trajectory (Source: TfL)

While the MTS calls for a decrease in the number of cars registered to residents of over 3,000 vehicles in the borough by 2021 (from 79,533 in 2016 to 76,400), achieving this milestone in the absence of any major transport investment in the borough is unlikely. This suggested target is out of step with both existing trends and the trajectory to 2041. The target reduction to 75,100 vehicles by 2041 is considered achievable over the longer term, and in the short term the borough is adopting a target of 78,700 by 2021, which would show a steady decrease in car ownership in the borough over 25 years.

As previously noted, car ownership is currently approximately 1.06 cars per household, and achieving a reduction in total car registrations by borough residents while also increasing the number of households in the borough will require ownership rates amongst residents of new households to be much lower, and existing households will also need to relinquish their cars.

Lower car ownership for new households can be achieved by focusing on car-free and car-lite developments in areas of the borough with higher levels of public transport accessibility and ensuring that the London Plan's car parking standards are applied at all new developments.

The borough's CPZs aim to influence car ownership levels through pricing. Parking permits are priced to discourage ownership of more than one vehicle, with the second resident permit costing 50% more than the first, and the third costing 50% more than the second. Parking permits are currently free for the least polluting vehicles, and the borough is planning to introduce a diesel surcharge to further support the adoption of cleaner vehicles. As such, CPZs are a key mechanism for the borough to influence the number and type of vehicles owned by residents.

Annual vehicle mileage in the borough has either decreased or remained static in recent years. While car ownership levels are reflective only of those living in the borough, vehicle mileage encompasses all activity within the borough, including private trips, taxis and private hire and deliveries and servicing. The total annual vehicle kilometres travelled on roads in the borough is shown in Figure 11.

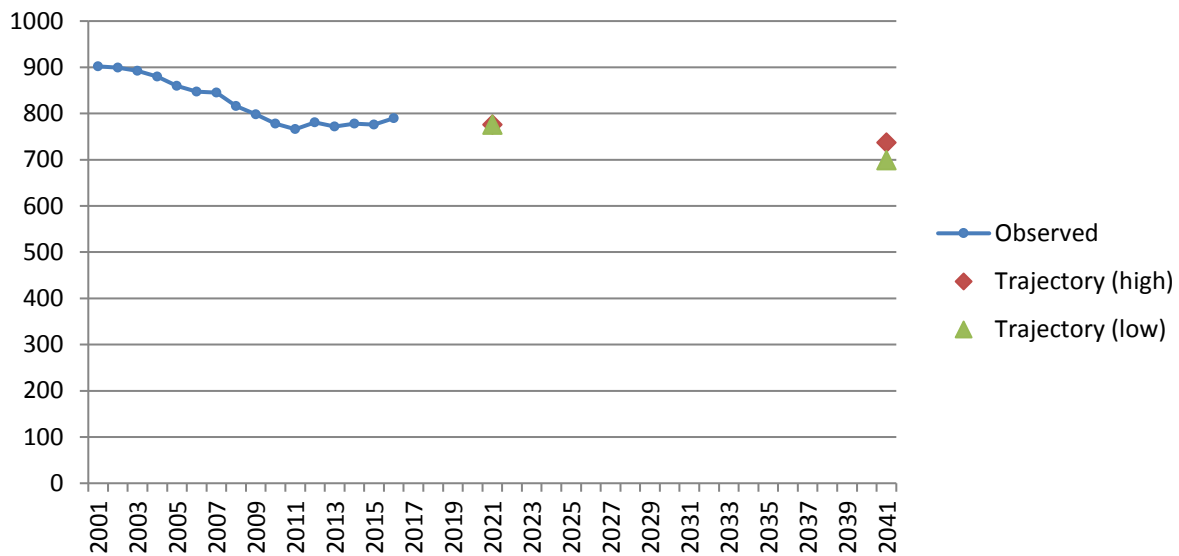


Figure 11: Annual vehicle kilometres (millions) (Source: TfL)

TfL’s short-term trajectory is for vehicle kilometres to remain static through 2021, and the long-term aim is for a 5 to 10% decrease in total vehicle kilometres by 2041. Expected population growth in LBRuT and neighbouring boroughs means this is an even bigger reduction in real terms, however current trends in vehicle usage indicates that this is achievable.

The borough will be introducing additional CPZs and reviewing the operations of existing CPZs. The five-year aim is to roughly double the coverage of CPZs from one-third to up to two-thirds of the borough, with the exact number dependent on resident consultation. Introducing CPZs discourages vehicle trips by limiting access to on-street car parking through restrictions and/or charging.

There is limited information available on freight and servicing movements and activity within the borough. Much of the town centre servicing takes place on-street, often within designated loading bays but sometimes interfering with other traffic. There remains scope to increase our understanding of freight activity within the borough, including origins and destinations of trips, types of trips and the relative freight trip generation of different locations.

The TLRN routes carry large amounts of traffic within the borough and are often subject to delays due to congestion. The borough will work with TfL on any proposals for these routes.

Borough Objectives

The borough will manage vehicle traffic by focusing on identified trip types. In the short term, additional information gathering and assessment will also take place, with the findings used to develop additional projects and programmes in coming years.

The principle objectives for managing vehicle traffic in the borough will be:

- Improve access to town centres, schools and other major trip attractors by space-efficient modes (namely walking, cycling and public transport), ensuring they are effective, reliable and attractive
- Introduce filtered permeability to reduce rat-running and improve conditions for walking and cycling
- Continue to work with schools on developing and implementing their travel plans, focusing on reducing travel by car, with additional support through the introduction of Healthy Routes to Schools and School Streets
- Work with major employers in the borough to develop and implement workplace travel plans
- The wider implementation of CPZs in the borough, expanding the current coverage from one-third of the borough in 2018 to one half to two-thirds within 5 years, and on-going review of the operations of existing CPZs
- Ensuring that CPZs are in place surrounding all major developments to help mitigate the potential adverse impact on the surrounding area by discouraging residents from owning a car which is parked in neighbouring streets, and excluding residents of new developments from being able to apply for on-street parking permits
- Application of the car and cycle parking standards within the Mayor's London Plan and supporting car-free and car-lite developments within the borough, thereby limiting the number of cars that can be owned by new residents
- Supporting the provision of car club bays and vehicles on-street and within new developments, to reduce reliance on private vehicles, and the introduction of new bays will be considered as part of new CPZs
- Increase the Council's knowledge of local freight and servicing activity, including kerbside activity, with the long term aim of developing a freight strategy containing a range of initiatives (such as re-timing town centre deliveries, micro-consolidation and support for mode shift to cycle freight) to:
 - Reduce the total amount of freight traffic in the borough
 - Reduce the impact of freight activity along major roads and in town centres
 - Reduce the environmental impact of freight activity within the borough, with a focus on town centres
 - Reduce the number of personal deliveries in residential areas

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

Challenges and opportunities

Poor air quality is estimated to be responsible for the premature deaths of more than 9,000 Londoners every year. Road transport is a major source of emissions within the borough, with air quality generally worst near busy roads. TfL have set targets for reducing four types of emissions correlated to road transport – CO₂, NO_x (a major contributor to NO₂), PM₁₀ and PM_{2.5}.

NO₂ levels (London Atmospheric Emissions Inventory 2013) and Air Quality Focus Areas for the borough are shown in Figure 12. Increased levels of NO₂ can increase the likelihood of respiratory problems and can have significant impacts on people with asthma. Diesel is the most significant source of NO_x emissions.

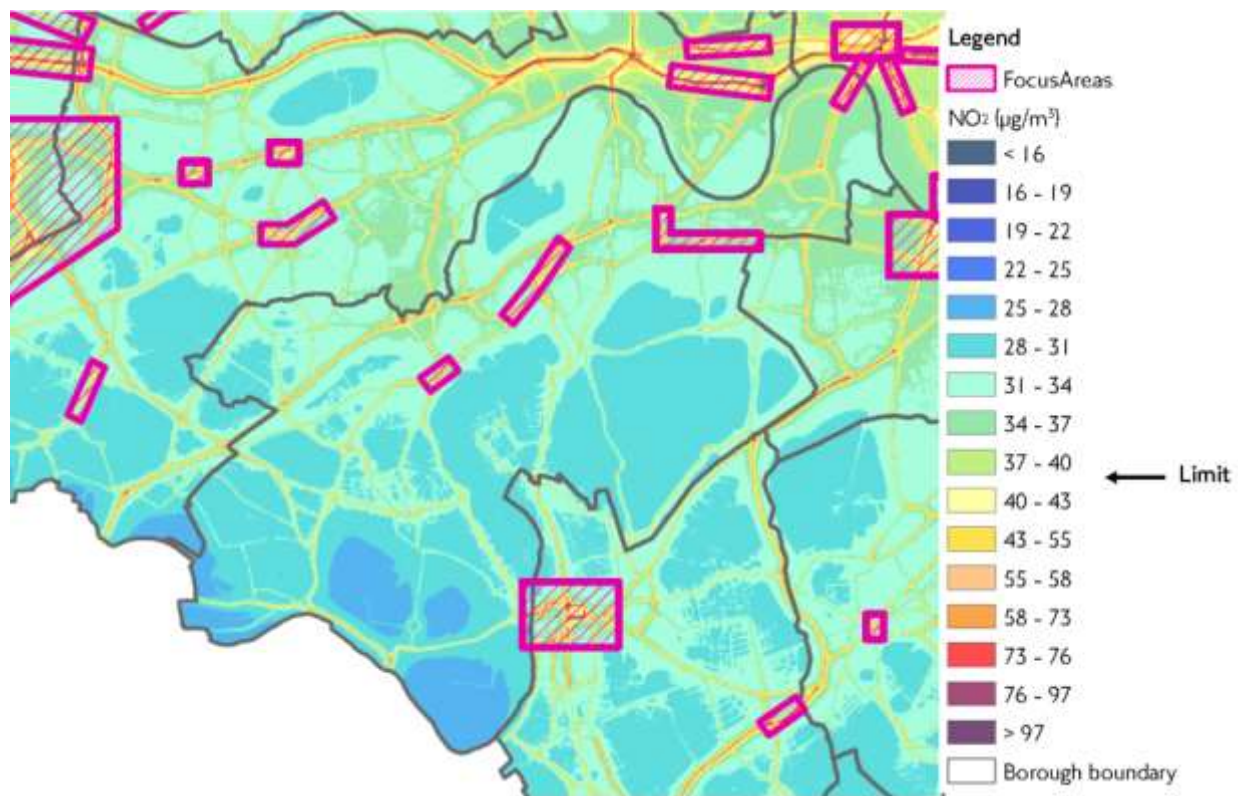


Figure 12. NO₂ Focus Areas LAEI 2013. Source: GLA

The areas with the highest levels of NO₂ are concentrated along the TLRN - the A316 Chertsey Road, A205 South Circular and the A3 on the south east boundary of the borough. Amongst local roads, Castelnau, the A308 Hampton Court Road and Twickenham and Richmond town centres have the highest levels of NO₂. The best opportunity for reducing NO_x (and NO₂) is to focus on reducing the number of

vehicles (particularly diesel vehicles) using these roads and ensuring that remaining vehicles are low and zero emission.

The borough contains four Air Quality Focus Areas – defined as areas with both high levels of NO_x and high human exposure – in Twickenham town centre (King Street), in Richmond town centre from Richmond Bridge to Richmond Circus, and along the South Circular in East Sheen, from Chalker’s Corner to the borough boundary with Wandsworth. The fourth is cross-boundary at Hammersmith Bridge, extending down Castelnau to the junction with Lonsdale Road in the south and north into Hammersmith.

Particulate matter refers to microscopic matter suspended in the air. PM₁₀ refers to inhalable coarse particles between 2.5 and 10 micrometres in diameter, and PM_{2.5} refers to fine particulates with a diameter of 2.5 micrometres or less. Inhalation of particulate matter can have a wide range of effects on human health. Tyre, brake wear and auxiliary engine emissions are all sources of particulate matter. A dramatic reduction in particulate matter will only be achieved through mode shift away from the private car and the widespread adoption of new technologies such as regenerative braking.

Air quality outside of schools is of concern, given the potential impact of poor air quality on children. The Mayor’s school air quality audit programme has looked at 50 primary schools across London with an aim of making recommendations to reduce emissions and exposure. The audit programme has included two schools in LBRuT, both located along the TLRN – East Sheen Primary School and St Stephen’s CofE Primary School. The Council is already taking forward these recommendations and will include the introduction of a green wall and a School Street at St Stephen’s. TfL are taking a forward a project to improve facilities for pedestrians and cyclists along the A205 adjacent to East Sheen Primary School.

Outside of the audit programme, the Council regularly liaises with all schools in the borough to encourage the adoption of travel plans, provide education and training inclusive of information on idling and air quality and the development of engineering solutions such as School Streets.

Reducing engine idling has immediate benefits on air quality and is of particular concern outside of schools during pick-up and drop-off, as well as in town centres. The Council is launching an anti-idling programme in March 2019 with enforcement officers dedicating an hour a day to issuing fines for idling. The programme includes the introduction of two new enforcement officers, and all enforcement officers have been issued high-viz vests with ‘no idling’ printed on the back. The Council is working

to develop additional measures to raise awareness of the harm of vehicle idling and to encourage more people to change their behaviour.

Buses are a major source of pollutants along borough roads, particularly in Richmond and Twickenham town centres. TfL have set a target for the whole TfL bus fleet to be emit zero exhaust emissions by 2037, with all new double-deck buses in Central London to be hybrid by 2019 and all single-deck buses to emit zero exhaust emissions by 2020. No equivalent target has been set for outer London (only that 85% of double deck buses are to be hybrid, electric or hydrogen by 2025), which implies that dirtier double-deck buses will be displaced to outer London after 2019. This is considered unacceptable and the Council urges TfL to set a target for all buses operating in London to be hybrid, electric or hydrogen by 2025.

The borough has an above-average take-up of electric vehicle by residents. Uptake is being supported through the installation of electric vehicle charging points across the borough. This programme will continue as electric vehicle ownership levels are expected to continue to increase.

As noted, resident car parking permits within CPZs are currently free for the cleanest vehicles, and the borough will be examining the introduction of a diesel surcharge to further encourage residents to choose cleaner vehicles.

The expansion of ULEZ to the A205 South Circular will directly impact on the north east of the borough. While the South Circular itself is not included within the zone, the road is a major source of NO₂ and PM emissions. Vehicles entering the ULEZ will need to be Euro VI compliant or pay a fine. While the expansion of ULEZ is welcome, there is a risk that non-compliant vehicles will be diverted to the South Circular to avoid paying the charge, thus making local air quality worse. There are no current plans to expand the ULEZ to cover all of outer London, which appears to be an oversight in TfL's long-term plans.

The borough has a high quality built and natural environment. The borough's bio-diversity is also of huge importance both locally, nationally and internationally. The Council seeks to protect and improve this heritage while ensuring as many residents and visitors to the borough are able to benefit from its parks, open spaces and heritage sites.

Borough Objectives

The borough has set the following objectives for reducing the impact of transport on air quality, with the aim of achieving the targets for reductions in CO₂, NO_x, PM₁₀ and PM_{2.5} emissions in the borough as proposed by TfL:

- To work closely with TfL and local bus operators to bring forward the introduction of low and zero emission buses within the borough, with a focus on reducing the air quality impact of buses in Twickenham and Richmond town centres and other areas with high levels of human exposure
- LBRuT will support the expansion of the ULEZ to the A205 South Circular in 2021 by working closely with TfL and neighbouring boroughs to introduce complementary measures within the zone and in adjacent areas
- Lobby TfL to consider expanding the ULEZ to cover all of outer London, including all of LBRuT
- The borough will continue to expand its electric vehicle charging infrastructure for residential use and rapid charging to support ZEC taxis and commercial vehicles, with a focus on minimising the impact on space on pavements for pedestrians. The Council is seeking additional funding through the Mayor's Air Quality Fund to accelerate the transition to ZEC taxis and delivery vehicles in Richmond town centre
- Use car parking permit charges as a means of discouraging residents from owning diesel and other high-polluting vehicles through the introduction of a diesel surcharge and consider additional means of encouraging only the cleanest vehicles to park on borough roads and Council-owned car parks
- Take a firm stance on engine idling by issuing fines for idling and actively working with schools to raise awareness and change parent behaviour
- Take forward the recommendations of the Mayor's school air quality audit, taking advantage of the £10,000 of match funding per school offered by the Mayor
- Working with schools to encourage uptake of school travel plans, raise awareness of the impacts of car travel through education and theatre productions, reduce exposure to poor air quality through the introduction of School Streets (where appropriate and supported by the school), the introduction of air filters (based on the recommendations of the current London-wide trial) and building of green screens and green walls
- Work closely with TfL to support their planned improvements to the A205 near East Sheen Primary School
- Focus on reducing the environmental impact of the Council vehicle fleet, and of those under contract with the Council, through the adoption of stricter vehicle standards
- Supporting a decrease in car usage and encouraging mode shift to walking, cycling and public transport, as discussed elsewhere in this document, including an area-wide scheme in Richmond town-centre focused on encouraging more walking and cycling and looking at reducing the levels of through-traffic

The Council will seek to protect enhance the borough's natural and built environment by:

- Ensuring that transport schemes protect existing green infrastructure and provide new green infrastructure where possible, including protecting and planting street trees as part of the Healthy Streets Approach
- Ensuring transport schemes have no adverse impact on bio-diversity by undertaking ecological assessments where recommended
- Maximising opportunities to protect, promote and enhance the borough's built and historic environment and sites of cultural importance that may be affected by transport development. This will include working closely with the Council's Park's department, Royal Parks, Historic Royal Palaces, Historic England, Kew Royal Botanic Gardens, Thames Landscape Strategy and others when projects may affect heritage sites
- Incorporate Sustainable Drainages Systems (SuDS) into transport scheme designs

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

Challenges and opportunities

The public transport mode share in the borough is 21.7%, which is comparable to many other outer London boroughs, particularly Kingston (21.6%). This baseline is reflective of wider public transport accessibility in the borough, with many areas reliant on buses and low-frequency train services.

TfL has set a target for public transport use to increase in the borough from 105,000 trips per day by borough residents (2013/14 to 2015/16 average) to 116,000 by 2021 and 160,000 by 2041. Achieving either the interim and long-term targets is seen as extremely challenging and would be dependent on TfL and local rail operators drastically improving public transport provision within the borough.

The number of public transport trips per day by borough residents has remained relatively static since 2011/12. The borough has seen a 1% increase in bus capacity utilisation between 2014/15 and 2017/18, whereas nearly all other boroughs have seen a decrease over this same period (including a 3% decrease in Hounslow and 2% decrease in Kingston). This is again indicative of the borough's high reliance on the bus network.

Bus frequencies along roads in the borough are shown in Figure 13. Richmond town centre has the most buses with more than one bus per minute. Frequencies are also high along Castelnau and through Twickenham town centre, with between 45 and 60 buses per hour. The corridor running from Richmond to Hampton Hill via Twickenham is recognised in the MTS as a busy bus link, however the frequency of buses from Fulwell station to Hampton Hill is relatively low.

While Richmond town centre is rightly illustrated as an important transport interchange within the borough, Figure 11 illustrates that services connecting to Kingston, classified as a Metropolitan town centre in the London Plan, have relatively low frequencies.

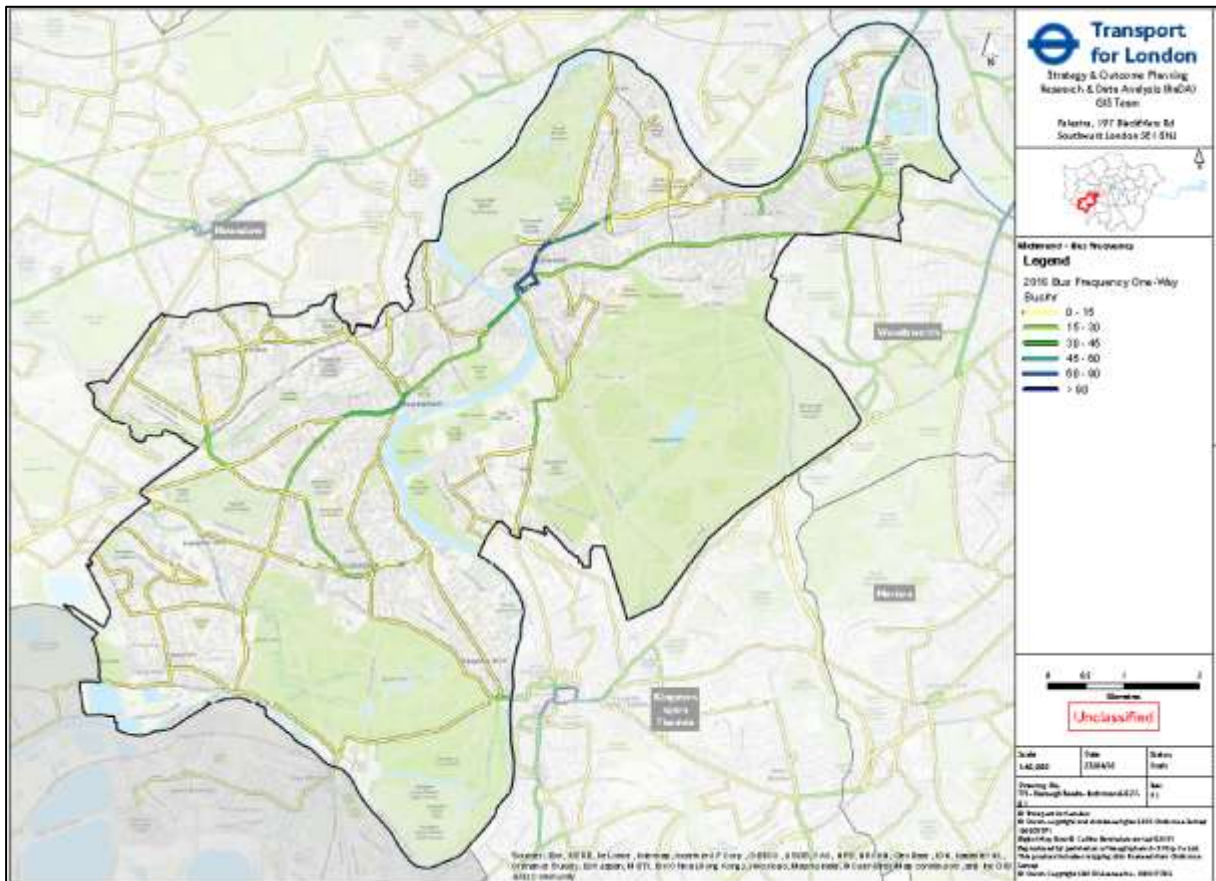


Figure 13: Bus frequencies by road (Source: TfL)

There are numerous bus lanes in operation, primarily focused around Twickenham town centre, Richmond town centre and Castelnau. Most are operational only during certain times of time, except on Castelnau and Heath Road in Twickenham, which are operational all day. Bus lanes ensure travel times are maintained during peak travel times and offers a time advantage to bus users over the private car. Bus lanes are also often a valuable resource to cyclists. Regularly reviewing both the location

and hours of operation of bus lanes ensures they remain a valuable resource to bus users.

Figure 14 shows that Richmond town centre is the busiest part of the borough for bus boardings, with other busy areas in Barnes, Twickenham and Teddington. There are large numbers of stops in the south and west of the borough with fewer than 50 boardings per day, reflective of fewer services and/ or lower frequencies in these areas.

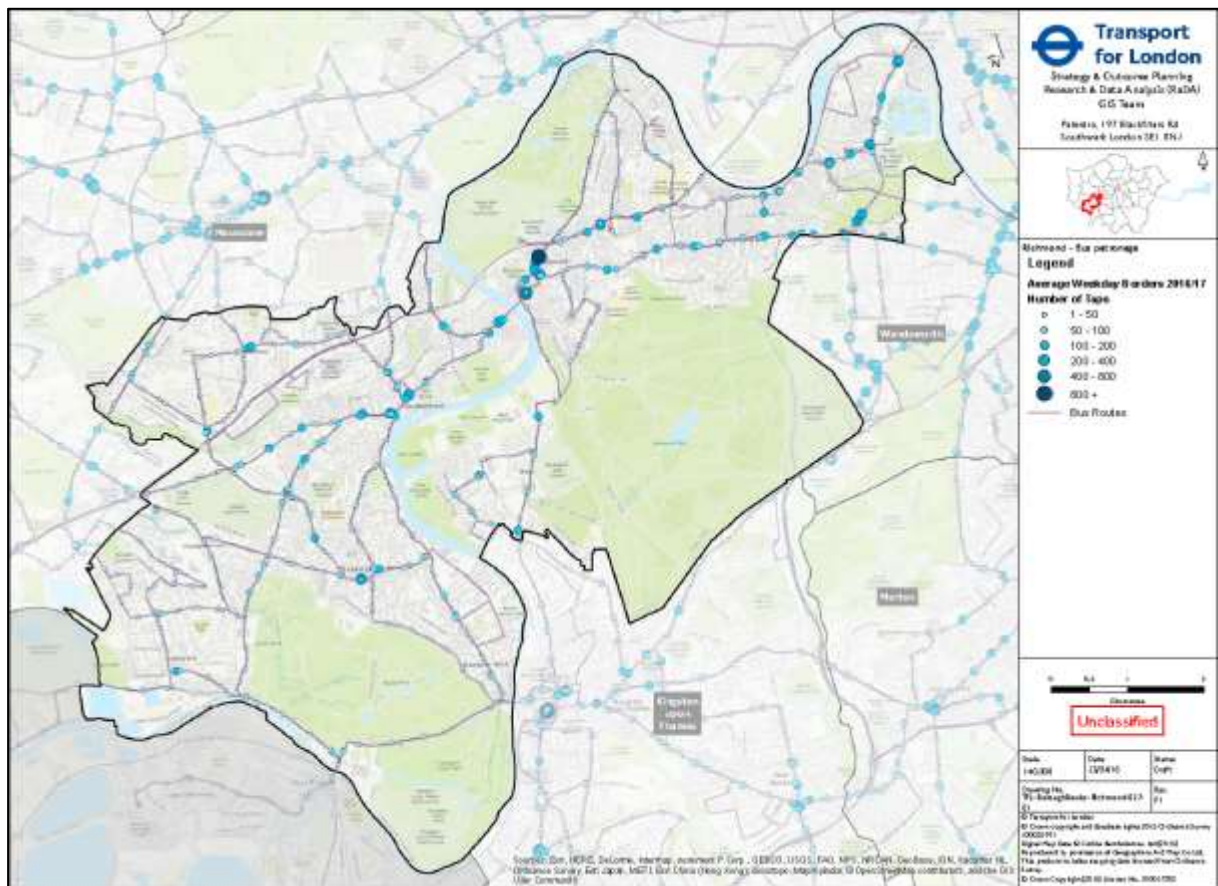


Figure 14: Average weekday bus boardings per stop (Source: TfL)

TfL sets the bus routes and frequencies for all of London. TfL is currently looking at different options for re-shaping the bus network to better match changing patterns of demand. The Council has responded to TfL’s consultation on proposed changes to routes 110, 419, 493, H22 and H37, with strong opposition to any reductions in frequency and reductions in services to West Middlesex Hospital and Manor Circus. The Council feels that the case for bus service reductions in LBRuT is weak and would be weakened further if potential developments go forward along the impacted routes.

The borough would benefit from additional bus routes, and increased frequency on many existing routes. For example, the borough would benefit from increased connectivity from Twickenham to Kington and additional services in parts of the borough with limited access to rail and low PTALs, namely Ham & Petersham, Hampton, Hampton Hill and Whitton. This would increase the attractiveness of public transport for journeys both within the borough and to neighbouring boroughs and help reduce reliance on the car. The Council would be happy to discuss the scope for additional bus provision with TfL.

In the short term, the best opportunity to increase public transport use will be achieved by improving the whole journey experience, which will include improving walking and cycling connectivity to existing bus stops and rail stations. Applying the Healthy Streets Approach to key routes to stations and stops will help improve the attractiveness of these options and ensuring secure cycle parking is available at all stations will improve connectivity.

South Western Railway has been awarded funding to build a cycle superhub at Richmond Station, with spaces for up to 1000 cycles, which is expected to be completed in 2020. This will help to widen the catchment of the station and is expected to have a positive impact on ridership. The Council is working to improve cycle connectivity to the station through the introduction of contra-flow cycling in Richmond town centre, to be completed in advance of the opening of the superhub.

Neighbouring boroughs will benefit from the opening of the Elizabeth Line and the Northern Line extension, which will serve as boosts to local ridership, however the opportunity for interchange with these new services will be limited and the local impact is expected to be muted.

In the long term, concentrating new developments in areas with high levels of public transport accessibility and the introduction of Crossrail 2 in the 2030s is expected to increase ridership, however this impact will be limited to a small number of stations in the south of the borough.

Devolution of suburban services could potentially bring more frequent and reliable trains to the local area. Devolution and metroisation of local services would be broadly supported, especially where it resulted in increased frequencies and improved reliability.

Technology has the potential to unlock new types of public transport. Demand Responsive Transport (DRT) is a relatively unexplored option for improving access to public transport in outer London. While the introduction of DRT, possibly operating on fixed routes within the borough, could help to improve public transport ridership, the

wider implications on walking and cycling levels have not been assessed, nor have funding mechanisms.

Borough Objectives

The borough will work closely with TfL, Network Rail and South Western Railway to improve public transport across the borough, including the introduction of Crossrail 2 in the 2030s.

The borough will work in partnership with TfL to regularly review bus operations within the borough, with the aim of ensuring that the bus is a viable alternative to the car for as many trips as possible. This will include opposing any reductions in bus frequencies in the borough.

The borough will improve connectivity to bus stops and rail stations by investing in walking and cycling routes and continuing to work with residents and employers to identify gaps in accessibility. This will include:

- Taking an area-based approach to identifying and making improvements, starting in 2019 with Hampton and Hampton Hill and then moving to Whitton in 2021/22. This will focus on assessing routes against the Healthy Streets Indicators and reviewing lighting levels to reduce the fear of crime and ensure these remain attractive options in the hours of darkness.
- Introducing contra-flow cycling in Richmond town centre to improve cycle connectivity to the cycle superhub at Richmond Station, by spring 2020
- Ensuring there is secure and well-located cycle parking at stations (with enough capacity to meet existing and forecasted demand)
- Improve cycle accessibility to bus stops in areas without access to rail, for example in Ham, with an aim of encouraging cycle to bus trips.

The borough will assess proposals for the introduction of demand-responsive transport on a case-by-case basis.

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

Challenges and opportunities

A safe and accessible public transport network is an imperative. An improved step-free network will enable more residents, employees and visitors to the borough to travel confidently on the public transport network.

The Mayor's Transport Strategy includes the aim of reducing the travel time difference between the total public transport network and the step-free network. On a

local level this will mean improving accessibility to mainline train stations. Step-free access is currently available in Mortlake, Richmond, Strawberry Hill, Whitton and Hampton stations. Twickenham station is currently undergoing redevelopment and will be fully accessible upon completion of the scheme (expected in 2020). Teddington station is being improved as part of the Access for All programme and is due for completion in 2020. Barnes will be included within the next tranche of Access for All funding.

The remaining stations in the borough with limited access are Hampton Wick, Fulwell, St Margarets, North Sheen, Kew Gardens and Barnes Bridge. While access to both platforms at Kew Gardens is step-free, access between platforms is not.

Bus stop accessibility is reviewed regularly by LBRuT and improvements are made on an ongoing basis.

Borough Objectives

The borough supports the reduction of the travel time difference between using the full transport network and the step free network. The target set for LBRuT is to reduce the journey time difference from 8 minutes to 3 minutes by 2041.

To achieve this, the borough will support Network Rail and local train operators to improve step free access to stations, focusing on applications to the Access for All programme. The borough has recently submitted applications for Hampton Wick and Kew Gardens to be included within the next tranche of stations.

The borough will also work to improve routes to local bus stops and rail stations by walking and cycling, ensuring they are fully accessible.

The borough will improve bus stop accessibility, with an aim of all bus stops being accessible by 2022.

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

Challenges and opportunities

Making the public transport network easier and more pleasant to use will enable more customers to travel reliably and comfortably without needing a car. This can best be provided by ensuring access to bus and rail services is safe and easy, and by ensuring that buses can offer journey times competitive with the private car.

In 2015, the average bus speed in the borough was 11.0 mph, comparable with other Outer London boroughs. Improving local bus speeds will help to encourage mode

shift away from the car by offering more competitive journey times and can be achieved either through bus priority or making general alterations to the roadway. Kerbside loading and unloading can also have a negative impact on bus speeds, with buses often finding it difficult to pass.

Figure 15 shows the average bus speeds across the network within the borough.

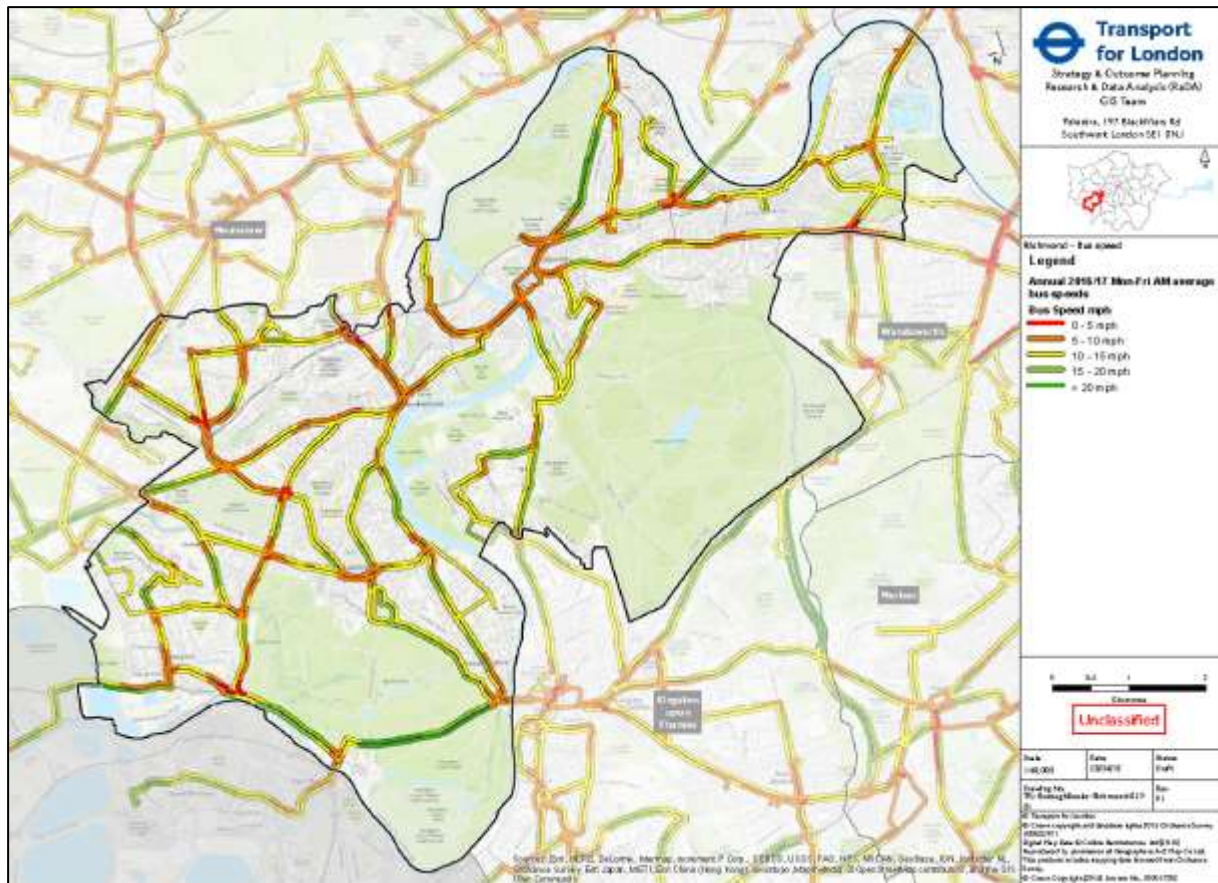


Figure 15: Average bus speeds (Source: TfL)

Junctions where bus speeds are below 5mph include:

- Church Street/A308
- A311/Sixth Cross Road/South Road
- Hospital Bridge Road/Powder Mill Lane
- A205/Rocks Lane
- Whitton Road/Rugby Road

With the exception of Church Street/A308, all of these are signalised junctions with bus speeds dropping as a result of standard delays and congestion. The junction of Church Street with the A308 is a priority junction with delays caused by two traffic streams coming together to travel towards Hampton Court Roundabout.

Lower bus speeds (5-10mph) are common in many locations throughout the borough, including Richmond, Twickenham and Teddington town centres, as well as locations where buses are crossing the A316 in Whitton and Twickenham. These reductions in speed are consistent with congestion as well as greater numbers of people boarding and alighting in these locations, which results in longer pauses at bus stops.

As noted previously, there are several bus lanes within the borough, most of which are operational only during peak hours. These are focused around Twickenham town centre, Richmond town centre and Castelnau.

Borough Objectives

Every year the borough looks to address collision hotspots by making changes to the road layout and junction operations in response to collision patterns. Improving bus speeds and journey time reliability is, and will continue to be, a key consideration when making changes to the road layout. In 2019/20, we will be designing and/or building schemes helping with bus journey time reliability on the A308 (from Hampton Court Roundabout up to and inclusive of the junction to Church Road) and Cross Deep (inclusive of the junction with Waldegrave Road).

Bus priority can play a pivotal role in improving bus speeds. The borough has an on-going programme aimed at improving journey times and this programme will continue, subject to available funding.

The operational hours of the existing bus lanes will be regularly reviewed to ensure they are providing an optimal service, and the introduction of new bus lanes will be considered as part of major schemes, particularly around new developments.

Data gathering will improve understanding of kerbside behaviour and will identify regular conflict points between buses and freight vehicles. These in turn can be addressed through revisions to kerbside layouts and better enforcement. This will be addressed as part of the freight strategy.

While reducing the speeds on borough roads to 20mph may negatively impact on bus speeds on some routes, it is expected that this impact will be minimal.

Consideration will also be given to bus speeds as part of walking and cycling schemes.

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

Challenges and opportunities

The potential for growth is limited compared to many other parts of London. Most new developments are focused on small brownfield sites, with a small number of larger sites identified within the Local Plan. Expected housing growth levels for the borough are the lowest of any outer London borough with an identified ten-year capacity of 8,110 new homes, with 6,340 of these expected to be on small sites of less than 0.25ha. This target is a considerable increase over the previous target, which was for 3,150 homes to be built between 2015 and 2025.

Within the borough, the highest housing targets have been set for Richmond and Twickenham, the two largest town centres, which also have the highest levels of public transport accessibility. Having new housing concentrated in these highly accessible areas will ensure the borough is able to support car-free and car-lite development, where it can be demonstrated that there would be no unacceptable adverse impact on the surrounding area. New CPZs will be introduced around major development sites if there is not one currently in operation.

Business development is expected to be concentrated in existing town centres, particularly in Richmond. This pattern of growth will ensure that new employment opportunities are in areas with high levels of public transport accessibility.

There are no Growth Areas or Opportunity Areas within the borough, or any other areas that would be expected to deliver high rates of development.

Borough Objectives

LBRuT will support employment growth and higher density developments in areas of high public transport accessibility. This will be achieved by ensuring that larger developments are accessible by means other than the private car, and contributions to improving walking, cycling and public transport will also be sought from major planning applications to help mitigate the impact on the surrounding area.

Smaller developments are expected to be concentrated near rail stations, key bus corridors and the strategic cycle network.

The Local Plan has adopted the London Plan car and cycle parking standards, and these will be applied to all new proposed developments in the borough. Planning applications for new developments above set thresholds will be required to include a comprehensive Transport Assessment and Travel Plan, along with information on

deliveries and servicing. Car-free and car-lite development will be supported in appropriate locations. Car club provision is also supported in new developments in lieu of private car parking, where appropriate.

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

Challenges and opportunities

Transport investment can be key in opening up new areas for development, particularly where improvements are made to walking, cycling and public transport.

While major new infrastructure is expected to be delivered in neighbouring boroughs in the new few years, namely the Elizabeth Line and the northern line extension, there are no major transport schemes planned for LBRuT in the next ten years.

Devolution and metroisation of the rail network could potentially see additional capacity unlocked throughout the borough through increases in frequencies, and improvements to the number of bus routes and frequency of services could also help to increase the PTAL of different locations within the borough away from the rail network. Improvements in PTAL would help support the borough's ambition to support car-free and car-lite developments.

The arrival of Crossrail 2 in the 2030s could potentially open the areas around stations in the south of the borough to higher density developments, but this will be dependent on the scale of changes to be introduced (currently predicted to be two additional trains per hour at most impacted stations).

Borough Objectives

The Council will also support increased public transport provision within the borough, including the introduction of new bus routes, increased frequencies on existing bus routes and the introduction of metro style rail services.

The Council will work with TfL on the development of Crossrail 2 options within the borough, with a focus on understanding potential increases in public transport accessibility and the impact this could have on rates of development within the surrounding areas.

Other Mayoral Strategies

The following Mayoral Strategies have been reviewed as part of the development of this plan:

- London Plan (draft)
- Economic Development Strategy for London (draft)
- London Environment Strategy
- London Housing Strategy
- Health Inequalities Strategy (draft)
- Culture Strategy (draft)
- A Tourism Vision for London

The London Plan is the Mayor's spatial development strategy. It sets the overall framework for the development of London over the next 20-25 years. The London Plan is closely linked to the Mayor's Transport Strategy and as such is reflective of the policies that have been considered in the development of this document.

The London Plan identifies several types of areas that require special consideration for planning. Of these, there are no Opportunity Areas, Growth Corridors or Strategic Areas for Regeneration within LBRuT. The borough does contain three Air Quality Focus Areas – defined as areas with both high levels of NO_x and high human exposure – in Twickenham Town Centre, along Richmond Bridge and the South Circular in East Sheen. A large portion of the borough falls within a Thames Policy Area, and Richmond town centre is highlighted as an area for potentially high levels of commercial growth. The area classifications will help guide the implementation of projects within this LIP.

LBRuT defers to the London Plan standards for car parking and cycle parking for new developments. The car parking standards introduced in the new plan are much lower than previously, with a greater link to public transport accessibility levels. The borough has been identified as an area where higher standards for cycle parking should apply for some development types, reflective of the higher local cycling levels.

The Mayor's Economic Development Strategy for London stresses the importance of ensuring there is adequate transport capacity to cater for growth in the Capital. The strategy also further emphasis the need for growth to be sustainable, and reiterates his goal for London to be a zero-carbon city by 2050. The plan includes a commitment of support for high streets and town centres, including improving public transport connections and the public realm, making walking and cycling more appealing.

There is a strong link between transport and the environment, particularly air quality. The London Environment Strategy sets out a plan that will realise the potential of London's environment to support good health and quality of life and to make the city a better place to live, work and do business. It emphasises the Healthy Streets Approach as a means of improving air quality through a reduction in car trips, and includes details on the wider benefits of the introduction of ULEZ as a means of encouraging a shift to zero emission vehicles. It calls on the boroughs to use their powers to help improve local air quality. This LIP supports this strategy through its commitment to using the Healthy Streets Approach to encourage mode shift to walking and cycling, including an aim to focus on areas with poorer air quality. The borough is committed to improving access to vehicle charging points, enabling the use of more electric vehicles.

The London Environment Strategy also addresses flood risk and climate change. Portions of the Thames towpath are subject to regular flooding during high tides and this is expected to increase in the future. The borough is working with the Thames Landscape Strategy to maintain the usability of routes through the ongoing maintenance of the towpath and through the creation of alternative dry-routes.

The London Housing Strategy sets out the Mayor's approach to addressing the housing crisis, with a focus on building more homes, and ensuring that homes that are built are genuinely affordable. The strategy identifies the importance of transport to support new housing, and states that potential housing benefits should be a key determinant of which transport schemes and projects are supported and funded in the future.

The Health Inequalities Strategy has five aims for improving public health and reducing health inequalities. Two of these aims have close links to transport: healthy places and healthy habits. Creating healthy places includes the objectives to improve air quality and improve streets by using the Healthy Streets Approach. Creating healthy habits encourages increased levels of physical activity amongst children, including through promotion of active travel to school.

The Culture Strategy stresses the link between culture and public space, and urges for consideration of public art as part of public realm improvements. It also urges for consideration to be given on the impact transport projects might have on existing culture/ heritage place and spaces.

Tourism is a key industry within LBRuT, with several major tourist sites within the borough. A Tourism Vision for London encourages making improvements to the pedestrian experience to make neighbourhoods more attractive to visitors as well as locals.

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.

The analysis undertaken for the development of this LIP has been used to shape the Delivery Plan, as well as previous studies that have been undertaken in the borough to understand and address collision hotspots.

The Delivery Plan provides a balance between Healthy Streets and Vision Zero, covering both capital and revenue projects. There are also programmes focused on schools and air quality, however there are strong linkages and overlaps between the programmes.

Over the next three years, reductions in the borough's LIP funding allocation has dictated a strict approach to prioritisation, with the preferred method being to focus on undertaking a smaller number of projects while maintaining a high quality of the finished project. Funding has also been allocated for making small scale improvements in response to Councillor and resident requests.

The introduction of a borough-wide 20mph speed limit in 2019 will be the largest project undertaken in the borough and is supportive of many of the Mayor's Transport Strategy priorities. Once the lower speed limit is in place and strengthened by the infrastructure to ensure the scheme is self-enforcing, it is expected that the number and severity of collisions will fall across the borough and walking and cycling levels are expected to increase as the feeling of vehicle dominance is dampened through lower speeds.

The implementation of Vision Zero will be further supported by projects addressing collision hotspots, training and community safety initiatives. The borough also has a set of 20 speed indicator devices that are regularly rotated across 50 sites.

The Healthy Streets and active travel programme encompasses the previous cycling programme as well as a focus on walking, town centres and access to stations. In addition to a focus on mode shift, this programme focuses on increasing activity levels and improving access to public transport as part of the whole journey approach. The programme incorporates the implementation of additional CPZs in the borough, and the Delivery Plan includes work in Richmond town centre and a study aiming to improve walking and cycling routes in the south west of the borough.

The schools programme encompasses infrastructure improvements, training and engagement. The programme supports the Mayor's Transport Strategy outcomes for modal shift, increased rates of active travel, support for Vision Zero and improved air quality. The borough has an active school travel planning programme in place to work directly with schools and identify the need for engineering improvements, including School Streets.

The air quality programme focuses on the installation of electric vehicle charging points and funding for air quality initiatives across the borough, with a focus on improving air quality in town centres, at schools and nurseries and identified air quality focus areas. This programme is designed to focus on improving air quality and reducing the environmental impact of trips that must be undertaken by vehicles.

Table ST01 details the MTS outcomes addressed by each of the overarching programmes and each of the projects proposed as part of the three-year delivery plan.

ST01 - 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 1:-Active	No 2:- Safe	No 3:-Efficient	No 4:- Clean & Green	No 5:- Connected	No 6:- Accessible	No 7:- Quality	Nos 8 & 9 Sustainable
1	Support of Vision Zero	✓	✓	✓		✓	✓	✓		
1.1	Introduction of borough-wide 20mph	✓	✓	✓		✓				
1.2	Safety schemes to address collision hotspots	✓	✓	✓			✓	✓		
1.3	Safety supporting measures – awareness campaigns, rotation of SIDS, collision investigation	✓	✓	✓						
2	Healthy Streets & active travel	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.1	Cycle training (adults and school children)	✓	✓	✓			✓			

2.2	Healthy Streets fund & strategic cycle route development – allocations for cycle parking, cycle routes, pedestrian improvements and bus stop improvements	✓	✓	✓		✓	✓	✓		
2.3	Car parking & town centre improvements	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.4	Access to stations studies and implementation	✓	✓	✓	✓		✓	✓	✓	✓
3	Working with schools	✓	✓	✓	✓	✓				
3.1	Healthy Routes to Schools (including School Streets)	✓	✓	✓	✓	✓				
3.2	School based programmes – training, safety education, Bikelt, Junior Road Safety Officers, Junior Citizen, etc	✓	✓	✓	✓	✓				
4	Improving air quality					✓				
4.1	Electric vehicle charge points					✓				
4.2	Air quality infrastructure & monitoring (air quality monitoring, green walls, air filters, etc)					✓				
4.3	Air quality revenue (campaigns, awareness, behaviour change, focused on schools and town centres)					✓				

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.

ULEZ expansion

The Ultra-Low Emission Zone (ULEZ) will be introduced in central London in April 2019 and expanded to the North and South Circulars for all vehicles in 2021. The ULEZ will require motorcycles, cars, vans, minibuses, coaches and HGVs to meet minimum emissions standards, or pay a daily charge.

Implications for borough

The South Circular transverses the north east of the borough, and the ULEZ will include parts of Kew, Mortlake and Barnes. The area includes the A316 which includes Chiswick Bridge. The charge will therefore have implications for both local traffic and through traffic.

Complementary works to be carried out by the borough

The expansion of ULEZ will be complemented by a supporting package of works to raise awareness of the changes amongst residents and businesses in the affected area. The installation of electric vehicle charging points is already being concentrated in this area to support the wider uptake of zero emission vehicles.

Quietways

The TfL Business Plan currently includes four Quietway routes within LBRuT. These are Teddington Lock to Richmond Park, Bushy Park to Kingston, Twickenham to Brentford and Twickenham to Richmond. The Bushy Park to Richmond Park route, Quietway 21, has been consulted on and the portion from Teddington Lock to Richmond Park will be implemented imminently.

Implications for borough

The Quietways will form the core of the strategic cycle network within the borough and provides the opportunity for the borough to develop feeder routes.

Complementary works to be carried out by the borough

The Richmond Cycling Strategy includes proposals for feeder routes connecting to the Quietways, based on the Strategic Cycling Analysis carried out by TfL. These routes will be reviewed as part of the development of the Active Travel Strategy. Design of these routes will focus on following the London Cycle Design Standards with the aim of some routes being adopted as part of the strategic cycle network. The Quietways will also be supported through the borough's ongoing cycle training and cycle parking programmes.

A205 Upper Richmond Road - East Sheen

The A205 East Sheen Road Safety and Streetscape Improvement scheme is along the A205 Upper Richmond Road West, from the junction of Priests Bridge Avenue, up to and including the junction of Sheen Lane. It aims to increase the capacity of Sheen Lane junction and improve journey time reliability, improve cycle and pedestrian facilities, reduce collisions and enhance the street environment.

Proposed improvements include a reduced speed limit to 20mph, provision of extended raised tables, conversion of existing zebra and puffin crossings to signal controlled crossings, improvements to streetscape, including side road entry treatments and enhanced footway paving, a gateway entry treatment near the junction of Priests Bridge Avenue, provision of banned right turns at some side roads, alterations to the geometry of Sheen Lane junction, provision of a diagonal crossing facility at Sheen Lane, improvements to the south-eastern corner of the Sheen Lane junction to create a 'pedestrian plaza' centred around the historic war memorial and milestone.

The proposals have been developed to reflect the results of LB Richmond's Village Plan consultation that took place for East Sheen. The current timeframe is to begin construction of the scheme in spring / summer 2020.

Implications for the borough

The A205 is both a strategic roadway and the core of East Sheen town centre. This scheme supports the boroughs wider aims of improving road safety and creating an environment conducive to walking, cycling and public transport use.

Complementary works to be carried out by the borough

The introduction of a lower speed limit along this stretch of the TLRN will be matched with the introduction of a borough-wide 20mph speed limit, providing continuity and reducing the likelihood of rat-running through neighbouring streets. The Council is

also working with East Sheen Primary School, which falls within this stretch of the A205, to implement the recommendations of the Mayor's school air quality audit.

Sources of funding

Table ST02 below identifies potential funding sources for the 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 provided by TfL indicate that the borough will receive £1,455,500.

LBRuT does not currently have any Major Schemes or Liveable Neighbourhoods (although a bid has been submitted for Ham and Petersham for a 2019 start), nor does the borough have any Mayor's Air Quality Fund programmes. The borough has been told not to expect any funding for development of the strategic cycle network beyond the four routes currently in development.

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 the allocation of funding through the borough's Village Planning Fund for improvements to Richmond Town Centre.

Parking revenue is currently used to cover the costs of enforcement and the Freedom Pass, with no additional funding available to complement LIP delivery. As more controlled parking zones are implemented, it is expected that the increased income can be used to support the development of wider parking policy projects and provide an additional source of income to support transport projects.

Development levels are lower in the borough than many other parts of London, and not all major developments result in agreements with substantial components for transport, with agreed improvements instead carried out as part of the site construction or through contributions to strategic CIL. As a result, the sums available from developers via section 106 agreements are minimal. Transport is not currently prioritised for allocation of funds from the strategic CIL pot.

The borough's NCIL funding is allocated through a bidding process to projects led by community groups. The most recent NCIL funding pot is £550,000 and has been awarded to eight projects across the borough. While none of these current projects are related to transport, there is scope for transport projects to receive funding in future funding rounds.

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	£1,455.5	£1,455.5	£1,455.5	£4,366.5
Discretionary funding	TBD	TBD	TBD	TBD
Strategic funding	TBD	TBD	TBD	TBD
GLA funding	TBD	TBD	TBD	TBD
Sub-total	£1,455.5	£1,455.5	£1,455.5	£4,366.5
Borough funding				
Capital funding	£350	£0	£0	£350
Revenue funding	TBD	TBD	TBD	TBD
Parking revenue	TBD	TBD	TBD	TBD
Workplace parking levy	N/A	N/A	N/A	N/A
Sub-total	£350	£0	£0	£350
Other sources of funding				

S106	TBD	TBD	TBD	TBD
CIL	TBD	TBD	TBD	TBD
European funding	N/A	N/A	N/A	N/A
Sub-total	£0	£0	£0	£0
Total	£TBD	£TBD	£TBD	£TBD

Long-Term interventions to 2041

In the medium to long-term the borough believes that several significant, but currently unfunded, investments will be required to ensure the economic and social vitality of the borough. These are shown in Table ST03 below with indicative funding and indicative but uncommitted timescales.

The investments included within the table focus on improving facilities for walking and cycling. Several of the borough's town and neighbourhood centres have undergone extensive public realm improvement projects in recent years, including Twickenham, Whitton and Hampton Hill. Working to improve the remaining centres, using the Healthy Streets Approach, will encourage residents to undertake more trips to their local centre, thereby reducing the need to travel by car. These works will be supported by accessibility studies to improve routes to centres, schools and stations.

The borough is currently working to develop a core network of strategic cycle routes based on TfL's analysis of high priority connections. This analysis highlighted several priority routes within the borough, complementary to the currently planned routes, and the borough is keen to develop a high-quality comprehensive network. While LIP funding will support the development of this network, additional funding will be required to ensure all routes meet the criteria set by TfL's Cycling Action Plan.

The South Circular (A205), which forms part of the TLRN, runs through East Sheen town centre, with a negative impact on local air quality and noise levels. With the expansion of ULEZ in 2021, the South Circular will form the southern boundary but will not be included within the scheme. This section of the South Circular has also been highlighted for potential speed reduction to 20mph as part of the Vision Zero

Action Plan. These two proposed changes provide a great opportunity for making wider improvements to the local area, offering traffic calming, cleaner air and improved facilities for pedestrians and cyclists.

Following the expansion of ULEZ, there may be scope to increase additional air quality zones within the borough, with a focus on either expanding the ULEZ to encompass the whole borough or creating additional clean air zones. This would ensure there is no disbenefit to the wider scheme due to non-compliant vehicles being displaced to areas outside of the zone. The borough will work with TfL to look at additional options, with an aim for implementation in the early to mid-2020s.

Richmond town centre is subject to frequent congestion, with pedestrians, cyclists, buses and vehicles all operating in a confined space. There is limited pavement width in many areas and air quality is often poor. The Council will look at options for removing vehicle traffic from the core of the town centre, which would result in the creation of a partially or fully pedestrianised George Street. This would be expected to include removal of the one-way system on the A307, and full-pedestrianisation would require making some alterations to bus routes.

There are large portions of the borough with low levels of public transport accessibility. Ensuring all residents have access to frequent bus services will be pivotal in achieving the long-term modal shift target.

Severance is a key issue in many parts of the local area, particularly in Ham and Petersham. The area is bordered by the River Thames to the north and west, and by Richmond Park to the east. The A307, linking Kingston to Richmond, is the primary road into and out of the area. Teddington Lock, despite being a pedestrian-only bridge, carries high numbers of cyclists highlighting a lack of route options in the local area. Initial feasibility has been carried out for a new pedestrian and cycle bridge in the borough, with the best location found to be connecting Ham to Twickenham, with another viable location identified as Ham to Radnor Gardens in Strawberry Hill. Additional studies are required to determine the economic feasibility of the bridge, and funding for the bridge must still be found.

This list of medium to long-term interventions is not considered exhaustive and will continue to be reviewed and refreshed considering growth in the borough and to reflect TfL strategy.

Long-term interventions up to 2041				
Project	Approx. date	Indicative cost	Likely funding source	Comments
Neighbourhood centre improvements	2020 – 2025	£500K - £1.0M	LB Richmond	Expected to include Hampton, Ham, Hampton Wick
Strategic cycle network	2019 - 2029	£1.0M - £5.0M	LB Richmond, TfL	To include next phase of routes identified by TfL's Strategic Cycling Analysis
East Sheen town centre redevelopment	2022-2027	£1.0M - £5.0M	LB Richmond, TfL	Public realm, walking and cycling improvements, traffic calming – link to introduction of 20mph on the South Circular
Introduction of zero emission zones, low emission zones/ further expansion of ULEZ	2021-2030	£250K - £2.0M	LB Richmond, TfL	Dependent on future TfL policies
George Street – full or partial pedestrianisation	2025-2035	£10.0M - £25.0M	LB Richmond, TfL	Create either fully-pedestrianised or bus-only area through Richmond town centre
Expanded bus network	2020-2030	£2.0M - £10.0M	TfL	Provision of additional buses and/or new bus routes in the borough
Pedestrian & cycle bridge	2020-2035	£10.0M - £15.0M	LB Richmond, TfL	Exact location TBC, likely to be Ham to Twickenham or Ham to Strawberry Hill

Three-year indicative Programme of Investment

The three-year indicative programme of investment has been completed in the table ST04 below. The borough has no discretionary funding or strategic funding confirmed.

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 Richmond upon Thames TfL BOROUGH FUNDING 2019/20 TO 2021/22	Programme budget		
	Allocated 2019/20	Indicative 2020/21	Indicative 2021/22
Local transport funding	£100k	£100k	£100k
CORRIDOR, NEIGHBOURHOODS & SUPPORTING MEASURES	£1,455.5k	£1,455.5k	£1,455.5k
Support of Vision Zero	£855k	£780k	£575k
Healthy Streets and active travel	£311.5k	£381.5k	£582.5k
Working with schools	£139k	£144k	£148k
Improving air quality	£150k	£150k	£150k
Sub-total	£1,455k	£1,455k	£1,455k
DISCRETIONARY FUNDING	£0k	£0k	£0k
Liveable Neighbourhoods	TBD	TBD	TBD

Major Schemes	N/A	N/A	N/A
Principal road renewal	TBD	TBD	TBD
Bridge strengthening	TBD	TBD	TBD
Traffic signal modernisation	TBD	TBD	TBD
Sub-total	£0k	£0k	£0k
STRATEGIC FUNDING	£0k	£0k	£0k
Bus Priority	TBD	TBD	TBD
Borough cycling programme	TBD	TBD	TBD
London cycle grid	N/A	N/A	N/A
Crossrail complementary works	N/A	N/A	N/A
Mayor's Air Quality Fund	TBD	TBD	TBD
Low Emission Neighbourhoods	N/A	N/A	N/A
Sub-total	£0k	£0k	£0k
All TfL borough funding	£1,555k	£1,555k	£1,555k

Supporting commentary for the three-year programme

The three-year programme is driven by the introduction of the borough-wide 20mph speed limit. The introduction of the scheme will spearhead a new approach to strategic transport planning in the borough, with more focus on Healthy Streets and reducing vehicle dominance in residential areas.

Delivering the three-year programme

By March 2022, the borough will have better facilities for walking and cycling, with improved access to stations and bus stops. Vehicles will be travelling more slowly, with fewer collisions, with those that still take place being of lower severity. More people will choose to travel by public transport, and low-traffic neighbourhoods will make it more difficult to use residential streets as rat-runs. Air quality will be improved by increased uptake of cleaner vehicles, and the impact of freight will be mitigated through more effective management of the kerbside.

Support of Vision Zero

The borough's three-year road safety programme has the largest funding allocation of any programme and is focused on large-scale highway improvement projects. In addition to introducing the 20mph speed limit, major projects include addressing known collision hotspots on the A310 Strawberry Vale, A305 Sheen Road, A308 Hampton Court Road, A307 Kew Road and A305 Staines Road. While the design of each of these schemes will be individual, lowering vehicle speeds and providing improved provision for pedestrians and cyclists will be a consistent aim. These projects should therefore not only improve road safety but complement the wider targets to support a modal shift to walking and cycling.

The support of Vision Zero also includes funding for collision investigation, rotation of the boroughs SIDS devices, and road safety campaigns.

Health Streets and active travel

The second largest programme is Healthy Streets and active travel. This programme is focused on infrastructure improvements that support walking, cycling and public transport use. This programme includes area-based projects (Richmond town centre, Barnes High Street, Hampton and Fullwell), spot infrastructure improvement funds (our Healthy Streets fund for pedestrian and local cycle route improvements, and funding for cycle parking) and our funding stream to support the development of the borough's portion of the strategic cycle network.

The Healthy Streets fund will serve as the primary mechanism for responding to issues raised by Councillors and residents. The borough regularly receives requests for small-scale improvements – such as for dropped kerbs, improved access for non-standard cycles and better crossing facilities – and this fund will ensure that we have the capacity to respond to in a positive manner to as many of these requests as possible. A separate fund has been allocated for the development of strategic cycle routes, with a focus on upgrading existing London Cycle Network routes to meet the new standards as set out in the Cycling Action Plan and developing new routes, both as part of safety schemes and as stand-alone projects.

Funding is being provided to accelerate the review of existing CPZs and the introduction of new zones, supporting plan to expand the current coverage from one-third of the borough in 2018 to one half to two-thirds within 5 years.

Town centre improvements are currently being finalised for Richmond and Barnes, with a focus on improving air quality, reducing vehicle dominance, supporting buses and making improvements for pedestrians and cyclists using the Healthy Streets Indicators as a guide. A new study will start in 2019 in Hampton and Fulwell, with implementation over the following two years, and a new study in Whitton scheduled for 2021. This study will focus on increasing our understanding of local walking and cycling patterns and understanding how we can support increased levels of walking, cycling and public transport use in this area of the borough with low levels of public transport accessibility. Consideration will be given to filtered permeability and low-traffic neighbourhoods where supported by local residents with a focus of reducing rat-running and making local streets more welcoming for walking and cycling.

The programme also includes funding for cycle training, which covers both 1-2-1 training and Bikeability.

Working with schools

Our schools programme is focused around school travel planning, and the potential benefits for modal shift towards walking and cycling, safety improvements around schools and improving air quality around schools. The programme includes funding for School Streets and other infrastructure improvements (such as changes to crossings, road markings, sight line improvements, etc), for 'Safe Walking' pedestrian training for Y3s, support for a Bikelt officers and other school based programmes, such as scooter training, Junior Citizen, Junior Road Safety Officers and theatre productions designed to raise awareness of safety and air quality.

Improving air quality

The air quality programme is composed of three strands: electric vehicle charge points, air quality revenue and air quality infrastructure and monitoring. The electric vehicle charge points will help support increased uptake of zero-emission vehicles and is an extension of our existing programme. The air quality revenue programme will enable the borough to work more intensively with schools and in town centres to raise awareness of air quality and encourage behaviour change. The infrastructure and monitoring strand will fund additional air quality monitors and air quality specific infrastructure such as green screens, green walls and air filters.

Deriving the three-year programme

The three-year programme has been derived through internal and external engagement. Internally, workshops have been held with borough officers to discuss the wider LIP objectives and how their work areas can support the desired outcomes. Internal stakeholders were also invited to request LIP funding to support on-going projects (primarily revenue-based) and engineering schemes, including safety schemes and those focused on improving walking and cycling corridors.

We have held external sessions with borough-wide stakeholder groups to discuss our proposed approach and get early feedback on how we can make the borough a better place to live and work. These sessions focused on providing the policy background for the LIP, the target outcomes and the objectives we were proposing to ensure these outcomes were achieved. Revisions were made to the objectives following the sessions, and the conversations helped in the prioritisation exercise for the delivery plan.

The initial list of proposed LIP schemes exceeded the borough's funding allocation. The list of proposed schemes was analysed to ensure they were consistent with the wider LIP objectives and scored against each of the nine outcomes. The highest priority was given to the introduction of the borough-wide 20mph speed limit and completion of already committed schemes, and the rest of the programme was derived to ensure that all LIP outcomes would be addressed and that all areas within the borough would benefit from infrastructure improvements. Consideration was also given to the balance between capital and revenue programmes, with the aim for an 80:20 split. This process was iterative and was undertaken by a group of officers.

The proposed programme, as with the draft LIP document, went through the formal approvals process, including Director's Board, Housing, Community Safety and Environment Overview and Scrutiny Committee and the Cabinet. The consultation for the Draft LIP was approved by Cabinet on 15th November 2018.

Following public consultation, some minor changes were made to the programme to better reflect the concerns of local residents, with air quality consistently raised as an area of concern. All councillors were invited to review the programme following the changes, with detail provided on plans for each individual ward.

The programme was reviewed and agreed by officers and the Cabinet Member for Transport, Streetscene and Air Quality before final submission to TfL.

Risks to the delivery of the three-year programme

Table ST05 shows the principal strategic risks associated with delivery of the LIP together with possible mitigation actions for the three-year programme.

TABLE ST05 - LIP Risk Assessment for three-year programme 2019/20-2021/22					
Risk	Likelihood			Potential mitigation measures	Impact if not mitigated
	H	M	L		
Financial					
TfL funding allocation reduces for 2020/21 and 2021/22		M		Further prioritisation of potential projects undertaken with projects either reduced in scale or delayed	Funding shortage could affect borough's ability to deliver core programmes
Public / Political					
Lack of local support for delivery of schemes		M		<p>Early engagement with the public to discuss proposed changes and take their views into account in designs</p> <p>Encourage the public to nominate their local area for improvements, and encourage community-led design</p> <p>Develop list of contingency projects, including bringing projects forward, to</p>	Projects either do not get implemented or are implemented in such a way as they do not achieve target outcomes

				be implemented if other projects are placed on hold.	
Programme & Delivery					
Projects are delayed due to lack of planning or low staffing levels		M		Ensure projects are fully scoped and planned before starting and that staff will be available	Delays in spend or underspend across programme
Projects take longer to implement or are more expensive than predicted	H			Contingencies (including contingency allocation in budgets and possible delays at all project stages) are built into timescales and budgets	Delays in spend or overspend across programme

Annual programme of schemes and initiatives

The annual programme of schemes has been completed and submitted to TfL via the Borough Portal. The programme of schemes will be updated annually.

Supporting commentary for the annual programme

The annual programme was derived simultaneously with the three-year programme. While some components of the three-year programme have been left vague, e.g. budget has been allocated for currently unidentified future Safe Routes to Schools projects, the entire annual programme has been allocated to specific projects. Many of these projects have arisen following corridor studies that have taken place this financial year.

The primary focus for the borough in 2019/20 will be the introduction of the borough-wide 20mph speed limit. The proposed scheme will be introduced in three phases, starting in the east of the borough (Richmond side of the river), followed by the area north of the A316 on the Twickenham side of the river in Phase 2, and the area to the south of the A316 in Phase 3. The lower speed limit will be introduced on all roads within the borough with the exception of a small number of roads where engineering measures would be needed to effectively reduce speeds, as well as the TLRN. Funding will be required to be used to cover the costs of design and implementation, with a focus on ensuring the scheme is self-enforcing.

There is some carryover of projects from previous years. This includes £100,000 that has been allocated for the White Hart Lane Footbridge, which is providing an alternative to a busy level crossing. Work to improve Richmond town centre, including cycling, pedestrian, public realm and freight consolidation, will also continue.

Approximately 20% of the 2019/20 budget will be focused on revenue projects. This includes cycle training for adults and school children, pedestrian training for school children and a range of road safety schemes aimed at both school children and the wider public. The borough has engaged a Bikelt officer to work in local schools for the 2018/19 school year, and budget has been allocated to ensure this can continue in future years. Funding has been newly allocated for air quality revenue projects, focusing on providing increased resource for working with schools and in local town centres.

Revenue budget has also been allocated to undertaken studies to better understand the need for improvements to support mode shift in areas of the borough where car use is higher. For the coming financial year this spend will focus on the south west of the borough, encompassing Hampton and the area around Fulwell station. Funding

will also be provided to support the expansion of CPZs in the borough. Funding for these projects has been prioritised to ensure that the borough is addressing all outcomes within the Mayor's Transport Strategy, with locations identified as part of the data analysis exercise undertaken in preparation of this document.

Infrastructure improvements are focused on safety schemes, in line with TfL's requirements. The location of the safety schemes has been determined based on collision figures, with the focus for 19/20 on making improving to the A308 Hampton Court Road, the A310 Cross Deep/Strawberry Vale corridor, the A307 Kew Road and the A305 Sheen Road. The borough will also fund small-scale capital projects including electric vehicle charge points, new air quality monitoring equipment, improvements to Richmond town centre, cycle parking, a School Street at St Stephen's on Winchester Road and up to two more locations and spot improvements to support walking and cycling.

Risk assessment for the annual programme

Table ST06 below 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 ST06 - LIP Risk Assessment for annual programme - 2019/20					
Risk	Likelihood			Potential mitigation measures	Impact if not mitigated
	H	M	L		
Public / Political					
Lack of local support for delivery of schemes		M		<p>Early engagement with the public to discuss proposed changes and take their views into account in designs</p> <p>Encourage the public to nominate their local area for improvements, and encourage community-led design</p> <p>Develop list of contingency projects, including bringing projects forward, to be implemented if other projects are placed on hold.</p>	Projects either do not get implemented or are implemented in such a way as they do not achieve target outcomes
Programme & Delivery					

Projects are delayed due to lack of planning or low staffing levels		M		Ensure projects are fully scoped and planned before starting and that staff will be available	Delays in spend or underspend across programme
Projects take longer to implement or are more expensive than predicted	H			Contingencies (including contingency allocation in budgets and possible delays at all project stages) are built into timescales and budgets	Delays in spend or overspend across programme

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

Overarching mode-share aim and outcome Indicators

LBRuT has a target to achieve 75% of trips by walking, cycling and public transport by 2041. This mode-share target is supported by additional targets set to ensure that all the outcomes within the Mayor's Transport Strategy are achieved. These targets are detailed in Table ST07. Transport for London will supply the data for assessing progress towards achieving these targets.

Delivery indicators

The borough will monitor and record the delivery indicators and report to TfL once a year in June using Proforma C. The information provided will include progress towards the outcome indicators as well as details on delivery of cycle parking, cycle training, cycle and pedestrian infrastructure improvements, road safety training, vehicle charging points, etc.

Local targets

The borough has adopted many of the MTS outcome targets as local targets, including short-term targets for mode shift and KSI reduction. The borough has also set targets for installation of electric vehicle charging points (set at 300 for 2018/19), and the number of cycle parking stands to be installed (set at 100 for 2018/19). Local targets will continue to be updated on an annual basis, reflective of ongoing projects and funding allocations.

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 2014/15 – 2016/17	62%	2021	
		75%	2041	
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).	46%	2021	
		70%	2041	

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.	15%	2021	Dependent on TfL funding
		72%	2041	Dependent on TfL funding
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)	44	2022	
	Deaths and serious injuries (KSIs) from road collisions base year 2010/14 (for 2030 target).	28	2030	
	Deaths and serious injuries from all road collisions to be eliminated from our streets	0	2041	
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 by 2041.	0% change	2021	
		5-10% reduction	2041	
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.	78,700	2021	Latest (2016) figure of 79,553, assumes steady annual decrease over 25 years
		75,100	2041	
Outcome 4: London's streets will be clean and green				
		146,100	2021	

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.	41,900	2041	
Reduced NO _x emissions.	NO _x emissions (in tonnes) from road transport within the borough. Base year 2013.	230	2021	
		30	2041	
Reduced particulate emissions.	PM ₁₀ and PM _{2.5} emissions (in tonnes) from road transport within borough. Base year 2013.	PM ₁₀ - 50 PM _{2.5} - 24	2021	
		PM ₁₀ - 29 PM _{2.5} - 15	2041	
A good public transport experience				
Outcome 5: The public transport network will meet the needs of a growing London				
More trips by public transport - 14-15	Trips per day by borough of residence. Reported as 3yr moving average. Base	116,000	2021	

Objective	Metric	Borough target	Target year	Additional commentary
million trips made by public transport every day by 2041.	year 2013/14 - 2015/16, baseline value 105,000	160,000	2041	Dependent on improved public transport provision in the borough by TfL and rail operators
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	-57% (from 8 to 3 minutes)	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	11.1mph	2021	Baseline of 11.0mph
		11.6mph	2041	Baseline of 11.0mph
New homes and jobs				

Objective	Metric	Borough target	Target year	Additional commentary
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				
		N/A	N/A	Outcomes delivery based

Appendix 1: Summary of responses to the public consultation

There were 57 responses to the public consultation, including 14 direct responses and 43 using the online form.

All comments received have been individually logged, considered and addressed. Individual responses have been issued to local groups

Direct responses were received from:

- Transport for London
- Metropolitan Police Service
- London Borough of Hounslow
- London TravelWatch
- Richmond Cycling Campaign
- Make Air Safe and Clean (MASC)
- Mums for Lungs East Sheen
- Friends of the River Crane Environment (FORCE)
- National Grid
- Natural England
- Historic England
- Port of London Authority
- Highways England
- Teddington Society

Online responses were made on behalf of both individuals (predominantly local residents) and local and national groups. Responses to the online consultation have been anonymised.

Invitations to comment on the LIP were sent to all neighbouring local authorities, including Surrey County Council as well as Spelthorne and Elmbridge Borough Councils. LB Hounslow was the only neighbouring authority to respond.

Online consultation responses

There were 43 respondents to the online consultation, which was live for a 6-week period from 30 November 2018 to 11 January 2019. Amongst respondents, 38 described themselves as local residents (88%), 5 (12%) were members of local groups and 3 (7%) worked or studied in the local area (respondents were able to choose multiple answers).

Responses to the online consultation were largely positive, with 28% fully supporting the LIP objectives and a further 44% tending to support the objectives. Only 9% tended to oppose the objectives, and no respondents were fully opposed.

Online consultees showed similar levels of the support for the delivery plan, with 63% either fully or tending to support the plan, contrasted with 14% tending to oppose and 2% fully opposing.

Respondents were able to give free text answers detailing the aspects of the objectives and delivery plan that they liked, as well as the aspects that they disliked.

Numerous themes could be seen through responses; concern over how poor air quality would be addressed, the need for improved bus services to offer a viable alternative to the car, a desire for better enforcement (of speeds, on idling and in respect to parking and loading restrictions) and the need for better infrastructure for walking and cycling. There were numerous comments that the plan could be more ambitious, most often in reference to walking, cycling, School Streets and the introduction of low-traffic neighbourhoods and filtered permeability.

Those that did not support the plan expressed concern about the proposals for 20mph (including concerns that there would be a lack of compliance) and that due consideration was not given to trips that need to be undertaken by car. Some concern was also raised about how the expanded ULEZ would divide the borough in two.

Direct consultation responses

There were 14 direct responses made by organisations to the consultation, including TfL. All individual comments received have been logged and actioned, with detailed responses prepared for each organisation that requested changes be made to the LIP.

Five of these responses were simply to indicate that the organisation had no comment on the LIP, including the Metropolitan Police Service, Highways England and Natural England.

Changes made to the LIP in response to comments on the LIP

Several changes were made in response to comments received by individuals and groups. These include:

- Inclusion of interim targets for 2021
- Updated text to reflect the results of the consultation on borough-wide 20mph
- Detail on how the borough will proactively plan for walking by widening the scope of the existing cycling strategy into a comprehensive Active Travel Strategy.

- References have been added to existing strategic walking routes in the borough (Capital Ring, Thames Path and London LOOP), and an objective has been added regarding improving walking and cycling routes away from the highway network
- Clarity on the borough's ambitions for the creation of a strategic cycle network and the process we will undertake to deliver this network
- Clarity on the new Healthy Streets fund and how this will be used to improve local walking and cycling routes. For pedestrians, reference to clearing pavement obstructions and dropped kerbs have been added to objectives
- Additional information on safety and crime have been added, including details on the 'safe vehicles' component of Vision Zero
- Greater detail on how the Council will improve air quality and reduce exposure, particularly near schools and in town centres, including additional funding allocated directly to air quality
- Additional commentary on ULEZ has been added, including discussion on the potential displacement that may negatively impact parts of the borough outside of the zone, and encouraging TfL to look at extending ULEZ to cover all Greater London
- A commitment to Sustainable Drainage Systems has been added
- Greater detail on how we will work with schools, including the aims of the school travel planning programme, the education and training programmes we provide and how we plan to better manage traffic outside of schools, including the wider introduction of School Streets (however, it should be noted that the Council recognises that School Streets are not needed at all schools, nor would they be suitable for all schools, and are putting a process in place to prioritise their introduction)
- Additional commentary on the need for better bus provision in the borough, with a request to TfL to find a way to improve local services and to introduce cleaner buses. Details on the borough's response to the recent consultation on proposed changes to bus routes have been added
- Greater detail on how the borough will support car-free and low-car developments, and how we will work with developers to minimise the traffic impact of new developments
- Reference was added to the Hammerton and Hampton commercial ferry services
- References have been added to Registered Parks and Gardens, Scheduled Monuments and Royal Botanic Garden's status as a World Heritage Site, as well as the Arcadian Thames. A specific objective has been added under

Outcome 4 regarding maintaining the natural and built environment and supporting bio-diversity and open spaces

Not all comments resulted in changes to the LIP, for a variety of reasons. This includes:

- Opposition to the potential introduction of a 20mph speed limit was noted, but a separate consultation exercise has been carried out by the Council regarding its implementation. The LIP serves as a medium for implementation for the decision made by Councillors based on the results of this separate exercise
- Trajectories and targets have been set for the borough by TfL, and it is acknowledged by TfL that most of the targets are challenging but detailed analysis has been carried out to ensure they are achievable. TfL have published an evidence report that details the modelling that has taken place to support the setting of these targets
- Opposition to targets regarding car ownership and car use were noted, but these targets and objectives have been made to support the outcomes of the Mayor's Transport Strategy and reflect the wider ambition for more trips to be undertaken by walking, cycling and public transport across London. The target of a 75% mode share for sustainable modes still allows for 25% of all trips to be undertaken by car, which is considered more than sufficient for essential car journeys, such as those where no public transport alternative is available or those taking the trip have reduced mobility
- The Council understands that not all residents wish to live within a Controlled Parking Zone and consults with all residents that many be impacted prior to introducing a zone. Zones are regularly reviewed to ensure there are fit for purpose. Controlled Parking Zones discourage commuters and shoppers from using residential streets as free parking areas, and instead give priority to local residents and others with legitimate need.
- The delivery plan does not include revisions to local public transport provision (instead focusing on supporting access to bus stops and rail stations) as bus routes are set and funded directly by TfL and public transport fares are also outside of the Council's control. Likewise there are no projects focused on the TLRN as the road is within TfL's jurisdiction.
- There are no references made to electric scooters as these are not currently legal for road or pavement use in the UK

- Taxi and private hire trips are considered car trips within the mode share target as set by the Mayor. It is recognised that these vehicles play a pivotal role in the overall transport network, including filling a gap when no public transport is available and late at night, and as such the LIP takes a neutral approach to these types of trips
- Heathrow Airport, and potential expansion of the airport, is outside the scope of the LIP