Ham and Petersham Neighbourhood Forum

Active Neighbourhood

Cycling and Walking Feasibility Study

November 2018

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Version Control and Approval

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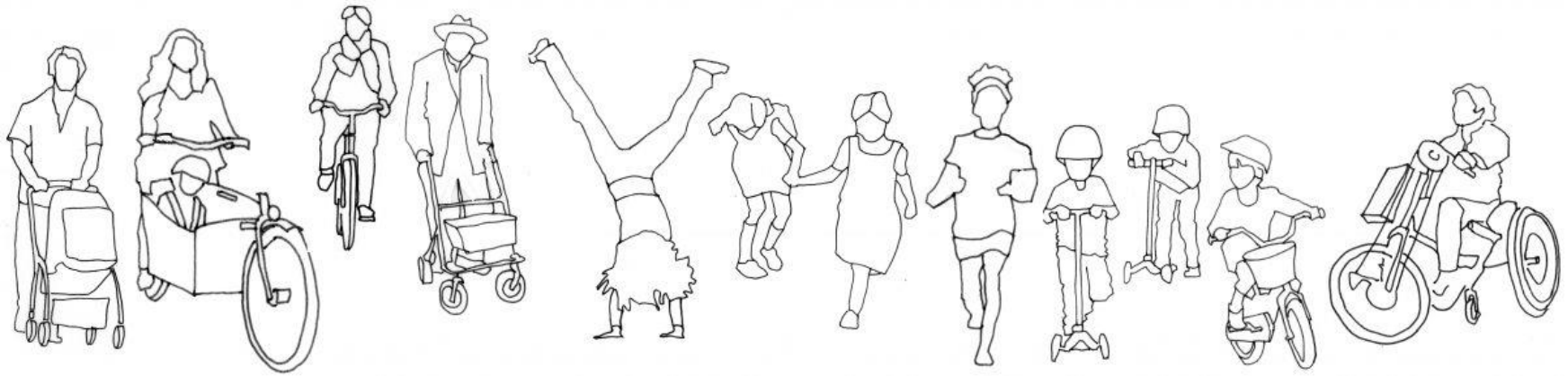


Contents

Appendices

Appendix A Engagement Report

Appendix B Strategic Route Options

Appendix C Strategic Route Selection Report

Appendix D Maps

Appendix E Sketch Designs

Appendix F Thames Landscape Strategy Report

Appendix G Healthy Streets Check

1 Foreword

The Neighbourhood Plan vision is to create 'an environmentally and economically sustainable community with a strong sense of identity in this distinctive and green part of London.' At referendum in October 2018, the electorate voted overwhelmingly in support of the Ham and Petersham Neighbourhood Plan and Richmond Council (LBRuT) will use the plan alongside the Local Plan and the London Plan to assess planning applications in the area.

Community collaboration

The brief and the ideas for this study come from the community in Ham and Petersham who have been generous with their time, insight and wisdom. One of incidental benefits of setting up a Neighbourhood Forum was the opportunity to foster and reinforce community networks and relationships. When Ham and Petersham Neighbourhood Forum was designated in 2014, it automatically included every resident in Ham and Petersham. A committee was set up to represent the Forum comprising residents, local Councillors, representatives from each school, businesses, religious organisations, local police and each of the many local organisations that already existed. Whist Ham and Petersham is not short of local active groups, the Neighbourhood Forum has brought organisations together in a non-partisan environment to collectively identify and debate the issues and their aspirations for the area. During the Active Neighbourhood study we were able to include members from the adjacent North Kingston Neighbourhood Forum and their Local Councillors in a cross border collaboration. When Ham Parade lost the butcher and greengrocer in quick succession, residents in Ham and North Kingston came together with the idea of a regular market which could continue to provide these services. This community initiative prioritises local businesses and has become a much loved social event in our local calendar. In the feasibility study we have developed plans for Ham Parade to create a better environment for the market and visitors to the parade to support its ongoing success.

'The best kept secret in London'

During consultation for the Neighbourhood Plan it was evident that residents have a great deal of affection for the area which, due to its isolation and poor connectivity remained largely undeveloped until the 20th century, and enjoys a legacy of beautiful green spaces; it was described by one resident as 'the best kept secret in London'. However, residents raised significant frustrations with their reliance on the busy Petersham Road (A307) for access to and from the area and the lengthened journey times and unreliability of bus services affected by congestion on this road. Residents were concerned about the additional pressure that development in Ham, Kingston and beyond will put on this through route in the absence of other viable

options. One resident told us that Ham and Petersham is unique in metropolitan London in having to rely on a single road running in and out of the area for all its public and private transport.

Travel and Streets

In the Neighbourhood Plan 'Travel and Streets' were considered together, recognising the influence that topography and design have on the way people use their streets and choose to travel. Lying within the curve of the Thames to the west and Richmond Park to the east, physical constraints severely limit permeability in and out of the area. Ham and Petersham has a low PTAL of 1 - 2 and consequently a higher than LBRuT average car use to get to work. Local traffic, through traffic and bus services must all use the A307 which makes it busy and unattractive for walking and cycling. In parts the pavements are too narrow to accommodate mobility scooters or pushchairs. The only alternative route, the towpath is well used for recreational walking and cycling but locally poor surfaces make it unsuitable for wheeled transport including mobility scooters and lack of lighting and tidal flooding limits its utility use.

Residents expressed no desire to increase the road network, indeed they are grateful that Tudor Drive and Dukes Avenue were never converted into a four lane highway and road bridge to Twickenham as originally planned; however there was support for improving permeability and conditions for walking and cycling which would provide a viable alternative to car use and support modal shift to improve congestion and bus journey times on the Petersham Road. At one workshop over 90% supported a walking and cycling bridge between Ham and Twickenham. Residents' proposals led to the Neighbourhood Plan Travel and Streets Community Proposal 1:

4.4 Community Proposal 1 - Improvements to Transport Infrastructure

The following transport schemes will be prioritised:

1. Improvements to the network of walking and cycle routes linking to town centres and transport nodes outside Ham and Petersham;
2. Improvements to the network of walking and cycle routes linking shops, schools and local facilities within Ham and Petersham;
3. Improvements to support bus service, priority and design to ensure reliability, a variability of bus services and improve connectivity.
4. Improvements to the physical environment of local shopping centres to create squares and places for people to gather; to make it easier to cross busy roads, to reduce traffic speeds locally and to provide more space for pedestrians and bicycle users (see Opportunities for Change Chapter for details);
5. Improvements to the accessibility of existing ferry services;
6. Assessment of the viability of a foot and cycle bridge linking Ham and Twickenham.

The Neighbourhood Forum applied for LBRuT Community Funding to commission a feasibility study for items 1,2 & 4 which would produce strategic proposals for Ham and Petersham and a 'project bank' of supporting projects. This feasibility study is intended to guide the council and developers when making infrastructure investment which could be carried out incrementally, but importantly it would be part of the overall coordinated network strategy which links to networks outside of the area in Kingston and Richmond.

Active Neighbourhood Study

The definition of 'active' meaning engagement and a form of transport seemed appropriate for the Active Neighbourhood study. We were delighted to be able to work with transport consultants PJA and Sustrans to carry out the study whose expertise and commitment in this field has made this study enjoyable, thought provoking and a learning experience. Their brief was '*to propose ways to enable people with a range of ages and abilities to be able to walk and cycle safely and comfortably to the neighbouring town centres of Kingston and Richmond, schools and local facilities. Routes would accessible all year round and unaffected by flooding, enabling active travel as a regular, safe and reliable form of transport'.* The routes should also be inclusive of wheelchair and motorised scooter users who presently cannot access Richmond from Ham.

At the design workshops residents and representatives of stakeholder groups were invited to propose walking and cycling routes and interventions through the area. It became clear that route planning presents significant challenges particularly the bottleneck through Petersham. There are physical constraints, ecological considerations, limited public throughways and paths are narrow. So speculation was encouraged and 3 options emerged which were drawn up by our consultants. Option 2 commencing from Ham Cross alongside Riverside Drive and following a dry route parallel to the river is suitable for a wide range of users, serves a large proportion of the community and links to all the key destinations through a simple internal network and local public realm improvements. Critically, in the context of constraints and challenges, this route is deliverable and the land is predominantly in council ownership. It also has synergies with Thames Landscape Strategy proposals for a dry route providing a broader spectrum of support and potentially other funding opportunities.

For residents and visitors the creation of a better environment for walking and cycling and crucially, an alternative route to the A307 will make active transport attractive and accessible to many more people than the present conditions allow.

Justine Langford

Ham and Petersham Neighbourhood Forum

2 Executive Summary

2.1.1 Phil Jones Associates (PJA) have undertaken a cycling and walking feasibility study on behalf of the Ham and Petersham Neighbourhood Forum (HPNF) to support their vision of safe and coherent walking and cycling environment that provides inclusive access to everyday amenities.

2.1.2 Most urban areas suffer from road congestion yet tend to have a high prevalence of short car-borne trips that could be feasibly undertaken by cycling and walking. By developing a safe, direct, coherent, attractive and comfortable network for cycling and walking it has a very strong potential to attract high usage given unique constraints surrounding the neighbourhood. Cycling and walking as a mode of transport can not only help manage congestion - by converting single-occupancy car trips to the more space-efficient cycle, which uses far less road space - but individuals who cycle/walk also gain personal health and economic benefits. Society not only benefits from reduced congestion, but also from the concomitant improvements to air quality and reduced pressure on parking spaces and public transport.

2.1.3 PJA's approach to reviewing Ham and Petersham's street network has followed methodology set out in the London Cycling Design Standards (LCDS) and Department for Transport's guidance on developing a Local Cycling and Walking Infrastructure Plan (LCWIP).

2.1.4 The study has considered national and regional travel data but has also analysed locally-collected knowledge through a comprehensive community and stakeholder engagement process. The study not only makes recommendations on an emerging network layout but also includes specific infrastructure and intervention types; providing a project bank for limited funding to be assigned to elements of the network where the investment may generate the most useful returns. The prioritisation process is not designed to discount or rule out schemes, as the full benefits of a cycling network would not be realised with an incomplete network. Moreover, funding opportunities tend to require a reactive and "shovel-ready" mindset. Therefore, this study makes recommendations for a complete cycling network for Ham and Petersham with a project bank with suggested infrastructure treatments and indicative costs.

3 Background

Phil Jones Associates (PJA) were appointed to undertake a feasibility study for a Richmond to Kingston cycling and walking route that will enable people with a range of ages and abilities to be able to cycle and walk safely and comfortably but also connect to local schools, shops and community facilities in the Ham and Petersham neighbourhood. The network is to be accessible all year round and unaffected by flooding enabling cycling and walking as a regular, safe and reliable form of transport. The area of Ham and Petersham is contained by the physical boundaries of the Thames and Richmond Park with limited access by road. The area does not have rail or tube connections but is served by two bus routes, with an additional local bus to Kingston. Numerous footpaths and alleyways provide links within the neighbourhood area. The Thames towpath is also well used, but it is affected by tidal flooding and impassable at high tide which is a regular occurrence making it an unreliable utility route.

This study aims to identify barriers to cycling and walking through a comprehensive community and stakeholder engagement process. Engagement outputs, site audits and mapping exercises are used to develop an emerging local cycling and walking network with a route selection assessment applied to 3 strategic cycle route options linking Richmond and Kingston. Concept designs and high-level construction costs will be produced to support the emerging network.

Figure 3-1: Project area

3.1 Demand for active travel in Ham and Petersham

Ham and Petersham experiences very poor public transport accessibility relative to other parts of LBRuT which may contribute to car travel being the most popular commuter mode. The development of a coherent cycle network linking Richmond and Kingston has the potential to not only improve access to public transport by widening the catchment area, but it may also allow people to make journeys currently not possible or difficult on the existing public transport network, thus improving access to services or providing an alternative to the private car.

Figure 3-2: Low PTAL

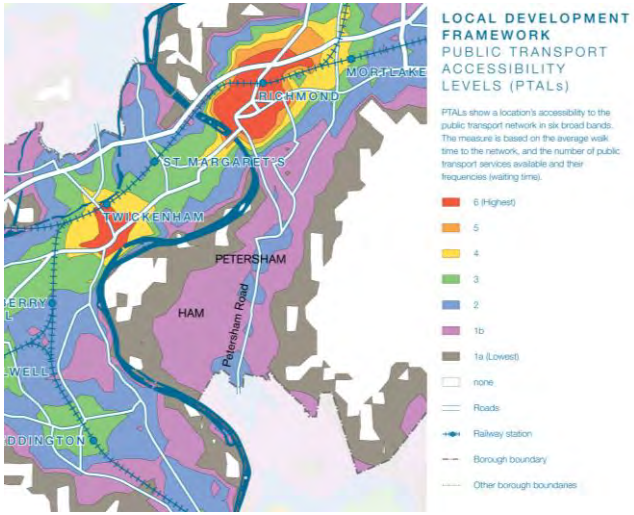


Figure 3-3: Richmond and Kingston are within a 15min cycle from Ham (access west of the River Thames via Teddington Lock footbridge)

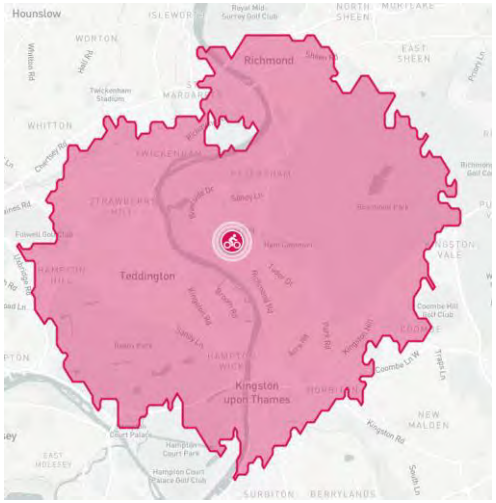
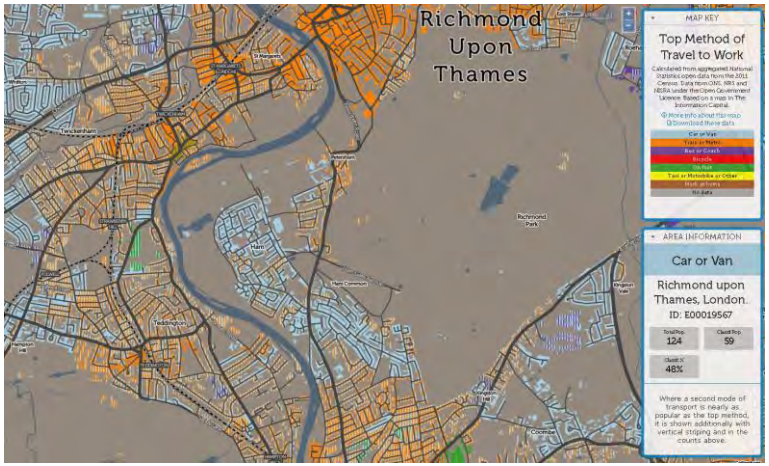
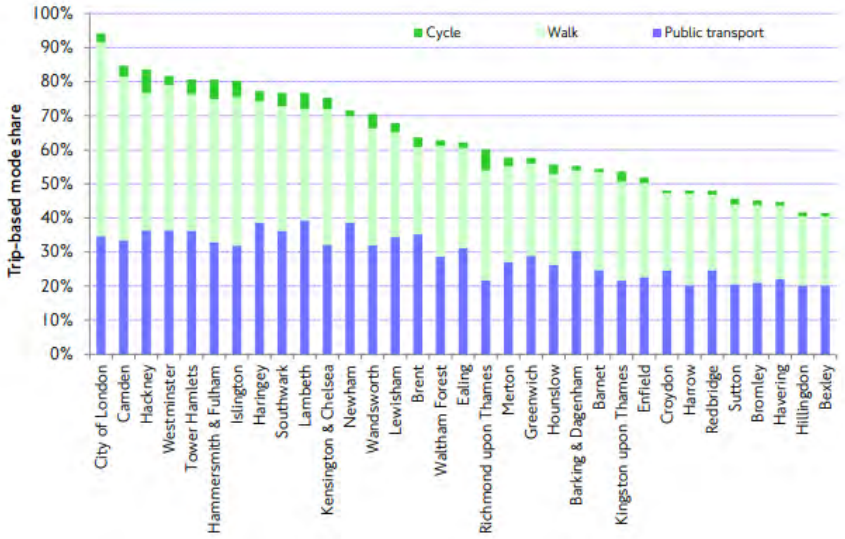


Figure 3-4: 2011 census data – Travel to Work (primary method)



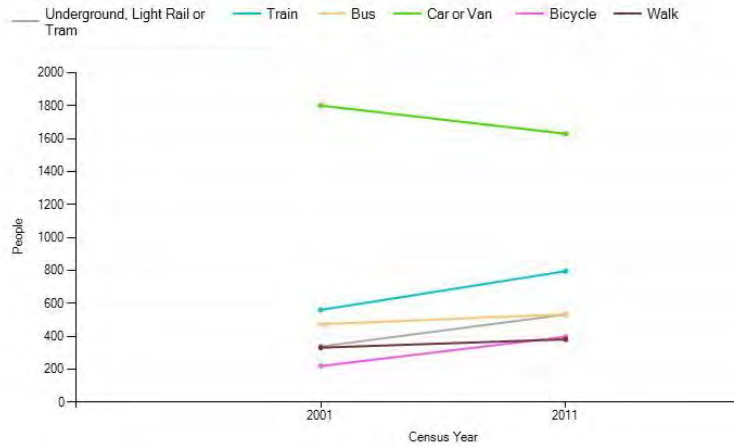
LBRuT residents have the highest outer London cycle mode share of 7% (Figure 3-5), more than twice as high as any other outer London borough. This is without a strategic cycle network in place but may be partly due to the borough's natural assets such as its large parkland and rivers mean it can be an attractive place for cycling.

Figure 3-5: Trip-based mode share for active, efficient and sustainable modes, by borough of residence, LTDS 3 year average, 2014/15-2016/17



In Ham and Petersham, cycling and walking demand are growing while car use for travelling to work is falling (Figure 3-6). Whilst walking and cycling are becoming more popular modes, conditions are far from perfect to support more people from a wider demographic making the switch to healthier and cleaner travel, without providing a safe and coherent cycle and walking network it is likely to continue suppressing this potential demand.

Figure 3-6: Methods of Travel to Work (comparison 2011 and 2001 census) in Ham, Petersham and Richmond Riverside



Figure's 3-7 and 3-8 are TfL walking and cycling potential maps, both indicate generally a lower potential in areas with lowest population density. Our study aims to develop a conceptual design for a strategic cycle route between Richmond and Kingston that's connected to the planned Quietway 21 and is supported by low traffic neighbourhoods, based on the City Planner mapping this approach has the potential to enable a substantial number of potential journeys made by walking and cycling.

Figure 3-7: TfL City Planner cycling potential

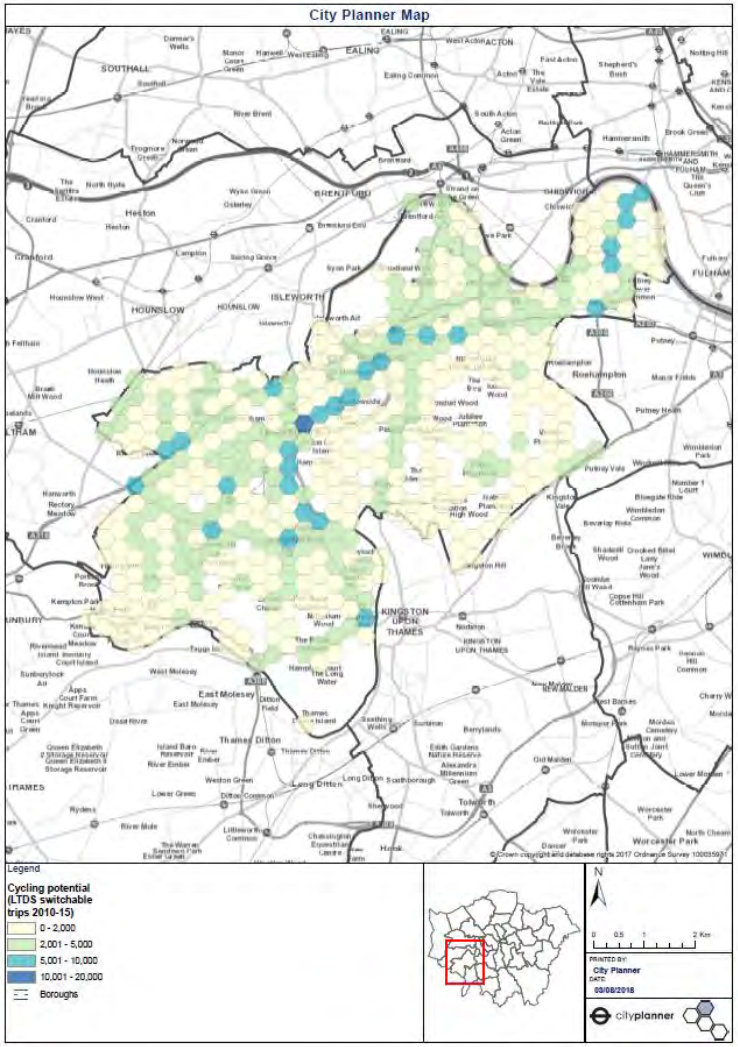
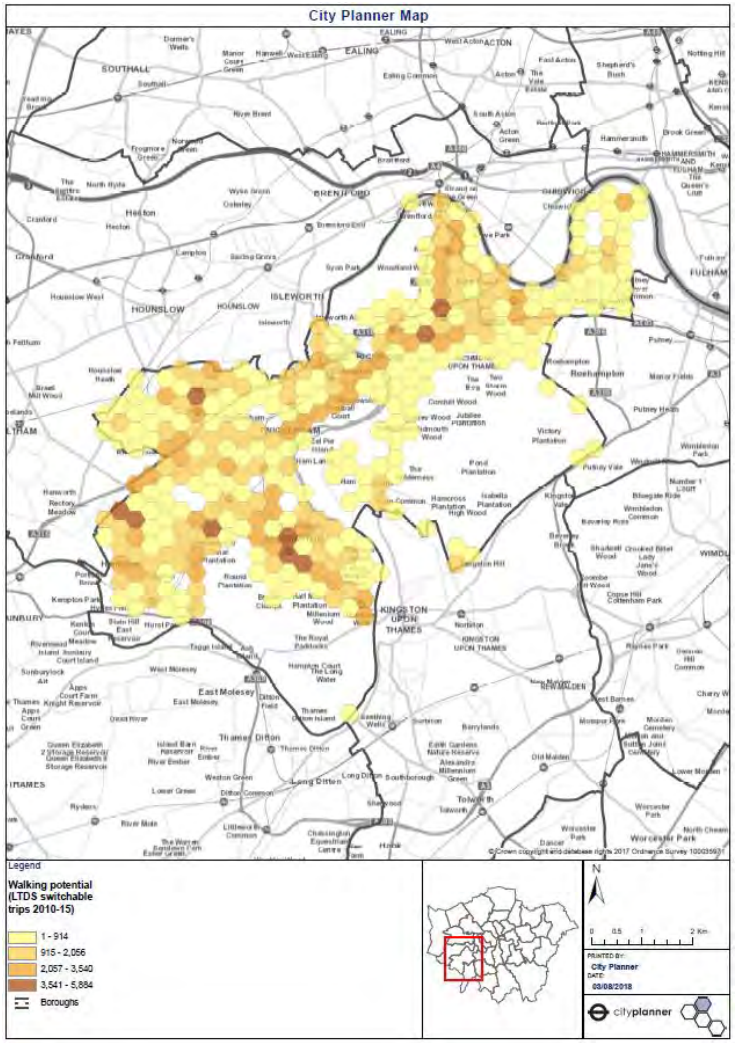


Figure 3-8: TfL City Planner walking potential



3.1.1 TfL Strategic Cycling Analysis (SCA)

There are 8.17 million trips per average day in London that are potentially cyclable in their entirety. This is equivalent to 41% of all daily trips in London (by all modes) in addition to existing cycle trips and is 62% of trips by motorised modes. The greatest potential for cycling comes from those people currently travelling by car. The greatest unmet potential for growth is within outer London, where 55% of potentially cyclable trips take place.

The SCA for Richmond suggests that the borough has only fulfilled 15% of its potentially cycleable trips with only 32,100 trips undertaken of a potential 186,800. This is undoubtedly partially due to the lack of a comprehensive cycle network.

The cycle network that is central to our overall Active Neighbourhood plans has been developed to meet this demand in the Ham and Petersham area by providing high-quality provision linking Richmond and Kingston town centres while connecting local schools, shops and other attractors.

Figure 3-9: Mayor for London's recommended Strategic Cycle Network

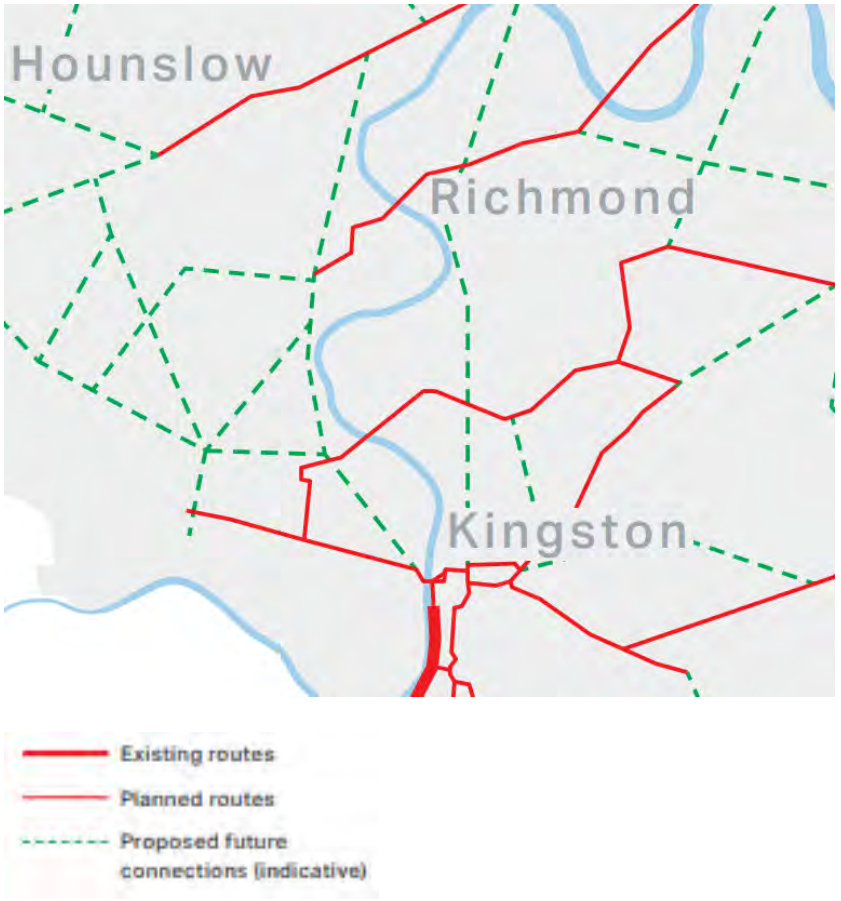


Figure 3-10: The greatest potential for cycling comes from people currently travelling by car

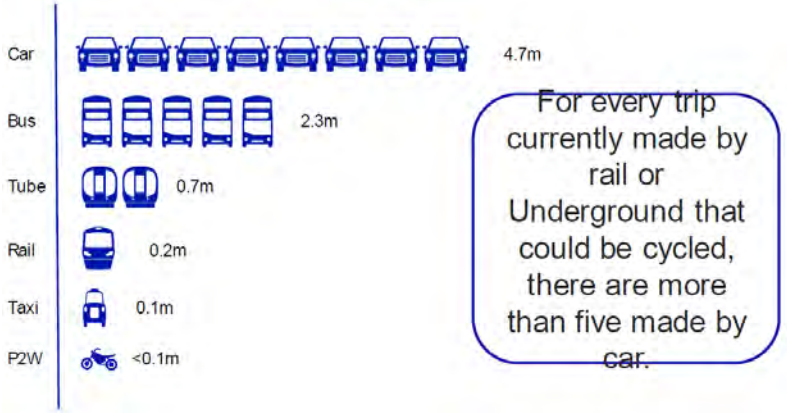


Figure 3-11: Potentially cyclable trips are more likely to be for non-work purposes

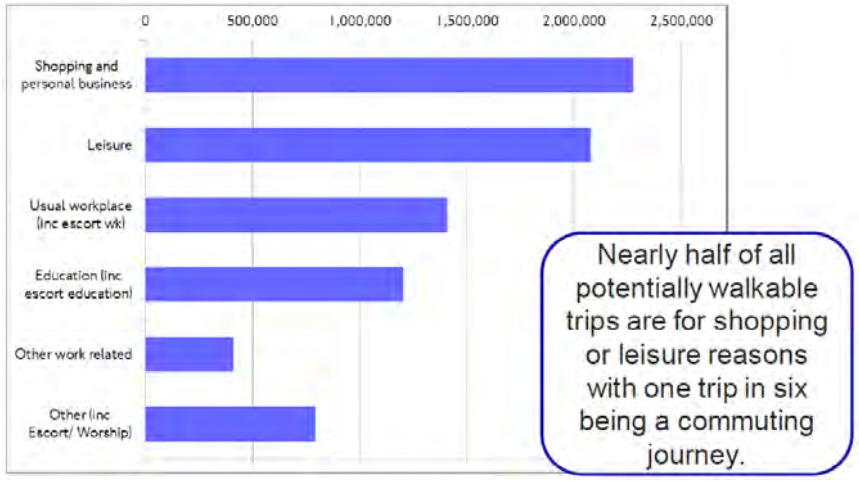


Figure 3-12: Most potential for cycle growth in outer London

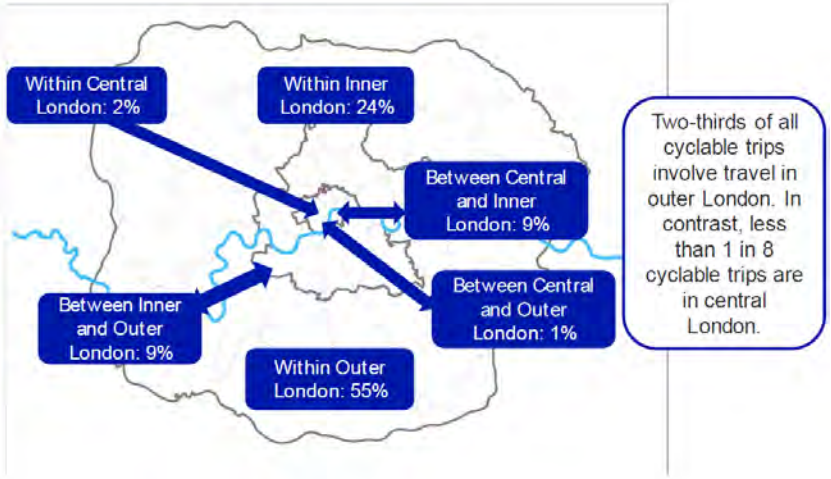
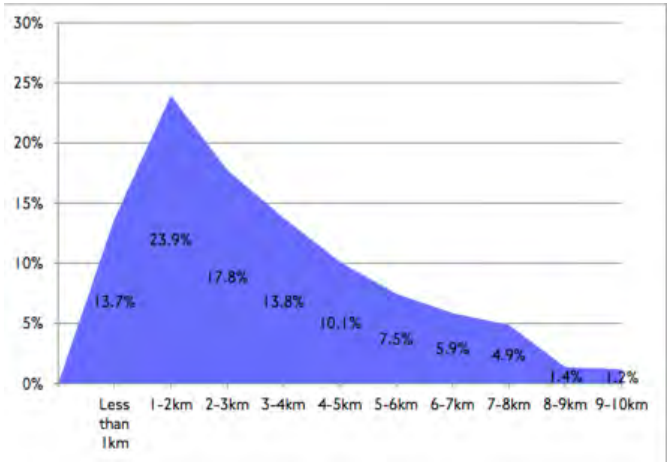


Figure 3-13: LTDS – Potential cycle trips (distances)



3.1.2 Propensity to Cycle Tool (PCT)

The PCT is a tool that uses information about current trip lengths and topography to identify trips that might be most easily switched to cycling. The tool uses travel to work data from the 2011 Census, which has origins and destinations for almost all commuters in England. The PCT provides a range of scenarios to explore cycling potential at area and route levels. The scenarios are:

1 Government Target – national target to double cycling in England by 2025. Areas with many short, flat trips and a below-average current rate of cycling are projected to more than double. Conversely, areas with above-average levels of cycling and many long-distance hilly commuter routes will experience less than a doubling.

2 Gender Equality – women cycle at the same rate as men do now, for each origin-destination pair.

3 Go Dutch – uses the probability that each given trip would be cycled in the Netherlands, based on length and hilliness.

4 E-bikes – A kind of Go Dutch plus, based on Dutch and Swiss data, if people use e-bikes for longer or hillier journeys as the Dutch and Swiss already do.

Ham and Petersham have relatively high existing cycle to work compared with the rest of London, however public transport accessibility is low for the area so approx. 40% of commuters drive to work.

Table 3-1: 2011 census data – Travel to works

All residents living in zone:	
Richmond upon Thames 017 (Ham zone)	
Total commuters:	2195
Cyclists (baseline):	228 (10%)
Drivers (baseline):	852 (39%)
Richmond upon Thames 012 (Richmond Park/Petersham zone)	
Total commuters:	2437
Cyclists (baseline):	225 (9%)
Drivers (baseline):	874 (36%)
Kingston upon Thames 001 (North Kingston zone)	
Total commuters:	3374
Cyclists (baseline):	271 (8%)
Drivers (baseline):	1425 (42%)

Figure 3-14: % of commuters cycling to work (primary method of travel)

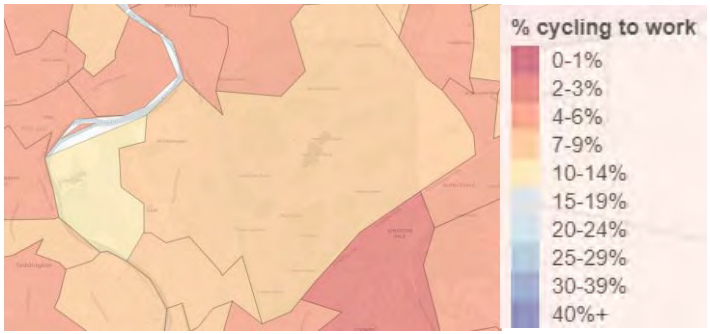
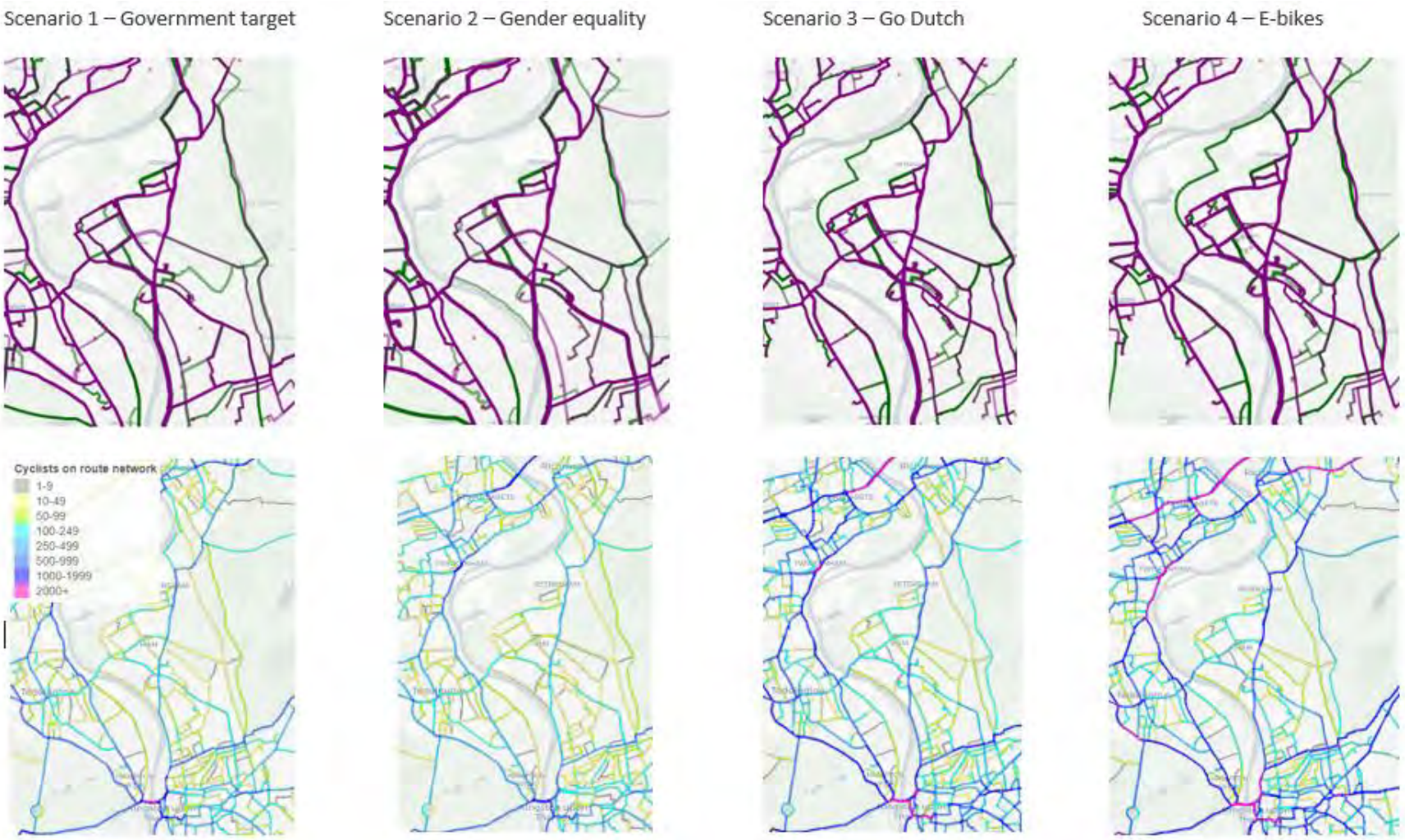


Figure 3-15: 2011 census data existing routes used by cyclists (purple = faster routes, green = quieter routes)

Figure 3-16: Commuter flows across street network (source – PCT)

Forecasted demand for fast and slow routes (LSOA)



3.2 Regional Policy

3.2.1 Mayor's Transport Strategy March 2018

The outputs of this report aim to support the delivery of the listed polices set by the Mayors for London Transports strategy.

Policy 1 - The Mayor, through TfL and the boroughs, and working with stakeholders , will reduce Londoners' dependency on cars in favour of active, efficient and Sustainable modes of travel, with the central aim for 80 per cent of all trips in London to be made on foot by cycle or using public transport by 2041.

Policy 2 - Active Travel – The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to make London a city where people choose to walk and cycle more often by improving street environments, making it easier for everyone to get around on foot and by cycle, and promoting the benefits of active travel. The Mayor's aim is that, by 2041, all Londoners do at least the 20 minutes of active travel they need to stay healthy each day.

Policy 3 - Vision Zero for Road Danger - The Mayor, through TfL and the boroughs, and working with stakeholders, will adopt Vision Zero for road danger in London. The Mayor's aim is for no one to be killed in or by a London bus by 2030, and for all deaths and serious injuries from road collisions to be eliminated from London's streets by 2041.

Policy 4 - Security - The Mayor, through TfL and the police, will seek to ensure that crime and the fear of crime remain low on London's streets and transport system through designing secure environments and by providing dedicated specialist and integrated policing for London's transport system.

Policy 5 - Efficient Streets - The Mayor, through TfL and the boroughs, and working with stakeholders, will prioritise space efficient modes of transport to tackle congestion and improve the efficiency of streets for the movement of people and goods, with the aim of reducing overall traffic levels by 10-15 per cent by 2041.

Policy 6 – Air Quality - The Mayor, through TfL and the boroughs, and working with stakeholders, will take action to reduce emissions – in particular diesel emissions – from vehicles on London's streets, to improve air quality and support London reaching compliance with UK and EU legal limits as soon as possible. Measures may include retrofitting vehicles with equipment to reduce emissions, promoting electrification, road charging, the imposition of parking charges/ levies, responsible procurement, the making of traffic restrictions/ regulations and local actions.

Policy 7 – Zero Carbon - The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to make London's transport network zero emission by 2050, contributing towards the creation of a zero carbon city, and also to deliver further improvements in air quality to help meet tighter air quality standards, including achieving a health-based target of 10µg/m 3 for PM2.5 by 2030. London's streets and transport infrastructure will be transformed to enable zero emission operation, and the switch to ultra low and zero emission technologies will be supported and accelerated.

Policy 8 – Local Environment - Policy 8 The Mayor, through TfL and the boroughs, and working with stakeholders, will enhance London's natural and built environment by: a) Ensuring that transport schemes protect existing green infrastructure where possible, or – if there is a loss – providing new green infrastructure in order to deliver a net gain in biodiversity. b) Seeking additional opportunities to build new green infrastructure into the existing transport estate. c) Monitoring and protecting designated spaces on transport land, such as Sites of Importance for Nature Conservation. d) Maximising opportunities to protect, promote and enhance London's built heritage and sites of cultural importance that are affected by transport development.

Policy 9 - Climate Change - Policy 9 The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to ensure that London's transport is resilient to the impacts of severe weather and climate change, so that services can respond effectively to extreme weather events while continuing to operate safely, reliably and with a good level of passenger comfort.

Policy 10 - Whole Journey Approach - The Mayor, through TfL and the boroughs, and working with stakeholders, will use the Healthy Streets Approach to deliver coordinated improvements to public transport and streets to provide an attractive whole journey experience that will facilitate mode shift away from the car.

Policy 13 - Customer Experience - The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to make the public transport network easier and more pleasant to use, enabling customers to enjoy comfortable, confident, safe and secure, informed and stress-free travel.

Policy 14 - Accessibility - The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to enhance London's streets and public transport network to enable disabled and older people to more easily travel spontaneously and independently, making the transport system navigable and accessible to all and reducing the additional journey time that disabled and older users can experience.

Policy 15 - Bus - The Mayor, through TfL and the boroughs, and working with stakeholders, will transform the quality of bus services so that they offer faster, more reliable, accessible, comfortable and convenient travel by public transport, while being integrated with, and complementing, the rail and Tube networks

3.3 Healthy Streets

Healthy Streets is a new approach to looking at streets and what they provide for people. It uses a set of indicators that can be used to assess existing highway layouts and proposed layouts to see if they will deliver for people. The Healthy Streets approach is embedded in the liveable neighbourhoods with the outcomes of both contributing to Healthy Streets and Healthy People in the Mayor's Transport Strategy 2018.

Healthy Streets, the associated guidance and assessment tools are part of a new approach for London's streets, to be used when looking at the existing situation and as a tool to develop ideas and designs that are improvements, for the people who live in them and use them to get around. Several processes and documents have been produced by TfL to support the use of the approach.

3.4 Local Policy

In addition to The London Plan and Mayor's Transport Strategy, LBRuT and RBK have also established their commitment to increasing cycling and walking through their local implementation plans (LIPs) and strategy documents.

3.4.1 Richmond Cycling Strategy 2016 – 2026

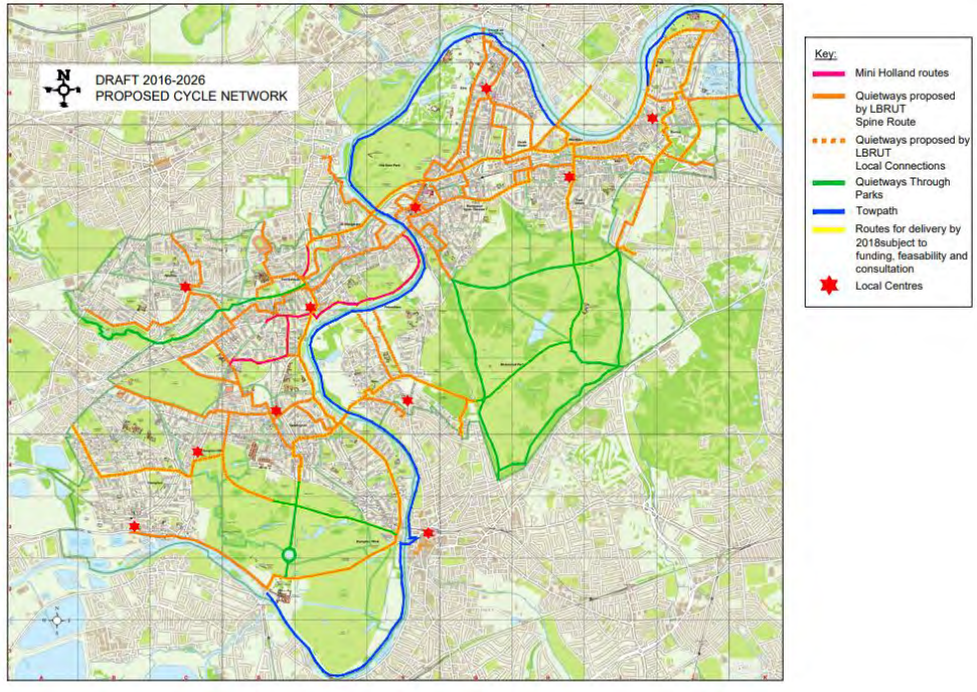
https://www.richmond.gov.uk/media/15732/richmond_cycling_strategy.pdf

The current rate of cycling in LBRuT is 7% which is higher than average for London but a modal share target of 15% by 2026 has been set by the borough.

Table 3-2: TfL Travel in London 10 supplementary information

Percentage of trips by main mode Londoners' trips by Borough of origin, trips per day and shares by main mode, average day (7 day week) 2014/15 to 2016/17									
London Borough	Trips per day	Rail	Underground/ DLR	Bus/Tram	Taxi/other	Car /motorcycle	Cycle	Walk	All modes
Outer London	9,821	4%	5%	13%	1%	47%	2%	28%	100 %
Greater London	18,165	5%	9%	14%	2%	34%	3%	33%	100 %
LBRuT	456	7%	3%	10%	1%	39%	7%	34%	100 %
LBK	379	8%	1%	12%	1%	42%	4%	33%	100 %

Figure 3-17: Draft 2016 – 2026 Proposed Cycle Network – LBRuT Cycling Strategy



3.4.2 Ham and Petersham Neighbourhood Plan

https://www.richmond.gov.uk/media/16247/hpnp_sep2018_ref.pdf

The neighbourhood plan was adopted by LBRuT in Autumn 2018. The plan sets out the local community's vision and objectives for the area.

3.5 Identifying trip generators

For the network to be a success it will need to provide useful links for both locals and those passing through the area. Whilst determining the emerging cycling and walking network the need to consider access to the below key trip generators was considered.

3.2 Town Centres - key areas of transport connections, jobs, shops and other amenities.

- Kingston
- Richmond
- Teddington
- Twickenham

3.2 Local amenities

- Ham Parade and Ham Market
- St Richard's Parade
- Back Lane shops
- Local green spaces, allotments and Playgrounds
- Forest School, sports clubs, scout huts
- Places of worship

3.2 Schools

GLA maps showing where pupils live in relation to their school can be found on the next page where the patterns of mobility are taken from the 2017 Spring School Census.

There are 5 schools in the Ham and Petersham area with several others located nearby. The mapping indicates that the two primary schools have relatively local catchments, one primary (Russell School) has a slightly larger catchment and the secondary and sixth form school (Grey Court) shows a much wider catchment.

No school travel mapping is available for The German School; however, the school has been accredited a Gold STAR Travel Plan. According to the GLA data, it has 862 pupils attending its pre-school, primary, secondary and sixth form schools. it is assumed that the school has a vast catchment area due to it being an independent school, so the likelihood is that many children are driven to school.

3.2 Visitor

- Ham House
- Ham Lands
- Richmond Park
- Petersham Nurseries
- River Thames

Figure 3-18: St Richard's Church of England Primary School – 224 pupils (source – Mayor for London School Atlas)

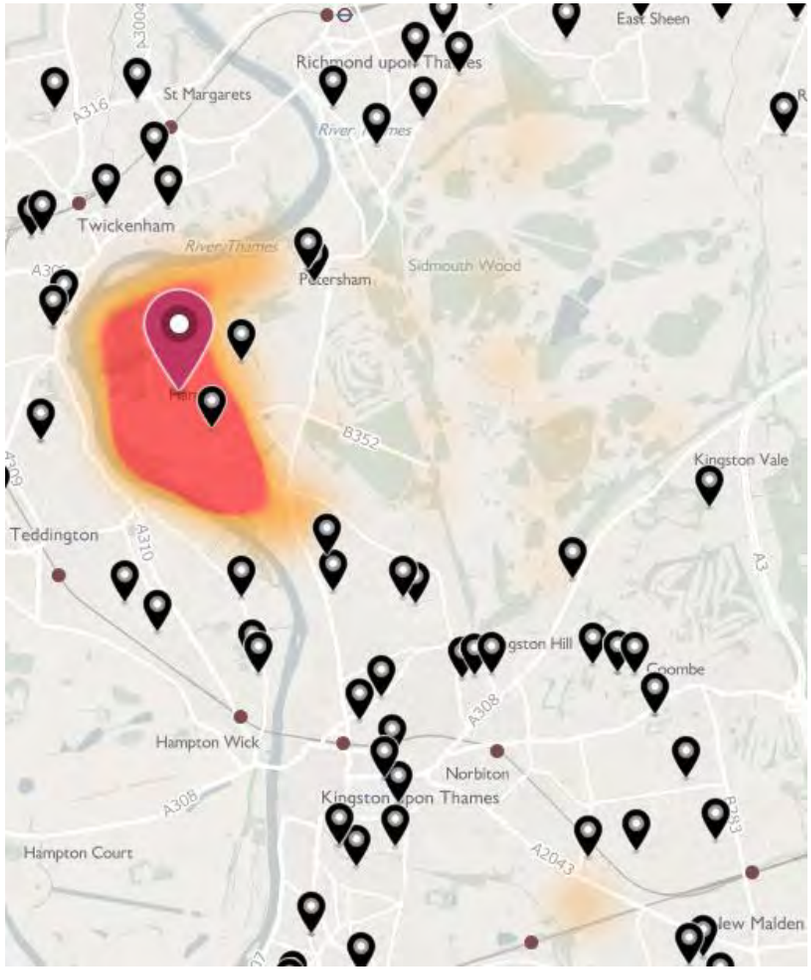


Figure 3-19: Meadlands Primary School – 227 pupils (source – Mayor for London School Atlas)

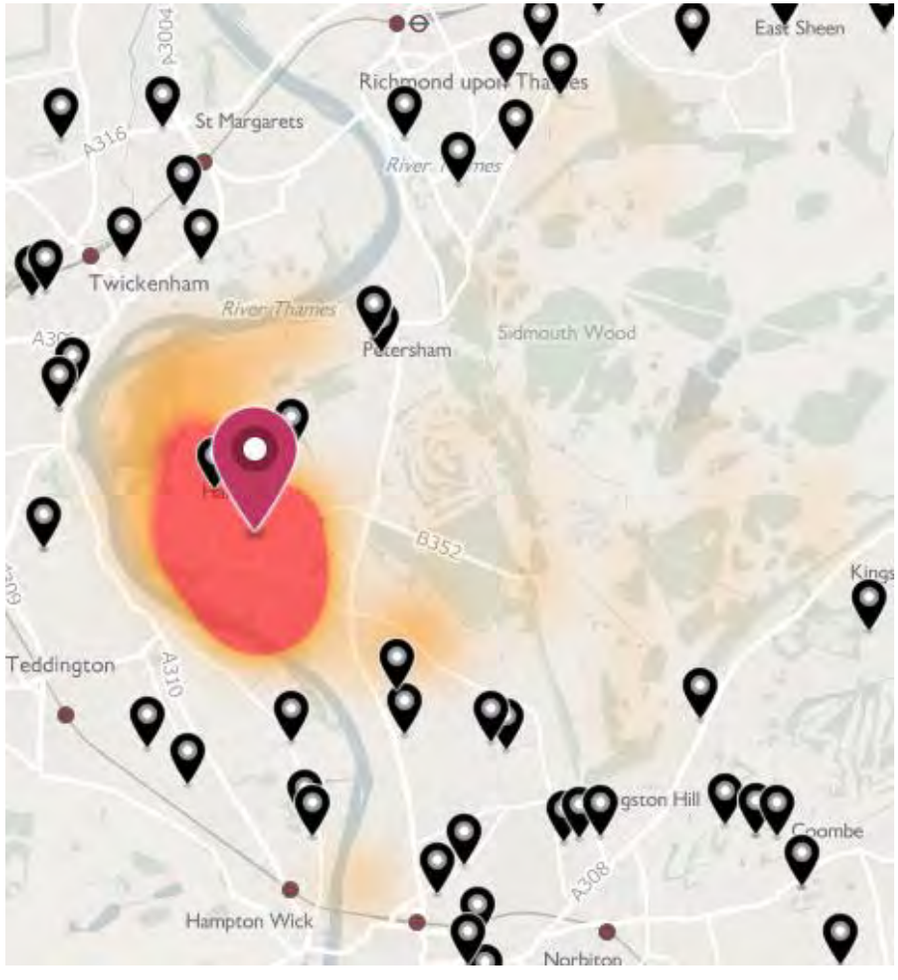


Figure 3-20: The Russell Primary School – 274 pupils
(source – Mayor for London School Atlas)

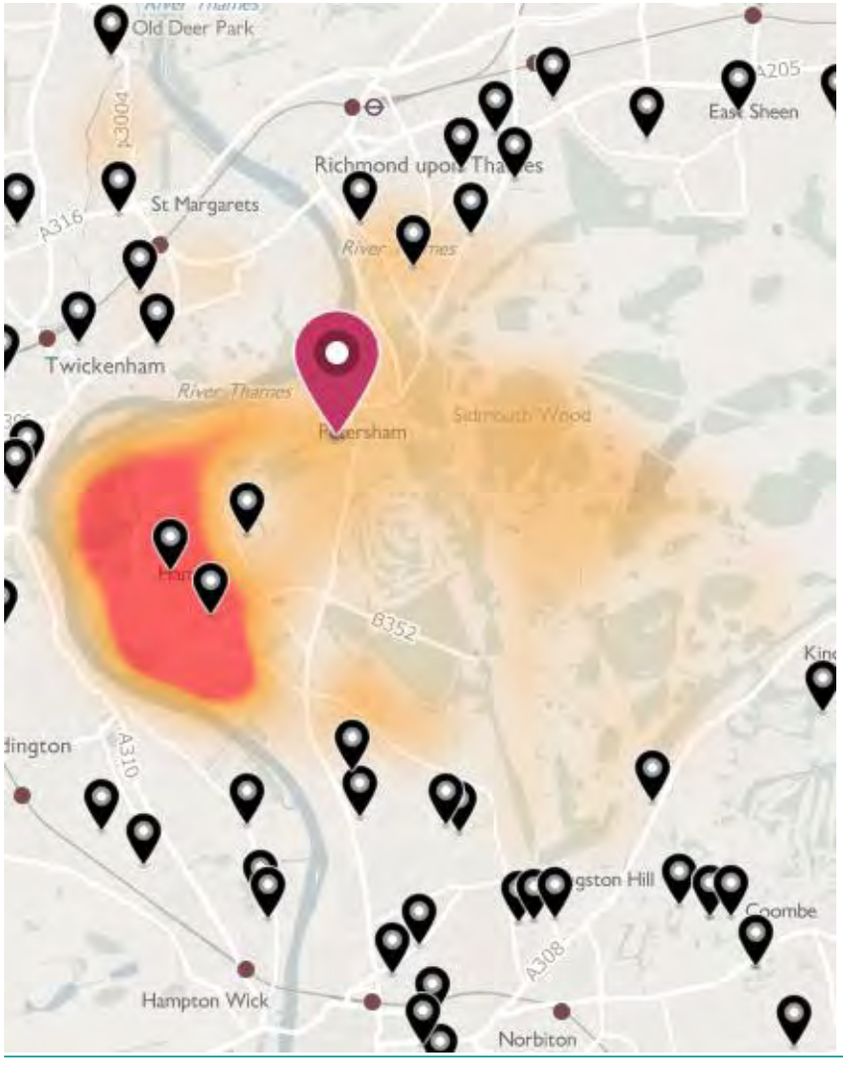
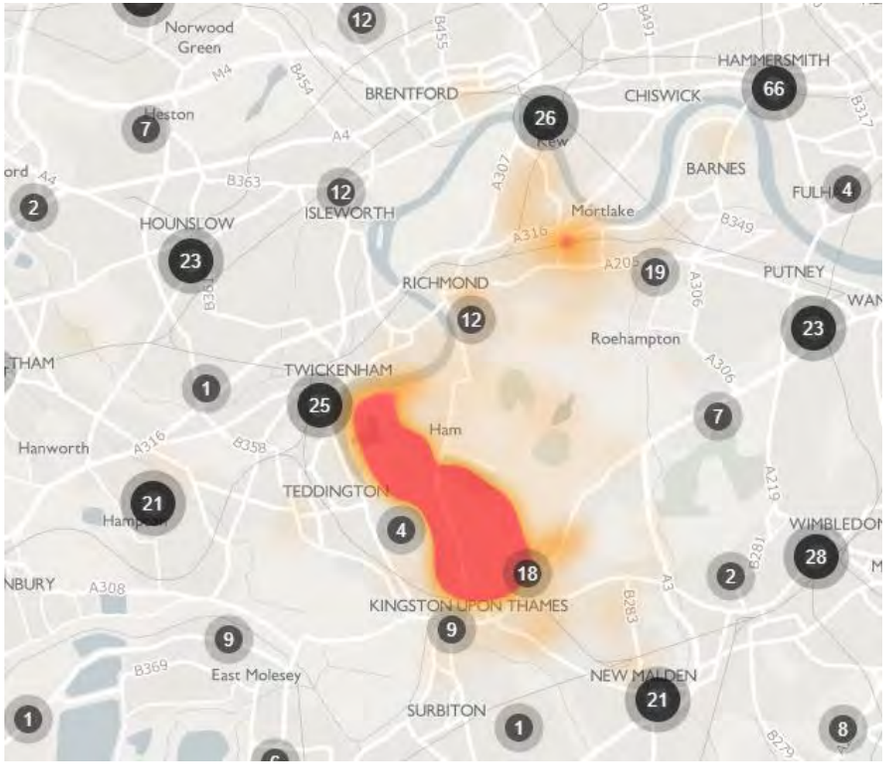


Figure 3-21: Grey Court School – 1161 pupils
(source – Mayor for London School Atlas)



A large portion of Grey Court Schools' 1161 pupils live east of the A307. High traffic volume and lack of frequent crossing points cause severance for pupils accessing from North Kingston.

3.6 Growth and demand

3.6.1 Projected growth

Figure 3-22: Mayor for London forecasted job growth in LBRuT

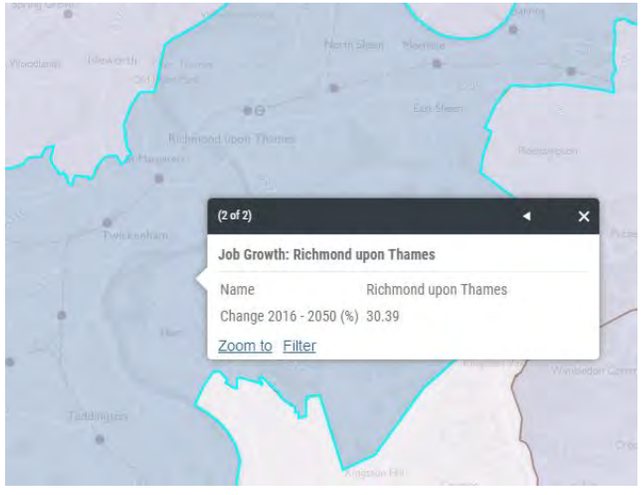


Figure 3-23: Mayor for London forecasted population growth in LBRuT

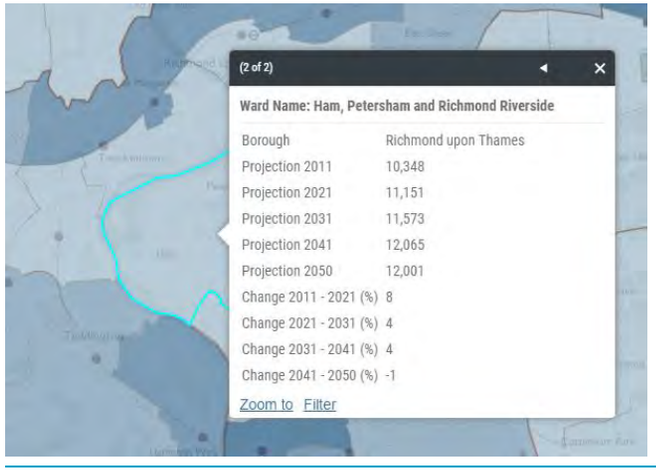


Figure 3-24: Mayor for London forecasted job growth in RBK

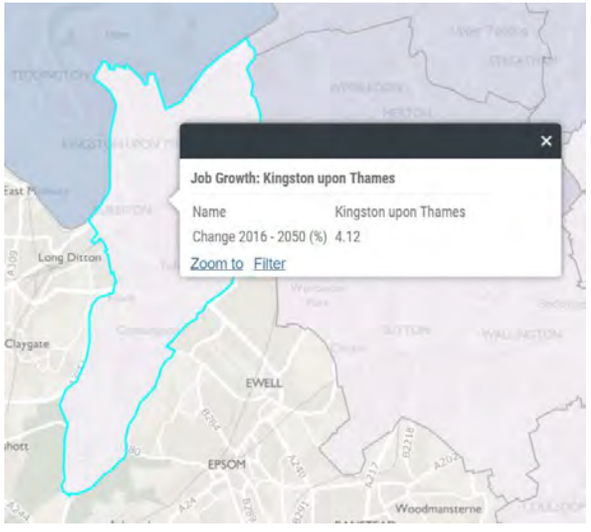
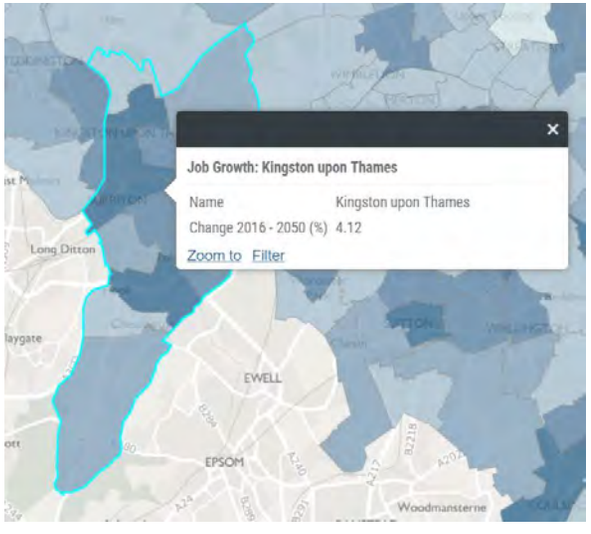


Figure 3-25: GLA forecasted population growth in RBK



3.6.2 Development

To mitigate the increase in the number of journeys associated with new development the Ham and Petersham Neighbourhood Plan prioritises improving provision for walking and cycling to enable sufficient modal shift to offset the impact of new development.

The emerging cycling and walking network developed in this study helps to provide access to the following major developments:

- Ham Close (in the centre of the study area)
- Richmond Chase
- Queenhurst (North Kingston)
- Eden Walk (Kingston Town centre)

Figure 3-26: Ham Close development

Figure 3-27: Crossrail 2 map

3.6.4 Ham and Twickenham cycling and walking Bridge

Although outside of the scope of this study, a new cycling and walking bridge is strongly supported as it would provide direct/safe cycling and walking access between Ham and Twickenham, enabling new routes to town centres and stations while connecting local attractors on both sides of river. A bridge could also provide a traffic free route into Richmond Town centre using the existing Warren Path which is flood free and lit.

The possibility of a new foot and cycle bridge crossing the Thames received overwhelming support from visitors to an engagement workshop in 2016. Despite the proposed Crossrail II route, which will make Teddington Station a new fast link to London and Surrey, most people preferred a location at the end of Ham Street to give the most direct route to Twickenham town centre, buses and fast train line.

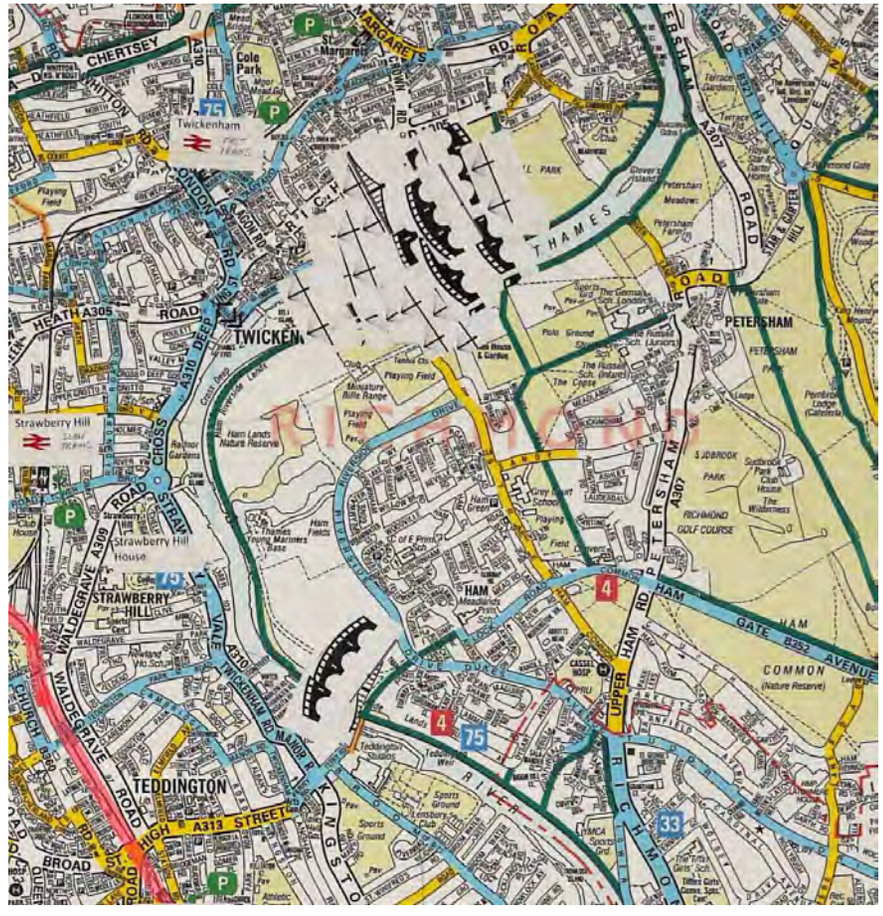
LBRuT has recently commissioned a feasibility report into potential cycling and walking bridge connections, it can be accessed using the below link.

https://www.richmond.gov.uk/media/16407/thames_bridge_feasibility_study.pdf

LBRuT 2018 – 2019 Twickenham and Ham Bridge consultation

https://haveyoursay.citizenspace.com/richmondecs/thames-bridge/consult_view/

Figure 3-28: Community engagement responses to bridge location



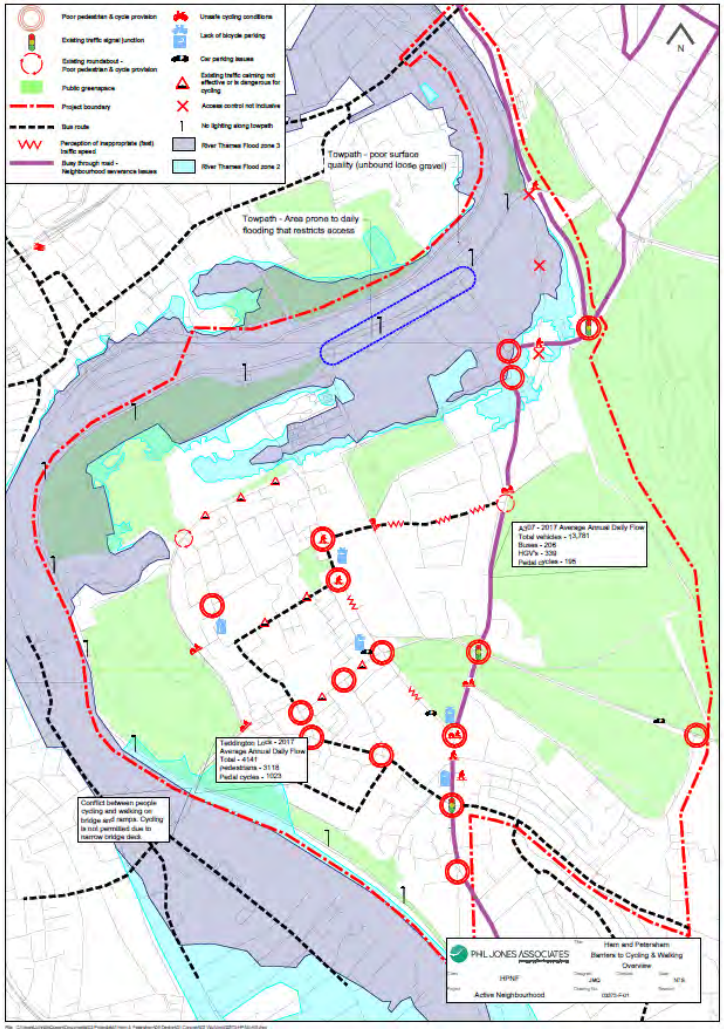
4 Review of cycling and walking

4.1 Barriers to active travel

The current cycling network is a mix of fragmented routes that do not join up, offering little or no access to schools, shopping parades and the wider town centres of Richmond and Kingston. The existing towpath along the river Thames does provide a traffic-free route but is circuitous and at times is inaccessible due to tidal flooding while it's not lit and in parts has unbound surfacing. This chapter aims to demonstrate the physical barriers that inhibit cycling and walking with issues identified through community and stakeholder engagement captured in Appendix D. Issues identified through community and stakeholder engagement are summarised in Figure 4-2.

Figure 4-1: Ham Market engagement event

Figure 4-2: overview map of barriers to cycling and walking (Appendix D)



4.2 Road network

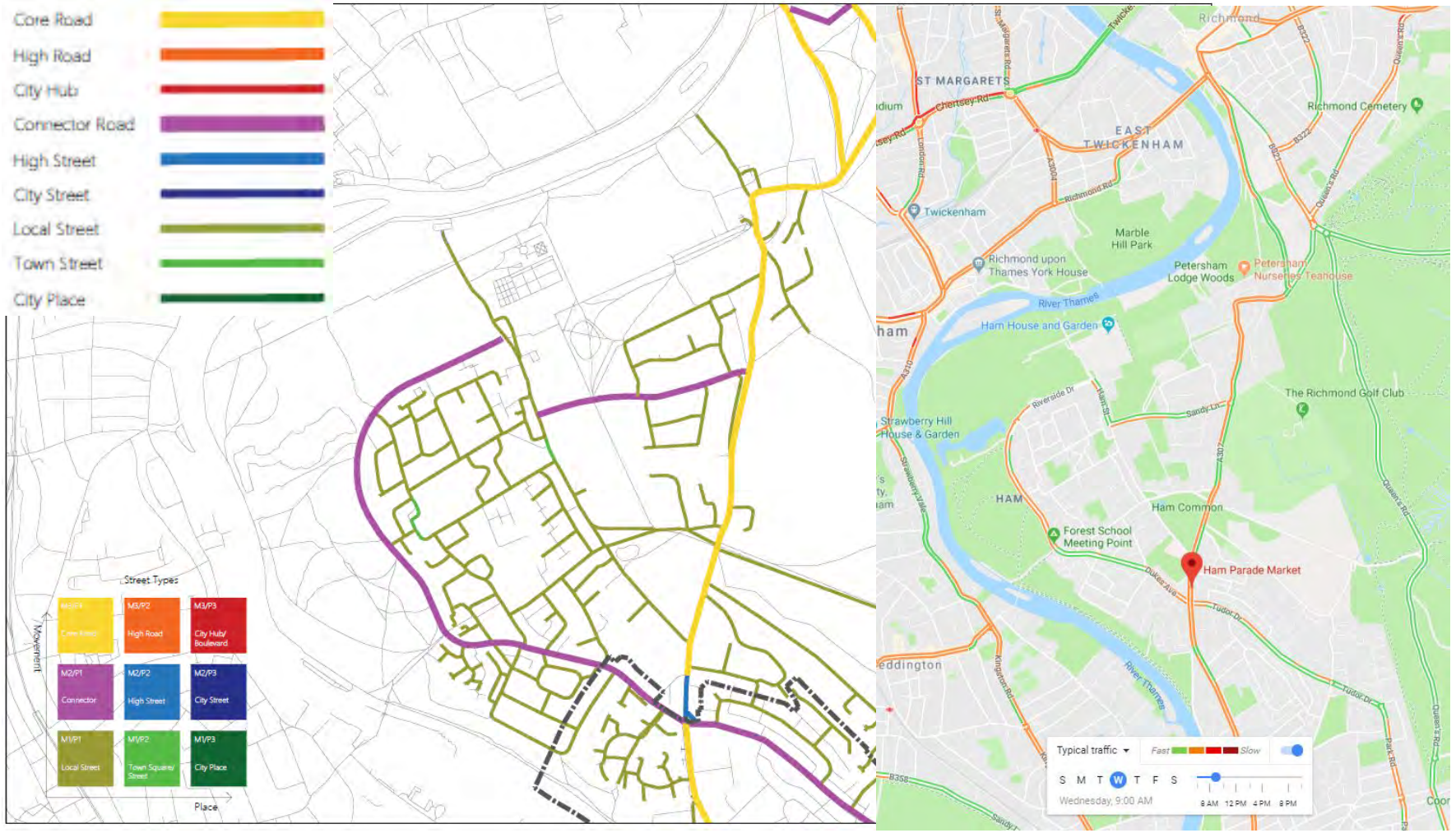
Figure 4-3: Neighbourhood Plan transport routes

There is limited access to Ham and Petersham by road. The A307 (Petersham Road) is the only road running in and out of the area and the consequent reliance by both private and public transport on this route leads to congestion and unreliable travel times. Queen's Road runs parallel to the A307 and is located in Richmond Park, so it closes to motor traffic every day from dusk to morning (7am/7:30am), motor traffic is also restricted during deer culls (November and February), this puts added pressure onto the A307.

Heavy flow, speed and use of A307 by through traffic, buses and freight discourage potential cycle and pedestrian users. Its narrow carriageway and footways make it impossible to reallocate space for dedicated cycle tracks. Narrow pavements and alleyways restrict use by mobility scooters, wide pushchairs and wheelchairs.

Dukes Avenue and Riverside Drive the only wide roads in the area as they were once intended for access to an undelivered road bridge between Ham and Twickenham (mid 20th century) but now provide residential access and access to Ham House. Riverside Drive/Dukes Ave also provide access to delivery trucks for the Palm Centre on Ham Street and Tesco's at St Richard's Court. Other roads in Ham and Petersham are primarily narrow residential roads, used for local access except at school drop off and pick up times. Ham Street, one of the original roads in Ham, is particularly narrow and with on-street parking is congested in places making it difficult to negotiate.

Figure 4-4: Street type matrix based on TfL's Healthy Streets guidance and Google Maps typical mid-week morning peak traffic forecast



According to data provided by the Department for transport (DfT) motor traffic on the A307 decreased between 2002 and 2012 but has been slowly rising since.

Figure 4-5: DfT traffic counts (estimated) for Petersham Road (A307)

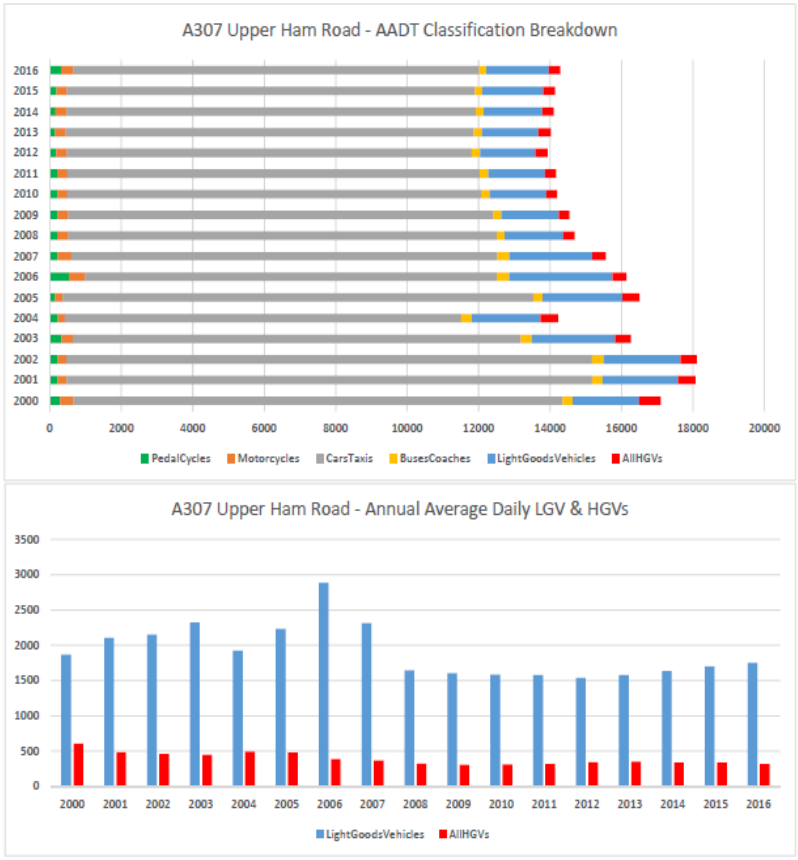


Figure 4-6: Queuing traffic in Petersham Road

Figure 4-7: Narrow footway and carriageway in Petersham Road

4.3 Land Ownership

4.3.1 Public highway

Figure 4-8: Highway boundary map – Ham Parade

4.3.2 Public Rights of Ways

Figure 4-10 highlights an expansive network of footpaths and bridleways with particularly high concentrations in Petersham. These footpaths are mostly too narrow for cycling but do provide important pedestrian links that enable people to avoid the narrow footways on Petersham Road, however, inclusive access is an issue as many of the paths suffer from poor surfacing, with many restrictive access controls creating barriers for people in wheelchairs, mobility scooters and parents with buggies. The Thames towpath is used, but it is affected by tidal flooding and impassable at high tide. The bend in the river makes this a long route between Kingston and Richmond, as such it tends to be used for recreational purposes rather than utility journeys. Cycling is not officially permitted along the Towpath, it should be converted to shared-use path to legalise cycle movement.

Figure 4-9: Footpaths in Petersham

Figure 4-10: Public Rights of Way in Ham and Petersham

4.3.3 Land ownership in relation to strategic cycle route

Three strategic route options have been proposed by residents and stakeholders during the engagement process, it is considered outside the scope of this study to fully establish land ownership along each route, further feasibility work and landowner engagement is required to develop the proposals further.

Figure 4-11 identifies LBRuT land in the Ham and Petersham area, this is particularly relevant to the development of the 'dry route' section of the strategic cycle route. This section of the route is mostly located on Council land but ownership of an area red (in Figure 4-12) between Queen Elizabeth Meadows and Petersham Sea Scouts land is unknown. Further investigations are required to identify ownership.

Figure 4-11: Council land and property

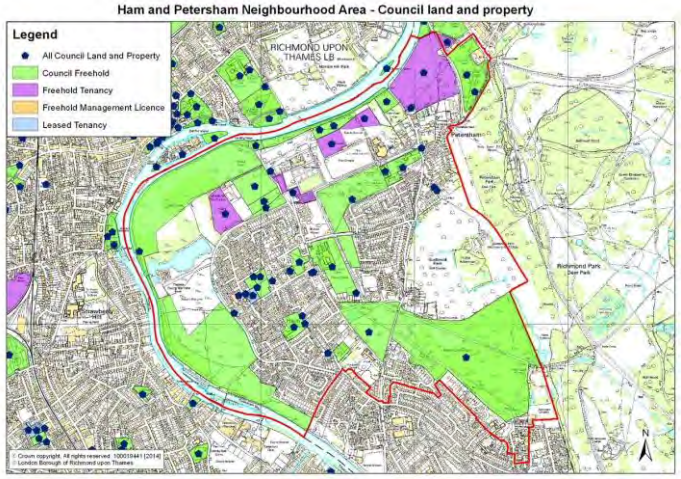
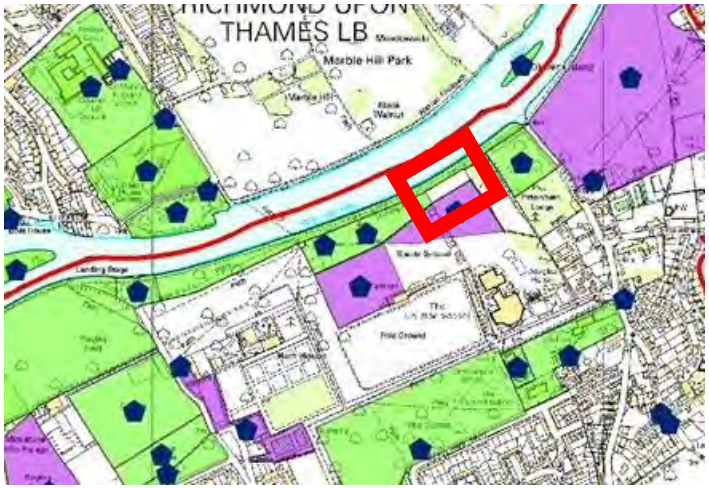


Figure 4-12: Land ownership



4.4 Road collision analysis

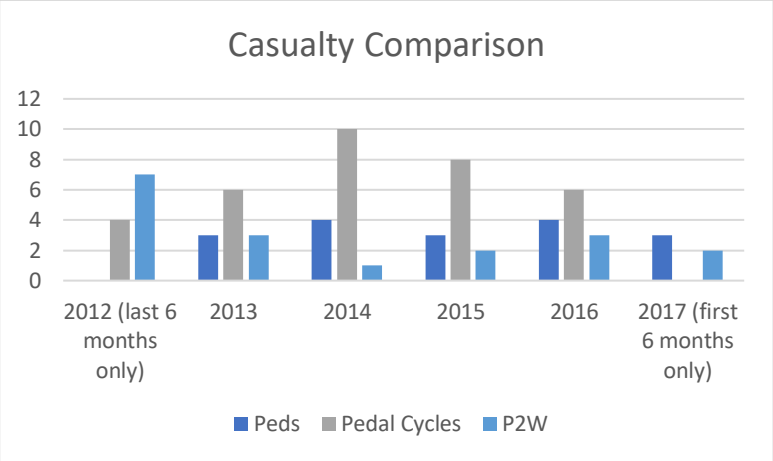
The latest 60 months data shows that there has been a total of 115 collisions within and on the project boundary. Table 5-1 shows a breakdown of casualties by year, severity, road user groups and carriageway conditions.

Table 4-1: Summary of casualty data

12 month period	All	KSI		Peds	Pedal Cycles	P2W	Dark	Wet	Ice/ Frost
2012 (last 6 months only)	23	8		0	4	7	8	5	0
2013	19	1		3	6	3	3	2	1
2014	26	0		4	10	1	5	6	0
2015	18	4		3	8	2	6	6	0
2016	20	3		4	6	3	5	3	1
2017 (first 6 months only)	9	0		3	0	2	1	1	1
Total	115	16		17	34	18	28	23	3

A total of 115 casualties were recorded within the study area, comprising 99 slight, 16 serious, 0 fatal. It should be noted that the data only includes recorded collisions which resulted in personal injury, therefore collisions which go unreported and/or only resulted in material damage are not included in the data analysed.

Table 4-2: Annual comparison of vulnerable casualties



4.4.1 Collision/casualty hotspot summary

Reviewing the casualties by location shows a relatively uniform distribution across the main corridors, with the expected concentrations around the busiest junctions. High cycle numbers are recorded in roads close to Richmond Park which is likely associated with the high volumes of sports cyclists accessing the park, however high proportions can also be found in Ham and Petersham, notably Ham Street, Ham Common and Dukes Avenue/Riverside. High pedestrian casualties are concentrated along the A307, which is a cause of major severance in the area as it has limited crossing points.

Table 4-3: Casualty locations

Location	Total	Slight	KSI	Ped	Cyclist	MC
A307 (Richmond Road, Upper Ham Road, Petersham Road & Hill Rise)	57	52	5	10	6	11
Star and Garter Hill	5	5	0	0	2	1
Richmond Hill	7	7	0	1	5	1
Queens Road	7	5	2	0	5	2
Ham Gate Avenue	4	3	1	1	2	0
Ham Street & Ham Common	14	12	2	1	6	2
Ashburnham Avenue	5	5	0	2	0	1
Dukes Avenue & Riverside	7	7	0	0	3	0
River Lane	2	1	1	0	2	0
Lock Road	3	3	0	2	1	0
Other	4	3	1	0	2	0

4.4.2 Interventions to reduce collisions

- Junction improvements targeting key hotspots at Ham Parade (Ham Cross), Ham Common/Ham Street, Petersham Road/Sandy Lane, Petersham Road/River Lane, Petersham Road/Star and Garter Hill, Ham Street/Ashburnham Road, Ham Gate Avenue/Church Road.
- Traffic calming and 20mph speed limits – slow motor traffic speeds by reducing the speed limit and introducing cycle and bus friendly traffic calming
- Segregated cycling facilities – provide routes that enable people cycling to avoid busy roads and junctions where they must mix with motor traffic
- Side street treatments – tight geometry to reduce turning speeds and narrow crossing distances. Continuous footways to support pedestrian and cycle priority.
- Pedestrian and cycle crossing at desire lines.

Figure 4-13: All collisions

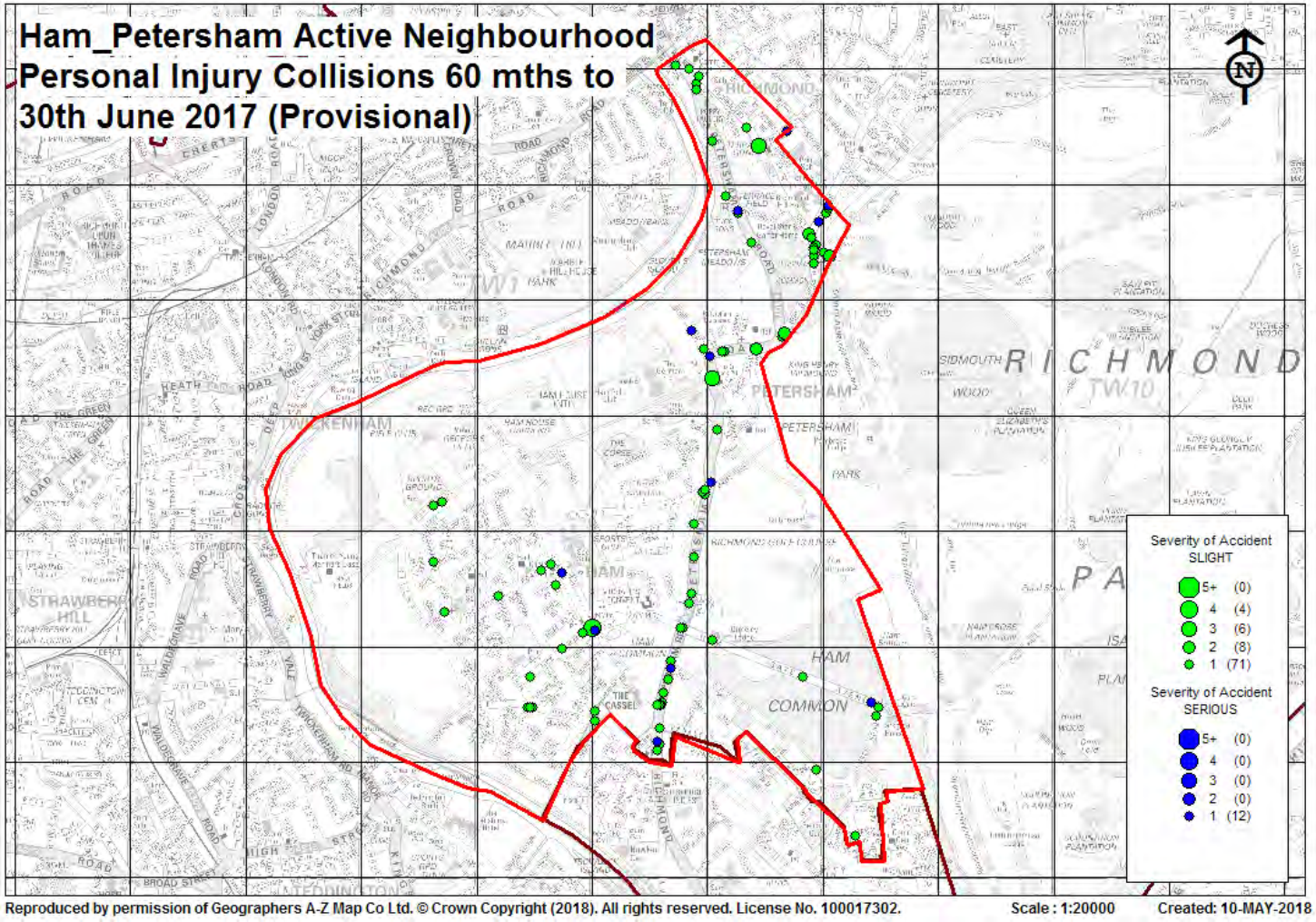


Figure 4-14: Cycle casualties

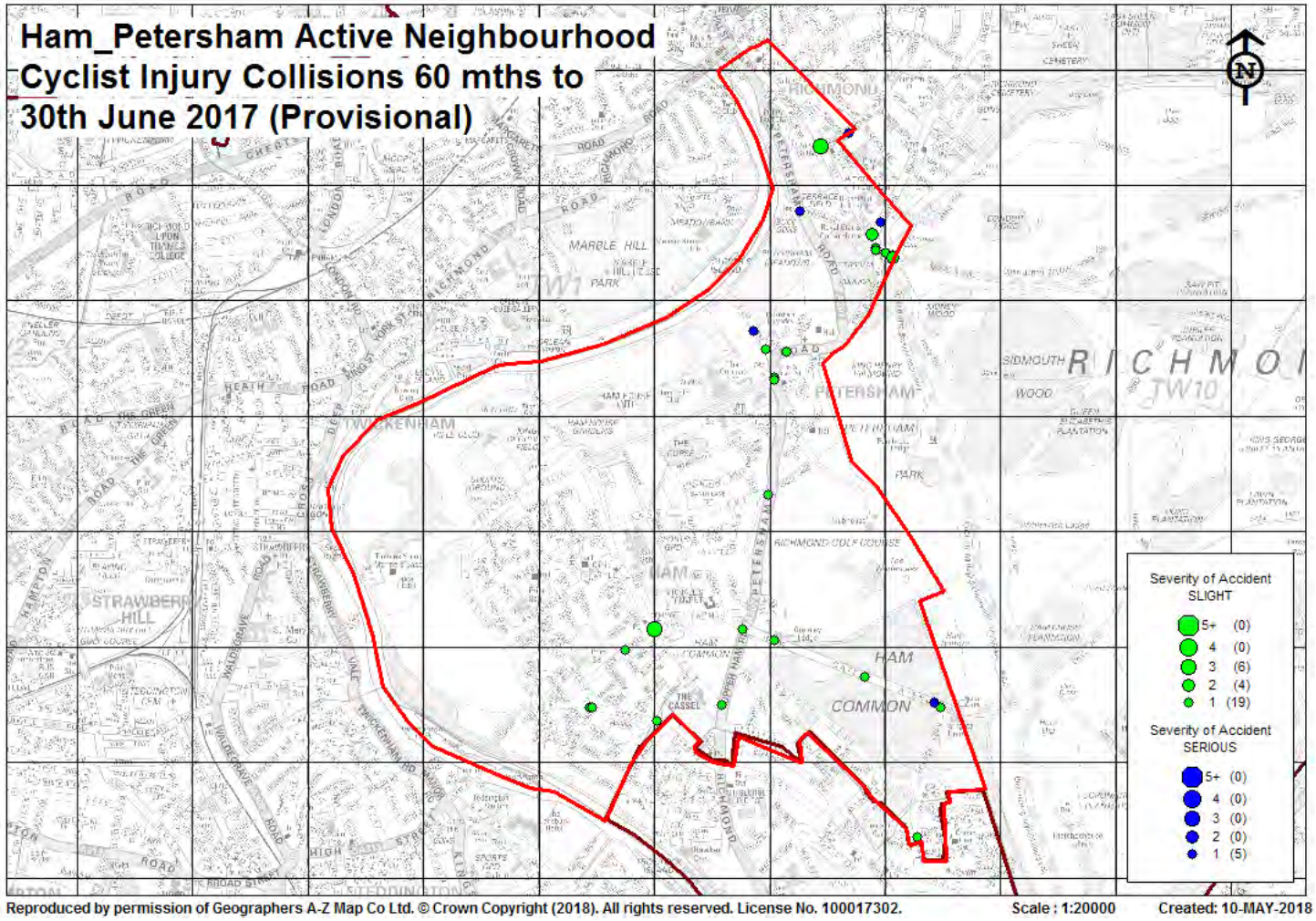
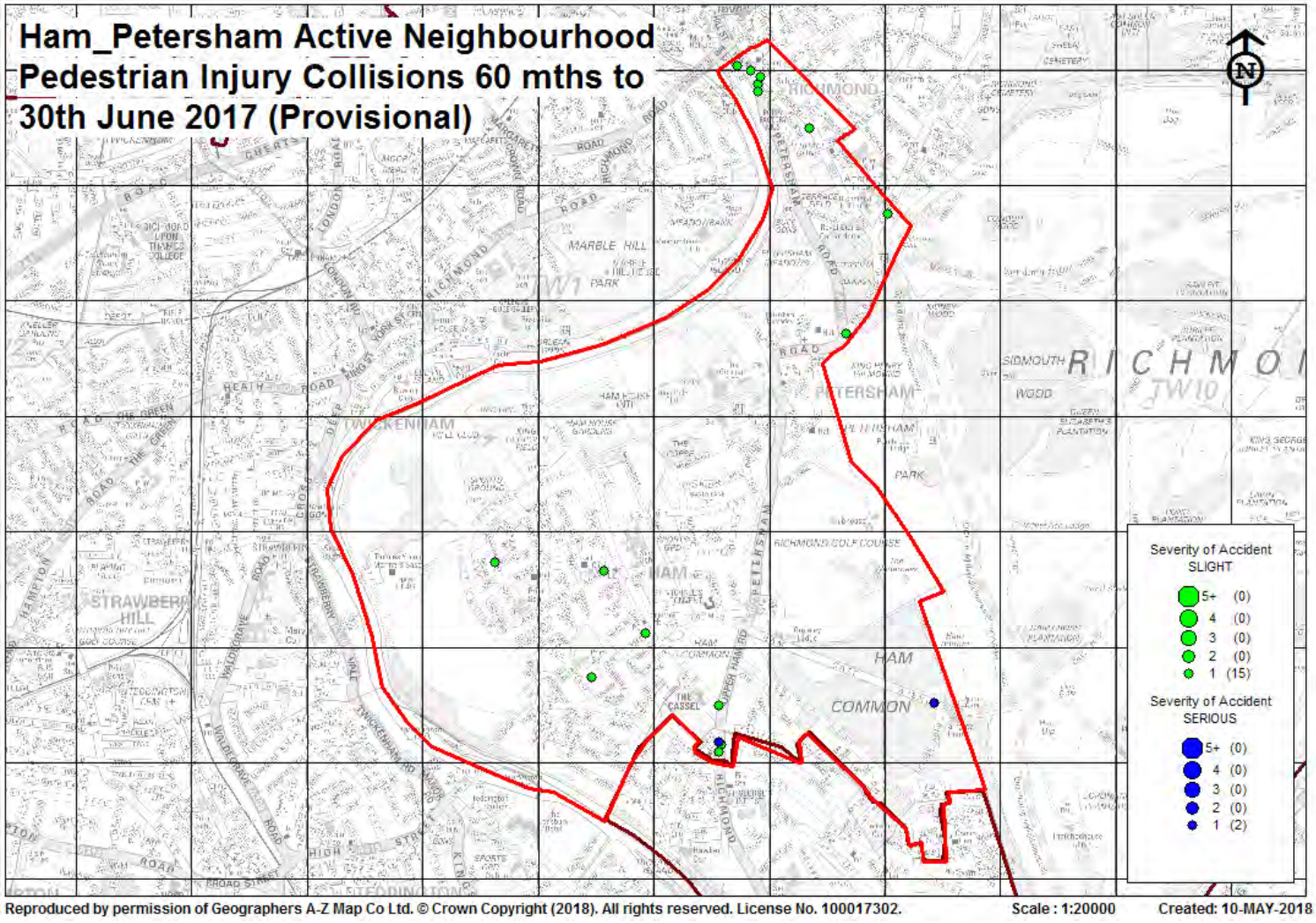


Figure 4-15: Pedestrian casualties



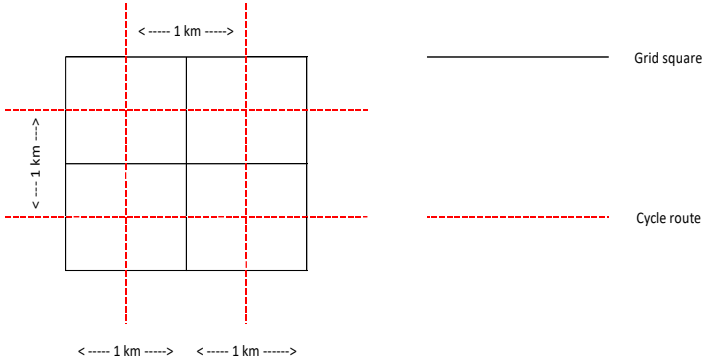
4.5 Cycle route mesh density

4.5.1 The form of a cycle network can be a key indicator in its fitness for purpose. This study, therefore, has analysed the form of the emerging network to determine its mesh density. Mesh density is a measure of how close together cycle routes are, and therefore how easy it is to reach them from an origin.

4.5.2 Mesh density in the emerging network is necessarily less dense than it would be in a fully-developed network. Mesh density would also reflect local conditions. There are significant expanses of open land in Ham. It is therefore expected that a lower mesh density would be found in those areas, as these locations are not heavily populated.

4.5.3 Mesh density has been calculated using cell analysis techniques set out in the London Cycle Design Standards.

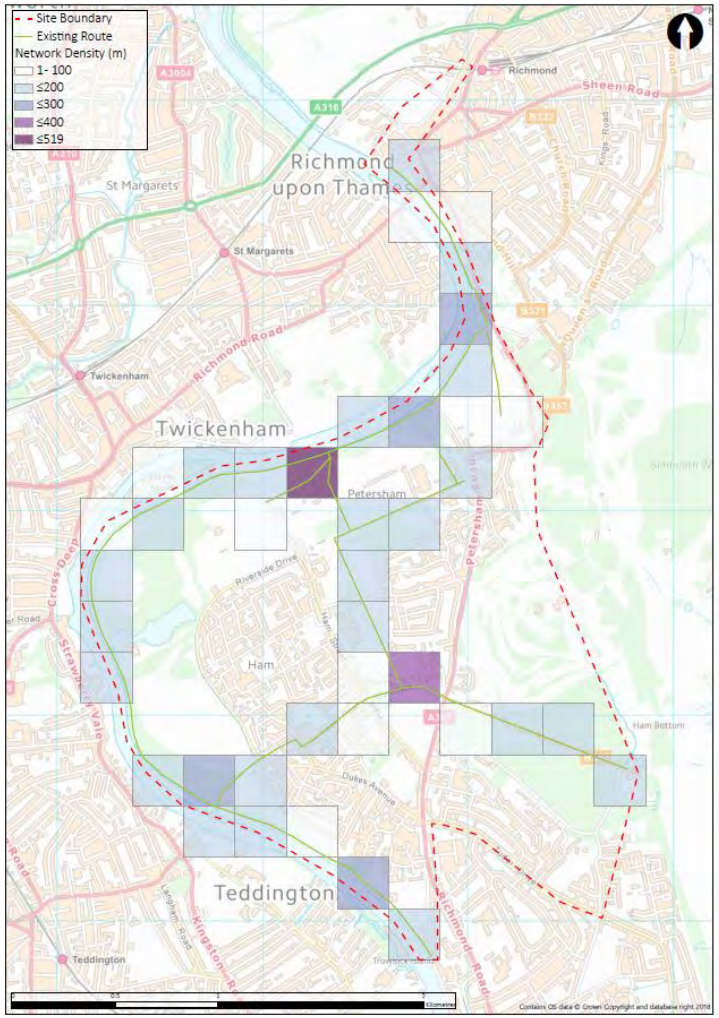
4.5.4 The cell analysis method divides the area into an equal grid, and the length of cycle route within each grid square is measured. The total length is then represented in each square as a heat map. This, therefore, gives an indication of how comprehensively covered the district is. With a target mesh density of 1km, there should be at least 2km of cycle route in each 1km grid square.



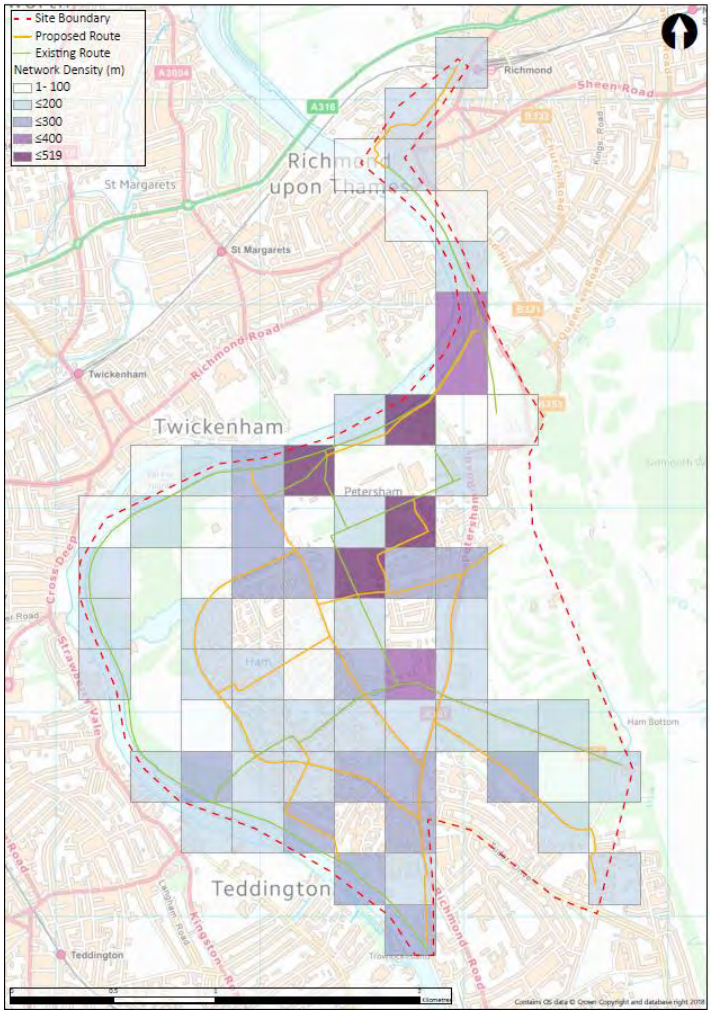
4.5.5 A network that is accessible has the greatest potential to attract users as people can quickly find themselves on a cycle route, and closely spaced connections to other routes opens the possibility of accessing a wide range of destinations.

4.5.6 Figure 4-16 demonstrates that existing network even with the yet to be built Quietway has a low mesh density with limited connectivity into Richmond town centre. Ham parade and the local schools are also not connected to residential neighbourhoods, however applying this methodology to the emerging network, Figure 4-17 shows a much denser mesh density based and provides full access in the neighbourhood and into Richmond town centre. It also enables access to Lower Ham Road in Kingston which is a low traffic and direct route into Kingston Town centre.

Figure 4-16: Existing cycle network density (includes Q21)



Density Figure 4-17: Existing and proposed cycle network density



4.6 Cycling porosity analysis

4.6.1 Ham and Petersham Residential cells

Area porosity is a measure of how many places there are for cyclists to enter, pass through and leave an area comfortably. A location that is 'porous' is a space that cyclists can pass through with ease and comfort. If the porosity of an area is high, then overall it is very permeable for cyclists (but often less so for other vehicles).

Comfortable access points onto suitable cycle infrastructure are marked in Figure 4-18 as green gateways. Where neighbourhoods have no gateways onto cycle network, then they are coloured red. Where they have one gateway, they are coloured orange and where they have two or more, they are coloured green. Rather than focussing on routes, this method shows the porosity of an area by highlighting different crossing options on different streets. This approach is particularly useful when planning routes to schools as it allows children and their parents to be clear about the standard of roads they will encounter and where key crossings are.

Figure 4-18 demonstrates that most neighbourhoods have no or very limited access to safe cycle routes, the only neighbourhood showing two access points is based on the delivery of Quietway 21.

Figure 4-18: Existing residential cell cycle porosity (includes QW21)

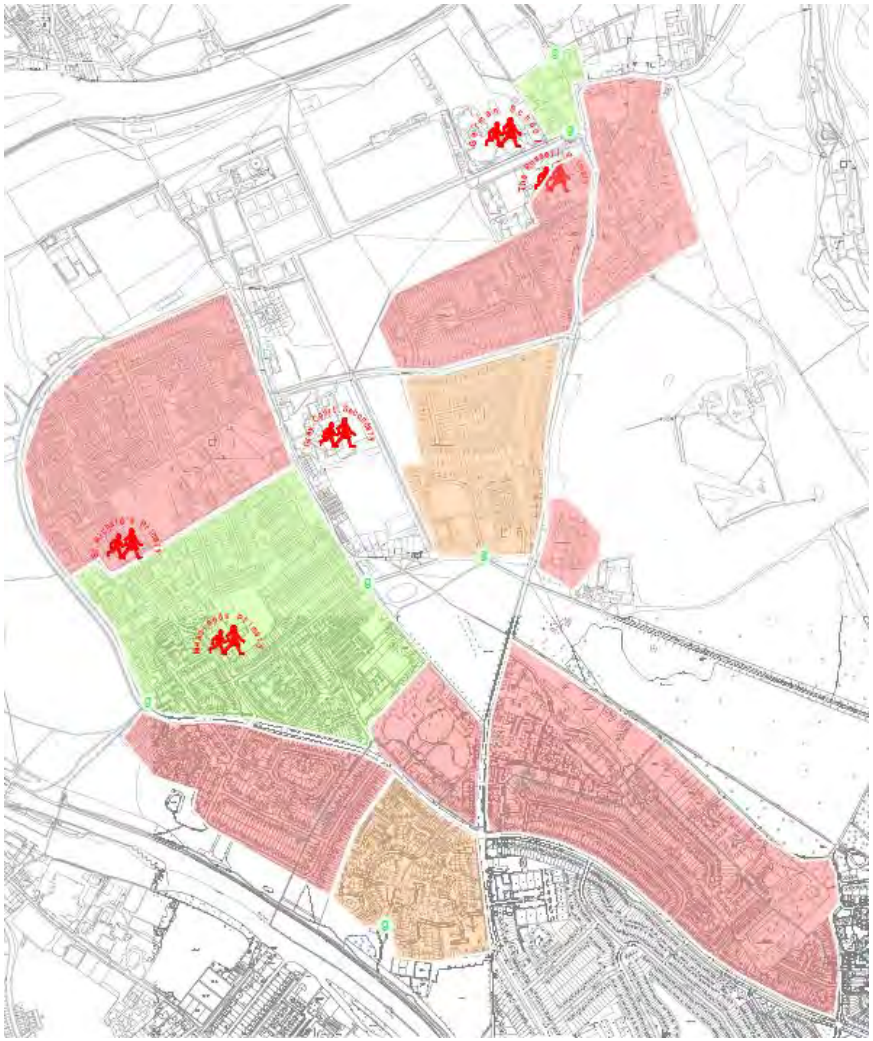


Figure 4-19: Residential cell cycle porosity based on emerging network

Figure 4-19 demonstrates the high porosity a comprehensive cycle network can achieve. Every neighbourhood is provided access to the emerging cycle network.

4.6.2 Area wide porosity

Ham and Petersham's inaccessibility has been identified as both a virtue and a constraint. Access for cycling and walking to the surrounding town centres is severed by The River Thames to the west, Richmond Park to the east and steep topography and constrained road space to the north. Teddington Lock provides good pedestrian access, but cyclists require dismounting as the approach ramps and bridge deck are not suitable for cycling.

Figure 4-20: Teddington Lock footbridge

4.6.3 Topography and the Thames River

Figure 4-21: PTC graph on how cycle commuting relates to distance and hilliness (based on Census 2011 Travel to Work data)

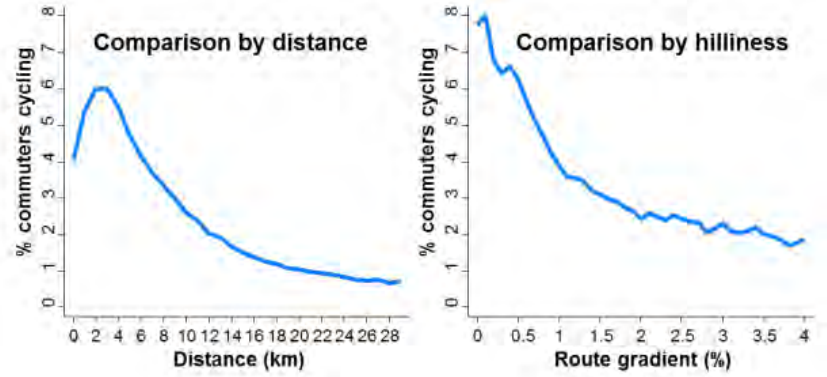
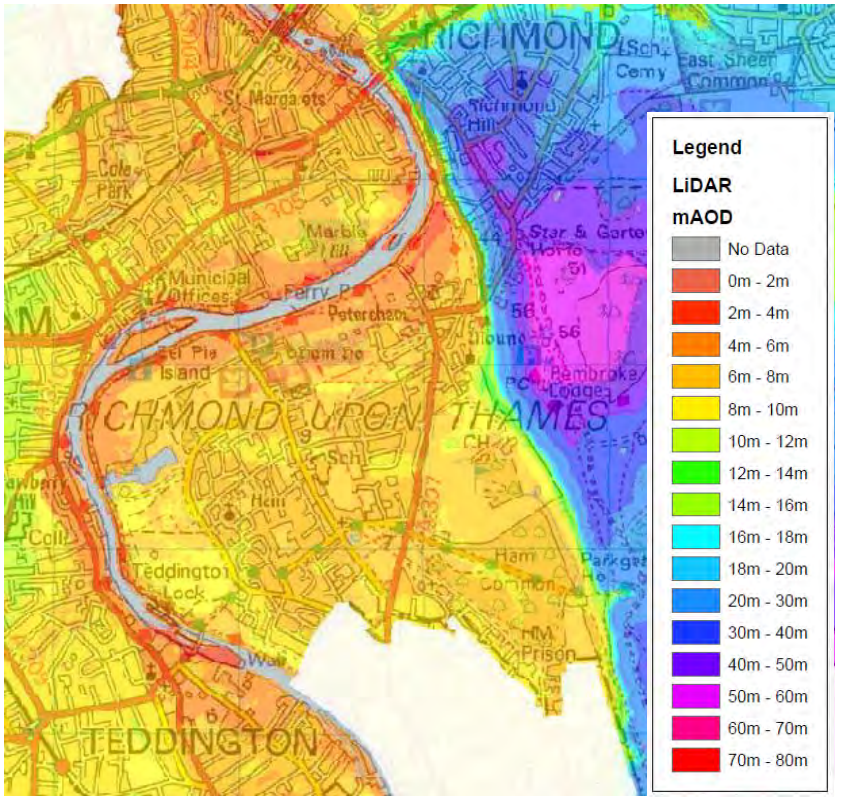


Figure 4-21 shows how the likelihood of cycling declines, as distance and hilliness grow. Figure 4-22 demonstrates that a strategic cycle route between Richmond and Kingston should align with a direct route through the Ham and Petersham to avoid significant hills to east.

Figure 4-22 also demonstrates the limited flat access into Richmond from the south. For a cycle route to avoid steep topography its limited to the riverside space between the Thames and Richmond Hill as Petersham Road is very narrow with no available space for dedicated cycle provision. An alternative route would be a cycle/footbridge between Ham and Twickenham with access via the Warren path, which is well surfaced, protected from heavy flooding and lit.

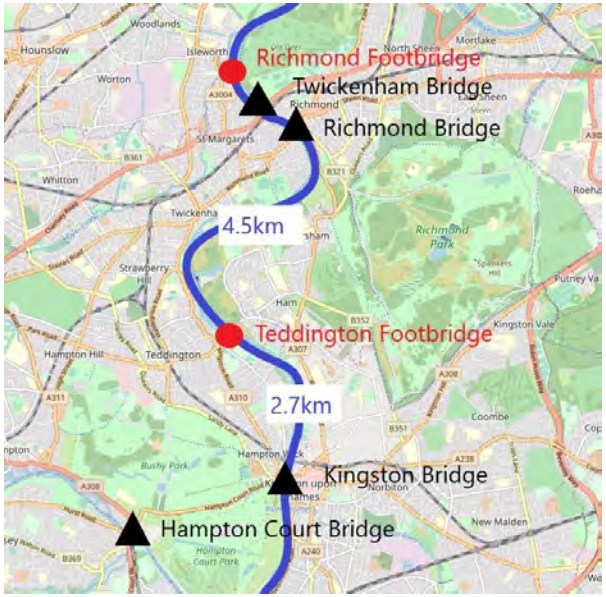
Figure 4-22: Ham and Petersham Topography



4.6.4 River crossings

There are no river crossings between Richmond and Kingston that facilitate cycle movements. Teddington Lock provides pedestrian access, but cyclists are required to dismount as the bridge structure is unsuitable for shared cycle and pedestrian use. A pay-to-use ferry crossing between Ham and Twickenham operates but is not considered to be a viable or inclusive connection for supporting active travel growth as it only operates seasonally and is limited to certain times of the day, therefore, it does not form part of this study.

Figure 4-23: Distances between existing river crossings in Ham area



4.6.5 Flooding

Figure 4-25 locates the various flood zones in the Ham and Petersham area, flood zone 3b's are classified as functional floodplain where water flows or is stored in times of flood and are deemed to be the most at risk land of flooding from rivers. Sections of Towpath and River Lane are located well within this zone.

Figure 4-24: Towpath flooding at River Lane

Figure 4-25: Richmond, Twickenham and Petersham flood risk

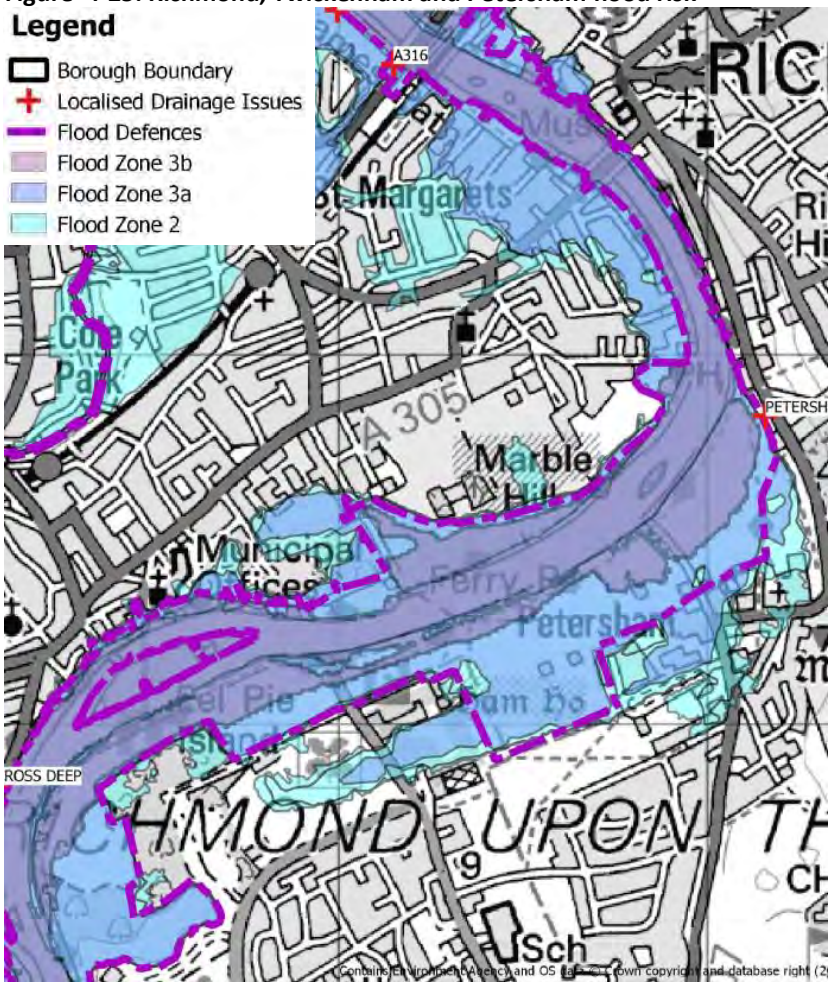
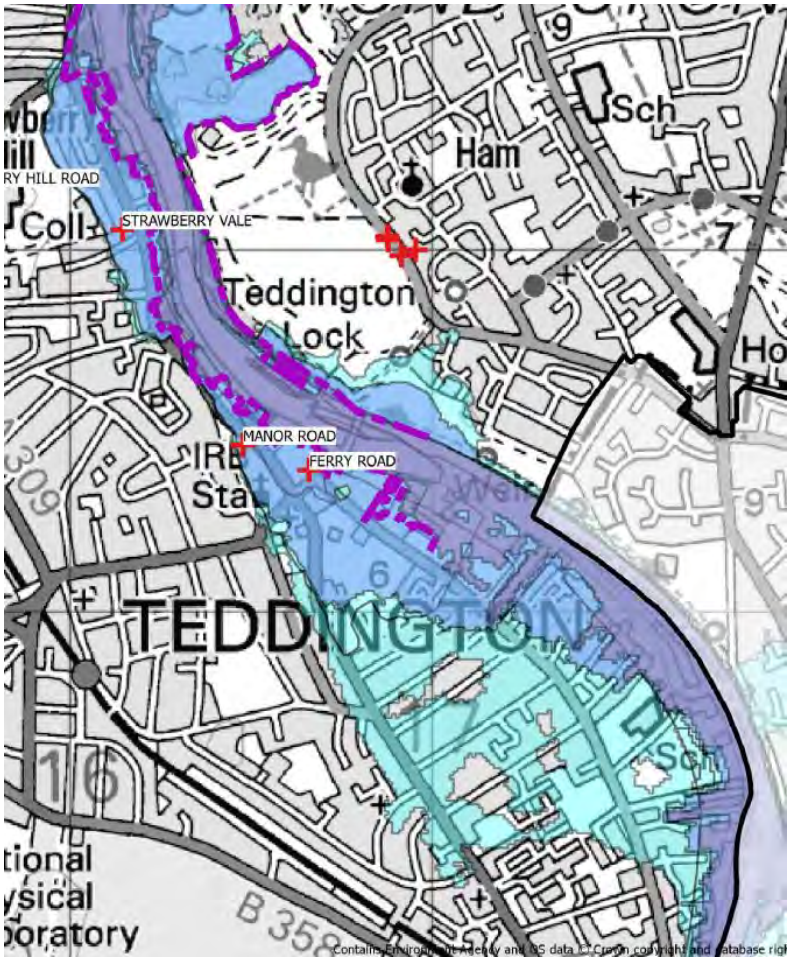


Figure 4-26: Teddington area flood risk



4.7 Cycling Level of Service (CLoS)

Off-highway and quite residential streets have not been reviewed as part of this study.

Junction Assessment

Rideability through junction based on Level of Service Assessment

Banned or dangerous for people cycling
Scoring - Low (eg less than 40%)

Suitable for most people cycling
Scoring - Intermediate (eg 40-70%)

Suitable for less confident cyclists & children
Scoring - High (eg more that 70%)

Link Assessment

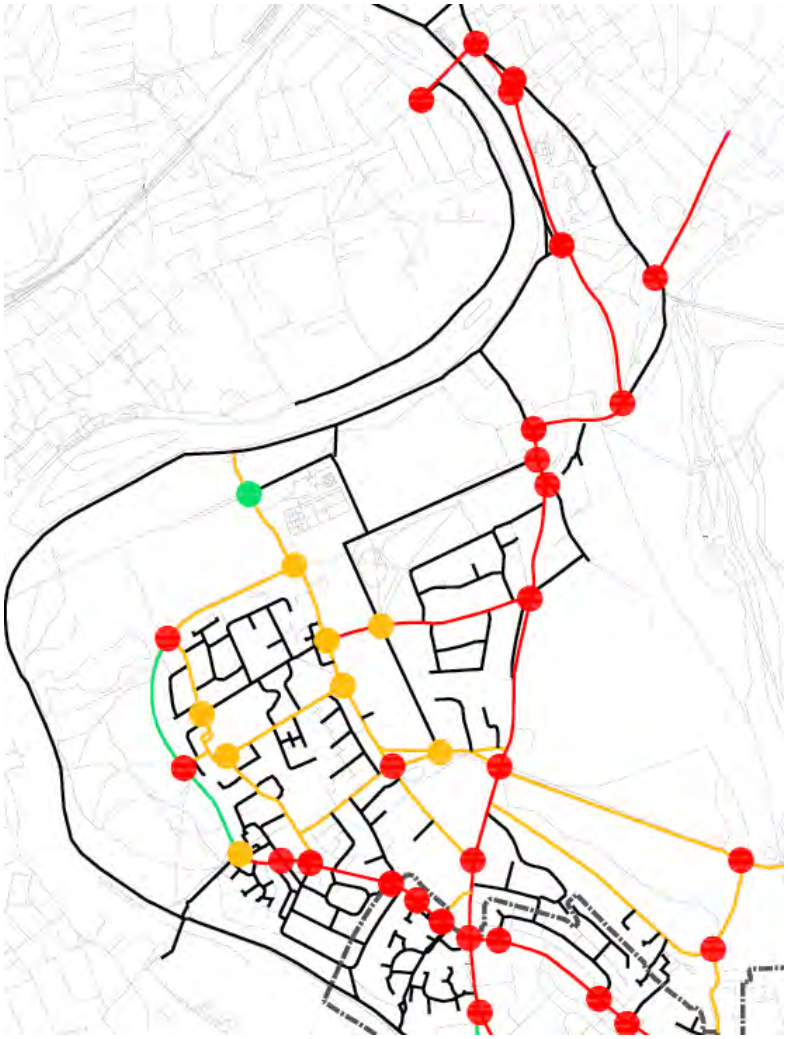
Rideability through junction based on Level of Service Assessment

Banned or dangerous for people cycling
Scoring - Low (eg less than 40%)

Suitable for most people cycling
Scoring - Intermediate (eg 40-70%)

Suitable for less confident cyclists & children
Scoring - High (eg more that 70%)

Figure 4-27: Existing network CLoS



5 Emerging Network

5.1 Design Principles

5.1.1 This study considers the form of the network and if it serves the key demand corridors identified. It also considers how well the network fulfils the five key criteria of the Dutch best practice CROW manual. These criteria have since been adopted in the London Cycling Design Standards (LCDS). The key criteria are:

- **Coherence:** Cycle networks shall link trip origins and destinations, including public transport access points and shall be continuous and easy to navigate.
- **Directness:** Cycle networks shall serve all the main destinations and shall seek to offer an advantage in terms of distance and journey time.
- **Comfort:** Infrastructure shall meet design standards for alignment and surface quality, and cater for all types of user, including children and disabled people.
- **Attractiveness:** Aesthetics, noise reduction and integration with surrounding areas are important.
- **Safety:** Cycle networks shall not only improve cyclists' and other road users' safety, but also their feeling of how safe the environment is.

5.1.2 In network terms, a coherent network will have routes that are integrated. The LCDS guiding principle of a mesh density of 400m, or 1000m in an emerging network, means that people do not have to travel long distance to access a designated cycle route. This is an integral part of the coherence of a cycle network.

5.1.3 This review's process of establishing demand corridors fulfils the requirement for directness, as our analysis has identified the key destinations. Therefore, the recommended network will propose schemes and links that fulfil these demands.

5.1.4 The final three criteria are functions of the design of links, however, in planning a network, these have also been considered in the route selection process in Appendix C.

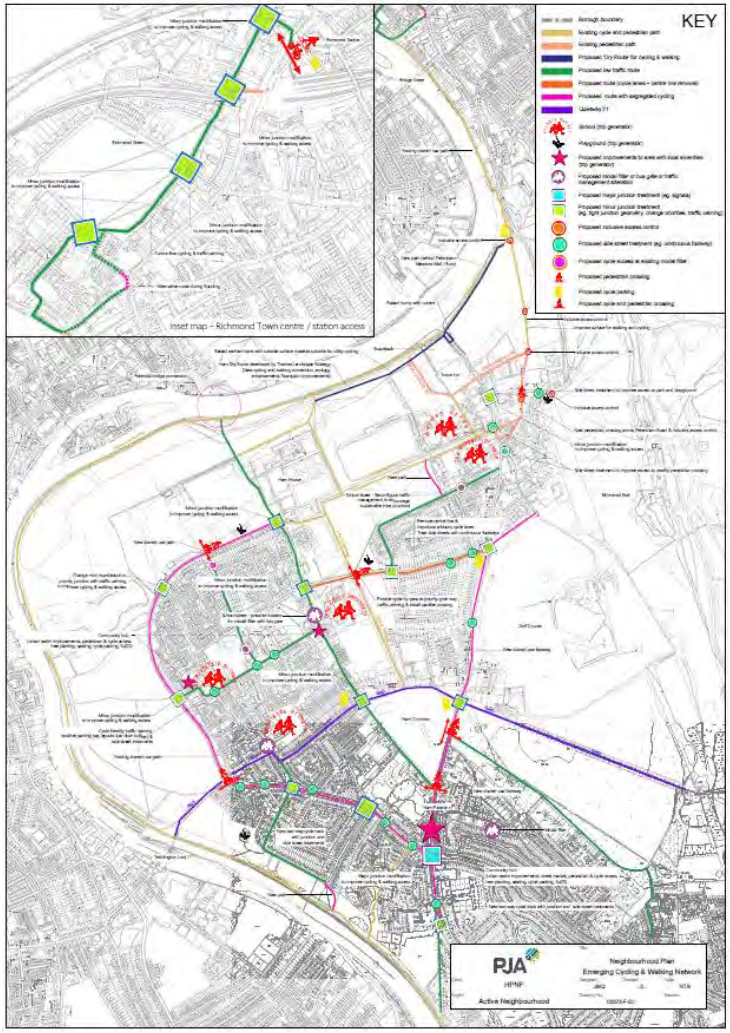
5.2 Cycling and walking network plan

To address the network gaps and identified issues, an emerging cycling and walking network has been developed (Figure 5-1) in close dialogue with stakeholders. Three strategic route options (Appendix B) were proposed by residents and stakeholders during the design workshops and consultation, these are analysed further in Appendix B and C, it should be noted that Land ownership, ecological assessments and other potential restrictions or issues affecting feasibility have not been verified by this study.

The network is formed of existing/proposed routes such as Quietway 21 and towpath along the river Thames, but new links are identified to build up a coherent and direct network in line with the Mayor's Transport Strategy targets. Fundamentally the network aims to provide inclusive access to public transport connections while also linking neighbourhoods with key destinations such as schools, shopping parades and the surrounding town centres. To complement the emerging network low traffic neighbourhoods and school streets are suggested, these are detailed in later in this chapter. A preferred strategic route connecting Richmond and Kingston through Ham & Petersham has also been identified using the LCWIP route selection tool and incorporated into the emerging network plan, this is documented in Appendix B.

The proposed network incorporates the 'Dry Route' developed by the Thames Landscape Strategy which provides a viable alternative to the Towpath in areas where flooding restricts cycling and walking movement. We recommend that the route is designed to accommodate everyday utility cycling by ensuring that the path is wide enough with suitable surfacing and is lit (subject to ecological study). More information regarding design recommendations can be found later in this chapter.

Figure 5-1: Proposed network plan (Appendix D)



5.3 Infrastructure proposals

5.3.1 To address the network gaps identified above, a number of suggested schemes have been identified. The project bank in the next page contains descriptions of recommended interventions that align with the following scheme types:

- Strategic cycle route
- Local cycling and walking links
- Low traffic neighbourhoods
- Town centres/neighbourhood hubs

5.3.2 The schemes have been developed on the principle of maximising use of the self-evident primary and secondary street network so that the cycling and walking network is as legible and as familiar as possible. This, therefore, requires dedicated space for cycling to be provided on main roads where space allows, in places such as Petersham where this is not possible, motor traffic-free routes are suggested.

5.3.3 Appendix C appraises three potential cycle routes in Ham & Petersham with the aim of linking Richmond and Kingston town centres, using the Department for Transport's (DfT) Route Selection Tool (RST). The RST is presented as part of the DfT's process guidance for developing Local Cycling and Walking Infrastructure Plans (LCWIPs). The RST is intended to assist planners to determine the best initial option to fulfil a particular cycling corridor.

5.3.4 The assessment concludes that all three options are of high quality with option 3 marginally scoring the highest, however, this route relies on potential land ownership acquisitions, therefore, option 2 is therefore selected as preferred as it considered to be the most deliverable in terms of risk and cost. Route alignments and intervention types have been suggested for costing and feasibility purposes only. Local knowledge may influence different route choices and typologies, but it is recommended that the Route Selection Tool process from the DfT's LCWIP guidance is followed when deciding between two or more possible routes.

5.3.5 Early feedback from the Quietway and Mini-Holland consultations suggest that the processes can be difficult because the typology of street affected – normally a residential street – does not lend itself to being considered as a "route". Therefore, it may be helpful to consult more widely and generally on street improvements and enhancements to achieve a strong local consensus on the need for change, within which a local route would then naturally align itself.

5.4 Project Bank

	Project	Location	Description	Next steps	Cost Estimate	Delivery difficulty (risk)	Comment	Identified funding opportunities / avenues
1a	Strategic cycle route	Richmond Road (south of Ham cross, LBK) Option 1	Upgrade existing two-way cycle track to connect Ham Cross into Lower Ham Road. Side street treatments and new pedestrian crossings	RBK corridor study.	£200k	Low		RBK corridor study, included in draft LIP with value of £120k
1b	Strategic cycle route	Richmond Road (south of Ham cross, LBK) Option 2	With-flow cycle tracks to connect Ham Cross into Lower Ham Road. Side street treatments and new pedestrian crossings	RBK corridor study	£400k	Low		RBK corridor study, included in draft LIP with value of £120k
2a	Strategic cycle route / Town centre	Ham Parade (incl Ham Cross) Option 1	Town centre urban realm improvements with two-way cycle track, new pedestrian crossings, improved bus stop accessibility	Engagement with RBK corridor study. Local business and resident engagement, traffic and car parking surveys, retail travel surveys to support concept design.	£1.5m	Medium	Junction capacity assessments (traffic modelling) required.	RBK corridor study, included in draft LIP with value of £120k. LBRuT Liveable Neighbourhood bid to TFL or corridor scheme through future LIP
2b	Strategic cycle route / Town centre	Ham Parade (incl Ham Cross) Option 2	Town centre urban realm improvements with uni-directional cycle track, new pedestrian crossings, improved bus stop accessibility	Engagement with RBK corridor study. Local business and resident engagement, traffic and car parking surveys, retail travel surveys to support concept design.	£1.5m	Medium	Junction capacity assessments (traffic modelling) required	RBK corridor study, included in draft LIP with value of £120k. LBRuT Liveable Neighbourhood bid to TFL or corridor scheme through future LIP
3	Strategic cycle route	Dukes Avenue	Two-way cycle track with continuous footways at side streets. 2 x parallel zebra, junction treatment at junction Ashburnham Rd. Tie into existing shared-use path	Concept design and consultation	£500k	Low		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.

	Project	Location	Description	Next steps	Cost Estimate	Delivery difficulty (risk)	Comment	Identified funding opportunities / avenues
4	Strategic cycle route	The Dry Route - Queen Elizabeth Meadows, Petersham Lodge Woods	Expand Thames Strategy project to ensure the proposed dry route is suitable for utility cycling. Path to have adequate width for cycling and walking, suitable surface materials and inclusive access controls	Thames Landscape Strategy engagement, Land ownership agreements, Environmental agency engagement, ecological assessments, stakeholder engagement, concept design	£500k	Medium	Project aspirations have already been discussed with key stakeholders	Future LBRuT LIP, TfL road safety, Liveable neighbourhoods. TfL/GLA Greener City fund.
5	Strategic cycle route	Tow path - Richmond Town Centre & Rail station	Permit contra-flow at The Green, junction & side street junctions. Short protected cycle provision to support alternative route avoiding flooding	Community engagement & concept design	£500k	Medium		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods. Richmond Town centre development contributions
				Sub-total	£3.2m			
6	Local cycling and walking route	A307 (between Ham Common and Sandy Lane	Creation of shared-use path where there is no footway or cycle provision. Space taken from carriageway to avoid impacting on Common Land. Lamp column relocation Parallel zebra	Concept design and consultation, localised car parking study	£200k	Low	Works close to common land	Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
7	Local cycling and walking route	Sandy Lane	Cycle lanes with centre line removal, junction treatment at junction with A307, side street treatments, new crossing at bridleway, sinusoidal road humps. New crossing to link Hazel Lane	Concept design and consultation	£200k	Low	Junction capacity assessments (traffic modelling) required	Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
8	Local cycling and walking route	Petersham Road (between Sandy Lane and Star and Garter Hill)	Parallel zebra, inclusive access controls, physiological traffic calming – centre line removal. 2 x side street treatments	Concept design and consultation, traffic surveys	£200k	Low		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.

	Project	Location	Description	Next steps	Cost Estimate	Delivery difficulty (risk)	Comment	Identified funding opportunities / avenues
9	Local cycling and walking route / Low traffic neighbourhood	Ham Street	Bus gate, junction treatment at Ham Common/Lock Road	Concept design and consultation, site trials, traffic study, car parking study	£75k	Medium	Automatic Number Plate Recognition (ANPR) cameras may be required to support bus gate proposal	Ham close development contributions, Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
10	Local cycling and walking route	Ashburnham Road	Shared-use path for school access, junction treatments, side street treatments, bus and cycle-friendly traffic calming	Concept design and consultation	£200k	Low		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
11	Local cycling and walking route	Towpath connection at Burnell Ave and Dysart Ave	200m bound shared-use path	Concept design and consultation	£50k	Medium		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
12	Local cycling and walking route	Ham towpath improvements	Surfacing improvements & sensitive lighting. Conversion of footpath to shared-use path	Feasibility study for the low-level lighting as it's an ecologically sensitive area. consultation	£200k	Medium		LBRuT planned maintenance budget, Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
13	Local cycling and walking route	Petersham Meadows -	Inclusive access controls such as cycle-friendly cattle grids Pedestrian path resurfacing	Stakeholder engagement, concept design	£50k	Medium	Project aspirations have already been discussed with key stakeholders	Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
14	Local cycling and walking route	Meadlands drive / Bridleway connection	165m bound path connecting Russell school and bridleway School Street	Stakeholder engagement & concept design	£50k	Low		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
15	Local cycling and walking route	Cycle parking	Consolidation of cycle parking at Ham Parade, cycle parking at St Richard's Parade, Back Lane shops	Concept design	£50k	Low		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.

	Project	Location	Description	Next steps	Cost Estimate	Delivery difficulty (risk)	Comment	Identified funding opportunities / avenues
			new sheltered cycle parking close to key bus stops. On-street cycle hangers					
				Sub-total	£1.3m			
16	Low traffic neighbourhood	Parkleys & Barnfield Avenue	Modal filter	Community engagement & concept design. Traffic study	£10k	Medium		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
17	Low traffic neighbourhood	Broughton Avenue and Lock Road	Time-based modal filters (school street). Convert existing traffic calming to sinusoidal road humps in Lock Road	Community and stakeholder engagement. Traffic study	£50k	Medium		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
18	Low traffic neighbourhood	Area-wide	Area-wide 20mph speed limit.	LBRuT currently undertaking a consultation on a borough-wide 20mph speed limit (excluding TLRN)	£0k	Medium		Current LBRuT scheme
18	Low traffic neighbourhood	Closed street between Stuart Rd and Riverside Drive	Inclusive access control	Concept design	£5k	Low		Future LBRuT LIP, TfL road safety, Liveable neighbourhoods.
				Sub-total	£65k			
				Total	£4m			

5.5 Scheme details

5.5.1 A307 (between Ham Cross and Lower Ham Road) option 1

Location: https://goo.gl/maps/Cn75eDACCU12

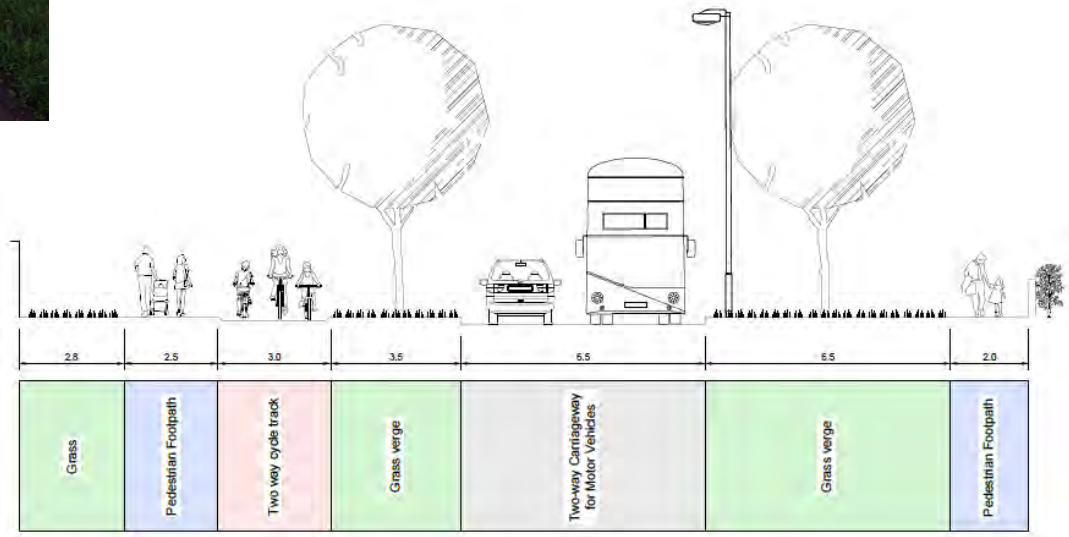
Proposals:

- 3m two-way cycle track on western verge
- Safe transitions at junctions
- Side street treatments
- New pedestrian and cycle crossings
- Way-finding
- Bus stop by-pass

Comments:

- Design sketches for this section can be found in Appendix E.
- Cycle route ties Ham cross with Lower Ham Road which is an existing low traffic route into Kingston town centre, sections of which are traffic free. Little infrastructure change is required in Lower Ham Road, but improvements should be made to cycle transitions and way-finding.

Figure 5-2: proposal cross section



5.5.2 A307 (between Ham Cross and Lower Ham Road) option 2

Location: https://goo.gl/maps/Cn75eDACCU12

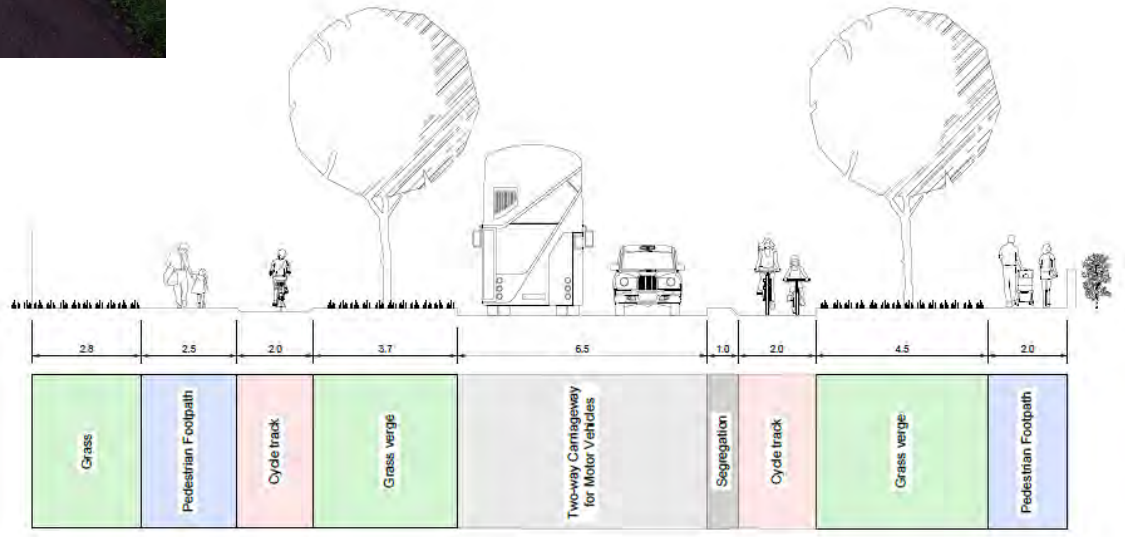
Proposals:

- 2m with-flow cycle tracks (uni-directional)
- Safe transitions at junctions
- Side street treatments
- New pedestrian and cycle crossings
- Way-finding
- Bus stop by-pass

Comments:

- Design sketches for this section can be found in Appendix E.
- Cycle route ties Ham cross with Lower Ham Road which is an existing low traffic route into Kingston town centre, sections of which are traffic free. Little infrastructure change is required in Lower Ham Road, but improvements should be made to cycle transitions and way-finding.

Figure 5-3: Proposal cross section



https://goo.gl/maps/ZfNsnHEkzTG2

Design aim

- Inclusive community focal point
- Improve connectivity for people cycling and walking by providing:
  - Wider footways
  - New pedestrian/cycle crossings at desire lines
  - Dedicated cycle tracks
  - Segregated cycling at Ham Cross junction
  - Better bus stops access
  - De-cluttering and consolidation of street furniture
  - New pedestrian/cycle crossings at desire lines
- New space to support local cafes to have outdoor seating and tables
- Better and inclusive cycle parking
- Narrow general traffic carriageway to support traffic speed reduction but suitable for bus access
- New tree planting, seating & shade
- New low-level lighting and feature lighting
- New pedestrian/cycle crossings at desire lines
- New space for market stalls
- Retention of some car parking and servicing space to support local business
- Relocation of Sainsbury's loading bay and bin storage

5.5.4 Ham Parade option 1

Option 1 provides a two-way cycle track along the western footway that connects into an existing cycle track south of Ham Cross that connects Lower Ham Road and would connect to a new path along the edge of Ham Common to the north. A two-way cycle track is proposed in Dukes Avenue to connect Teddington Lock and an existing shared-use path further north. Cyclists and pedestrians share the crossings at Ham Cross but are widened to accommodate mixed use.

Figure 5-4: Healthy Streets Check

	Existing layout	Proposed layout
Pedestrians from all walks of life	50	83
Easy to cross	50	83
Shade and shelter	50	67
Places to stop and rest	67	93
Not too noisy	53	73
People choose to walk, cycle and use public	50	83
People feel safe	50	91
Things to see and do	58	75
People feel relaxed	51	85
Clean Air	50	83
Overall Healthy Streets Check score	51	84
Number of 'zero' scores	2	0

Figure 5-5: Ham Parade option 1 concept sketch

5.5.5 Ham Parade option 2

The main difference from option 1 is that option 2 provides uni-directional cycle tracks that connect into with-flow cycle tracks in Dukes Avenue and Tudor Drive. This layout takes into consideration future with-flow segregated cycle tracks that could be installed in Richmond Road between Ham Cross and Kingston Town centre.

Figure 5-6: Healthy Streets Check (no difference from option 1)

	Existing layout	Proposed layout
Pedestrians from all walks of life	50	83
Easy to cross	50	83
Shade and shelter	50	67
Places to stop and rest	67	93
Not too noisy	53	73
People choose to walk, cycle and use public	50	83
People feel safe	50	91
Things to see and do	58	75
People feel relaxed	51	85
Clean Air	50	83
Overall Healthy Streets Check score	51	84
Number of 'zero' scores	2	0

Figure 5-7: Ham Parade option 2 concept sketch

5.5.6 Dukes Avenue

https://goo.gl/maps/WueqforDKNM2

Proposals

- Bi-directional (two-way) cycle track along the southern edge of the carriageway.
- Side street treatments (continuous footways with cycle track)
- Conversion of mini-roundabout to priority junction with traffic calming
- New pedestrian and cycle crossing
- 2 x Bus stop bypass

Figure 5-8: Proposal cross section

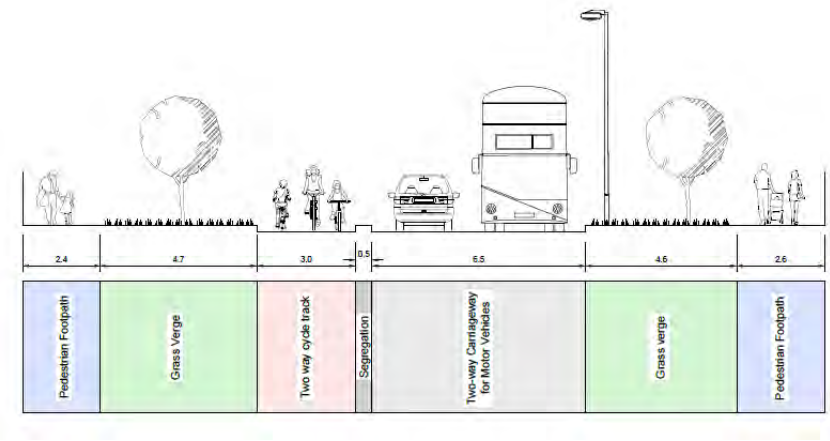


Figure 5-9: Section of Dukes Avenue has an existing shared-use path

5.5.7 The Dry Route

Proposals

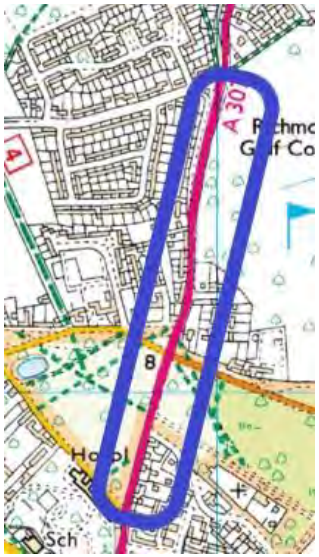
(based on the Thames Landscape Strategy proposals in Appendix F)

- Raised earth bank with a path along Queen Elizabeth's Meadow
- Boardwalk through Petersham Lodge Wood and Sea Scouts land
- Raised hump (with culvert underneath across River Lane)
- Dry route behind Petersham Meadow wall / bund

Figure 5-10: Petersham Meadow wall

Figure 5-11: Cycle friendly boardwalk – anti-slip decking boards

5.5.8 A307 (between Ham Common and Sandy Lane)

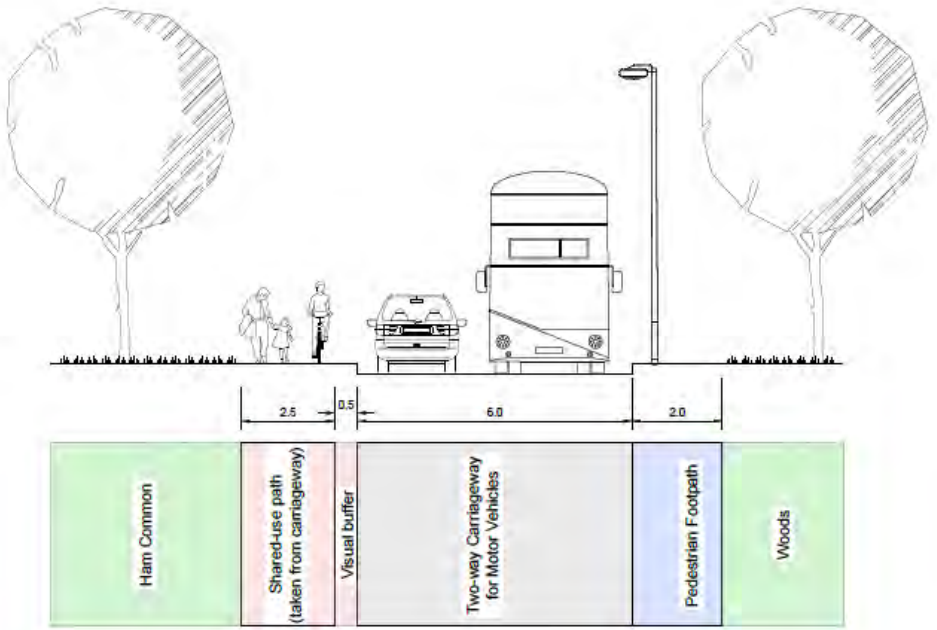


https://goo.gl/maps/RAHqbt8WUv92

Proposal

- Providing connectivity to QW21
- New shared-use path along the edge of Ham common (taking space from the carriageway)
- New shared-use path along western footway between Ham Gate Avenue and Sandy Lane
- New parallel crossing near Church Road and Ham Farm Road (linking new shared-use path)

Figure 5-12: Proposal cross section



5.5.9 Sandy Lane

https://goo.gl/maps/uhyjfk4qMvB2

Proposals

- Centre line removal with advisory cycle lanes (courtesy lanes)
- Parallel zebra linking Ham Avenues (Bridleway)
- Junction improvement to Sandy Lane/A307
- Cycling and walking crossing to Hazel Lane (east of A307)
- Bus and cycle-friendly traffic calming

Figure 5-13: proposal cross section

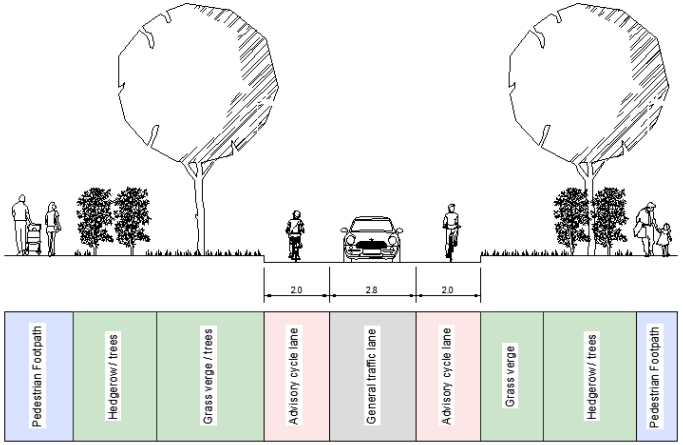


Figure 5-14: Advisory bike lane, Netherlands. (Photo: Andre De Graff)

5.5.10 A307 (Petersham)

https://goo.gl/maps/x8F7njbV62E2

Proposals

- Centre line removal to support speed reduction
- Consistent 20mph speed limit on A307 between Richmond and Ham Parade
- Side street treatments (eg. junction narrowing / raised tables)
- Inclusive access control to Richmond park/playground at Petersham

Figure 5-15: Motor traffic queuing in Petersham Road

5.5.11 Ham Street

https://goo.gl/maps/vGJyaHeBPaw

Proposals

- Modal filter/bus and cycle gate (near Grey Court School)
- Side street treatments – continuous footways
- Lock Road junction improvement
- Visual cycling buffers along on-street parking
- Street furniture decluttering
- Tree planting & seating

Figure 5-16: Before and after Walthamstow village timed bus & cycle gate

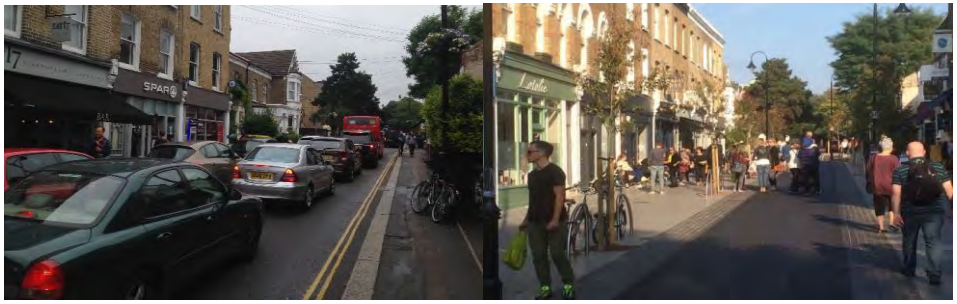
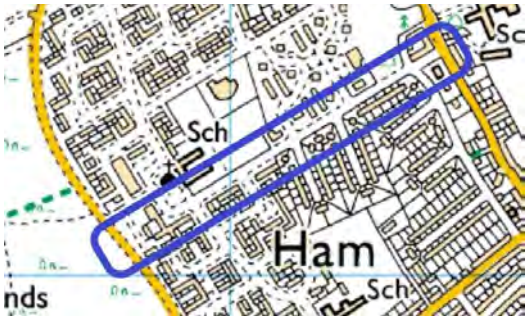


Figure 5-17: Timed bus and cycle gate (image courtesy of The Times)

5.5.12 Ashburnham Road

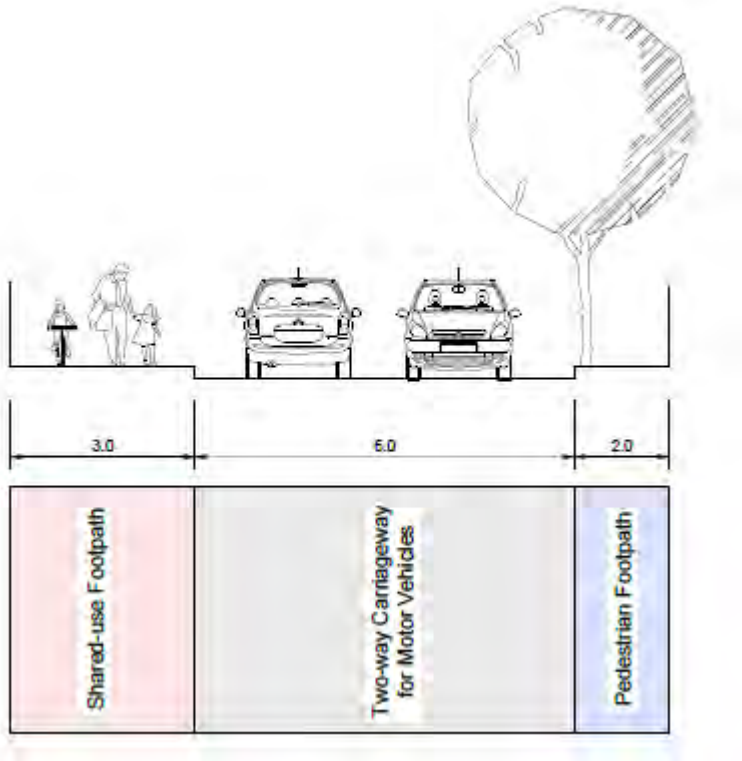


https://goo.gl/maps/xMR3KkNnz3G2

Proposals

- 3m shared-use footway to provide access to St Richard's Primary school
- Side street treatments (junction tightening)
- Bus and cycle-friendly traffic calming
- On-street car parking consolidation
- Visual buffer along on-street car parking

Figure 5-18: Indicative cross section



5.5.13 Parkleys and Barnfield Avenue

https://goo.gl/maps/DKUucw2teov

Proposals

- Modal filter to restrict traffic cutting through a residential neighbourhood to avoid Ham Cross junction
- Filtering between Parkleys and Barnfield Avenue

Figure 5-19: Indicative modal filter layout

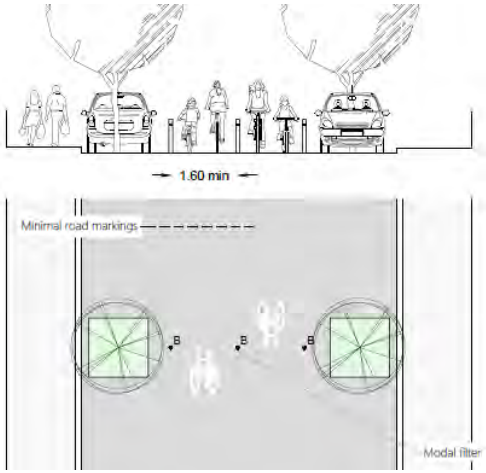
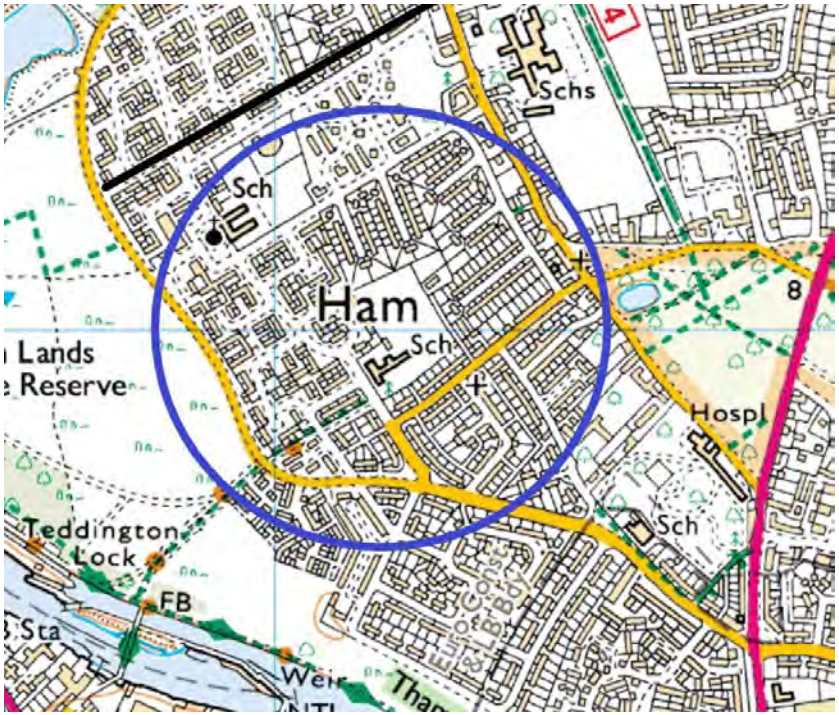


Figure 5-20: Waltham Forest modal filter

5.5.14 Meadlands and St Richard's School Streets



Proposals

- Trial and delivery of school street (timed restricted motor traffic access during school drop-off and pick-up times)

Figure 5-21: Camden School Street

5.5.15 Burnell Avenue / Towpath Link

Location: https://goo.gl/maps/E75HxmNYAQm

Proposals

- 3m shared-use path (machine laid asphalt)
- Tree planting
- Low-level path lighting

Figure 5-22: Indicative path cross section

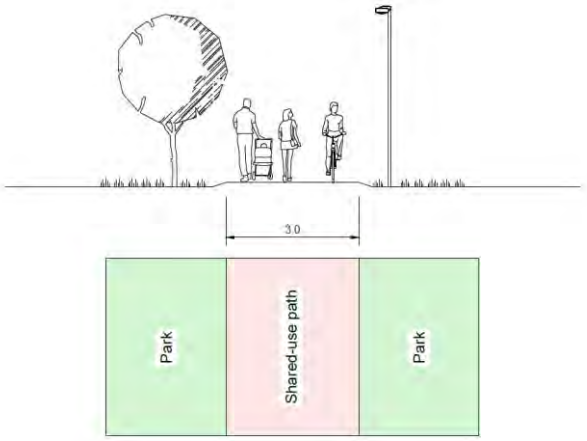
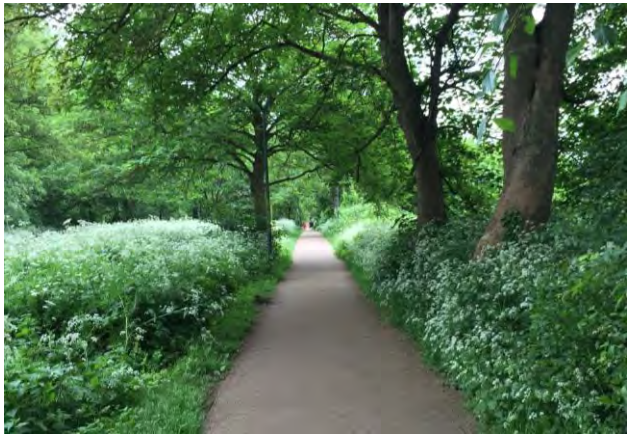


Figure 5-23: Local example – Teddington lock path with lighting



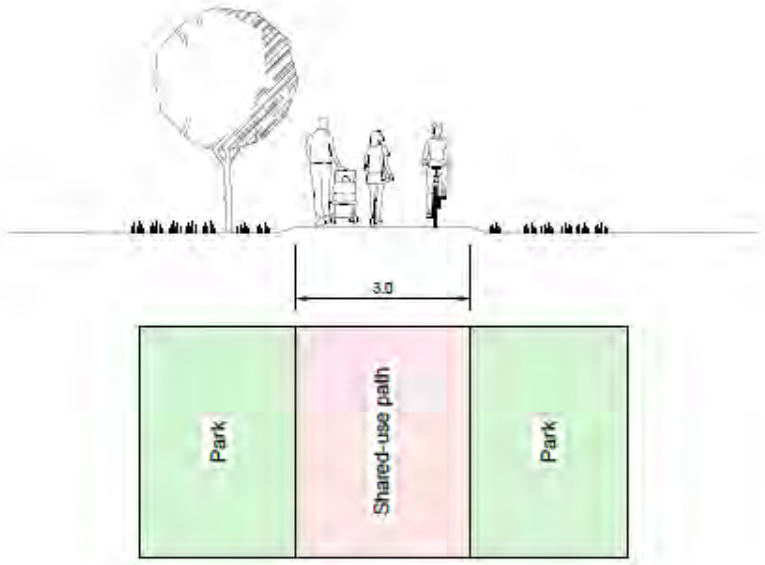
5.5.16 Meadlands Drive / Bridleway Link

Location: https://goo.gl/maps/VXkMdeK2xuC2

Proposal

- 3m shared-use path

Figure 5-24: Indicative path cross section



5.5.17 Towpath resurfacing

Proposal

- Resurface unbound section path with new bound surface between River Lane and Buccleuch Gardens

5.5.18 Towpath lighting

Proposals

- Low-level bollard lighting (possibly sensor activated by people) or solar studs. Column lighting where possible.
- The lighting should make the path safe and comfortable for cycle and pedestrian use outside of daylight hours
- The lighting must be in keeping with any ecological requirements specified

Figure 5-25: Example of bollard lighting in Worcester

5.5.19 Petersham Nurseries

Location: https://goo.gl/maps/fcCxenBmys12

Figure 5-26: Zebra crossing example

Proposals

- New pedestrian crossing
- Inclusive access controls

Petersham Nurseries is an important and busy trip generator; the access is often managed by marshals however there is a lack of pedestrian crossing facilities in the vicinity of the access.

5.5.20 Petersham Meadows

Proposals

- Inclusive access controls that allow for livestock control
- Footpath resurfacing

Figure 5-27: cycle friendly cattle grid

5.5.21 Cycle parking strategy

Trip generators

Short stay cycle parking units (Sheffield stands)

- Ham Parade
- St Richards Parade
- Ham Street shops
- Back Lane shops

Ham Common bus stops

A sheltered cycle parking unit close to bus stops in Ham Common to facilitate people wanting to cycle and then get the bus.

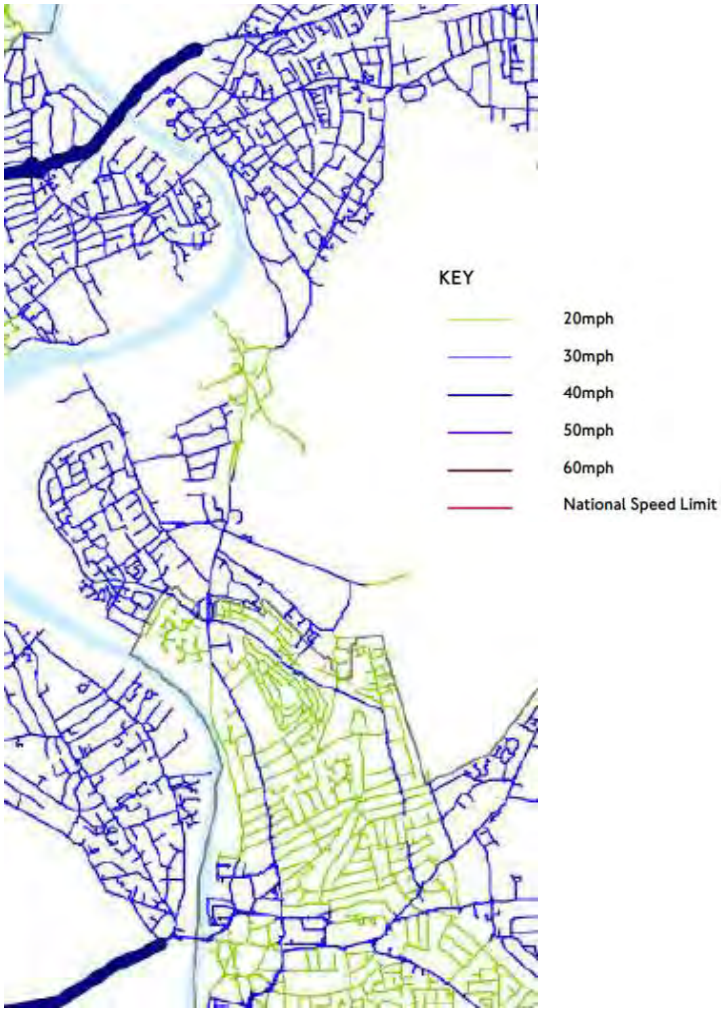
Figure 5-28: Indicative cycle storage and seating (Menthol Architects)

Residential neighbourhoods

On-street secure cycle storage units could be rolled out across the neighbourhood to support people wanting to cycle but don't have access to secured and sheltered storage.

Figure 5-29: On-street cycle storage unit in Lambeth

5.5.22 Area-wide 20mph speed limit



Proposals

- Area-wide 20mph speed limit covering Ham and Petersham neighbourhoods and corridors
- Continuous 20mph speed limit on A307 between Petersham and Ham Parade

6 Conclusions

6.1.1 The fundamental conclusions of the study are that:

- Active travel and inclusivity are suppressed by current road and footpath network
- There is no clear and obvious strategic cycle route into Richmond Town centre from Ham and Petersham
- All 3 strategic cycle routes developed by HPNF and PJA score well against core design principles but option 2 using the 'dry route' is considered by the community and stakeholders as the most deliverable
- Strong community support for
  - Improved access to town centres
  - a people friendly town centre at Ham Parade
  - safe routes to school
- Strong community support for developing a high-quality cycling and walking network and a people-friendly town centre at Ham Parade
- Emerging network supports local and regional policy, including the transport objectives, set out in the Ham and Petersham Neighbourhood Plan
- Emerging network supports inclusive access

Figure 6-1: Ham Cross co-design

Appendix A Engagement Report

Appendix B Strategic Route Options

Appendix C Strategic Route Selection Report

Appendix D Maps

Appendix E Sketch Designs

Appendix F Thames Landscape Strategy Report

Appendix G Healthy Streets Check