This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 208179-00
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>1</td>
</tr>
<tr>
<td>1 Introduction</td>
<td>2</td>
</tr>
<tr>
<td>1.1 Study Brief</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Aim of this Report</td>
<td>3</td>
</tr>
<tr>
<td>2 Review of Background Information</td>
<td>4</td>
</tr>
<tr>
<td>2.1 Sustrans Report</td>
<td>4</td>
</tr>
<tr>
<td>2.2 Harrow</td>
<td>5</td>
</tr>
<tr>
<td>2.3 Brent</td>
<td>7</td>
</tr>
<tr>
<td>2.4 Ealing</td>
<td>8</td>
</tr>
<tr>
<td>2.5 Hounslow</td>
<td>9</td>
</tr>
<tr>
<td>3 Initial Route Selection Process</td>
<td>10</td>
</tr>
<tr>
<td>3.1 Selection of the Route Alignment</td>
<td>10</td>
</tr>
<tr>
<td>3.2 Connecting Trip Attractors</td>
<td>10</td>
</tr>
<tr>
<td>3.3 Constraints</td>
<td>11</td>
</tr>
<tr>
<td>4 Preferred Route and Alternatives</td>
<td>12</td>
</tr>
<tr>
<td>4.1 Harrow Section</td>
<td>12</td>
</tr>
<tr>
<td>4.2 Brent Section</td>
<td>25</td>
</tr>
<tr>
<td>4.3 Ealing Section</td>
<td>31</td>
</tr>
<tr>
<td>4.4 Hounslow Section</td>
<td>37</td>
</tr>
<tr>
<td>5 Comparative Summary of Options</td>
<td>40</td>
</tr>
<tr>
<td>5.1 Destinations and Greenways</td>
<td>40</td>
</tr>
<tr>
<td>5.2 Harrow</td>
<td>40</td>
</tr>
<tr>
<td>5.3 Brent</td>
<td>41</td>
</tr>
<tr>
<td>5.4 Ealing north of Uxbridge Road</td>
<td>41</td>
</tr>
<tr>
<td>5.5 South of Uxbridge Road to Thames</td>
<td>42</td>
</tr>
<tr>
<td>5.6 Issues to Resolve</td>
<td>42</td>
</tr>
<tr>
<td>6 Cost Estimates</td>
<td>43</td>
</tr>
<tr>
<td>6.1 Harrow Section</td>
<td>43</td>
</tr>
<tr>
<td>6.2 Brent Section</td>
<td>44</td>
</tr>
<tr>
<td>6.3 Ealing Section</td>
<td>45</td>
</tr>
<tr>
<td>6.4 Hounslow Section</td>
<td>46</td>
</tr>
<tr>
<td>6.5 Total Costs</td>
<td>46</td>
</tr>
<tr>
<td>7 Business Case</td>
<td>47</td>
</tr>
<tr>
<td>7.1</td>
<td>Cycling in Outer London</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>7.2</td>
<td>Cycling in West London</td>
</tr>
<tr>
<td>7.3</td>
<td>Recent Cycle Usage Surveys</td>
</tr>
<tr>
<td>7.5</td>
<td>Potential Cycling to/from Stations</td>
</tr>
<tr>
<td>7.6</td>
<td>Potential Cycling to Education</td>
</tr>
<tr>
<td>7.7</td>
<td>Potential Trips to Major Employers</td>
</tr>
<tr>
<td>7.8</td>
<td>Potential for Leisure Cycling</td>
</tr>
<tr>
<td>7.9</td>
<td>Pedestrian Users</td>
</tr>
<tr>
<td>7.10</td>
<td>Road Safety Benefits</td>
</tr>
<tr>
<td>7.11</td>
<td>Health Benefits</td>
</tr>
<tr>
<td>7.12</td>
<td>Initial Benefit Calculation</td>
</tr>
</tbody>
</table>
Executive Summary

This report describes a potential leisure cycling route between Stanmore and the River Thames passing through the Boroughs of Harrow, Brent, Ealing and Hounslow. The report was commissioned following an earlier study by Sustrans which looked at a largely off-road alignment in the west of the area. This offers many advantages in providing a coherent and more continuous ‘greenway’ but would be expensive to construct and remote from residential areas and trip attractors.

The aim of the route is to provide opportunities for people new to cycling to have opportunities for traffic free cycling within an urban area, and to also offer improved links to parks, visitor attractions and utility cycling destinations. The route will therefore provide both a leisure facility and an additional element of the sustainable transport network.

The routes investigated and recommended in this report pass through the central parts of each borough while still connecting up green spaces. Quiet residential roads are used for the links between the green spaces. Most of the roads are traffic calmed and carry light flows of traffic. Where busy roads have to be crossed, the crossing areas use existing advanced stop line facilities, or recommend new or existing toucan crossings for cycle tracks.

The routes also deliberately connect to other local attractors such as rail stations, schools, colleges and employers. They pass close to the main urban centres in each borough, enabling the use of existing spurs to connect to these areas. Where there is no existing route, a spur has been recommended and included in the costs.

The leisure route is intended to complement existing parts of LCN+, Cycle Superhighways and local route networks and connections are shown.

An initial appraisal of costs and benefits suggests that a capital investment in the region of £760k would be required, plus design costs. Based on TfL guidance tables for pedestrian and cycle infrastructure a benefit:cost ratio of 3:1 would be achieved if just 260 trips per day were attracted to the route (90,000 users per annum), and it is likely that the route will attract far more people than this. If the health and road safety benefits of additional users and modal shift are taken into account, an even bigger BCR could be achieved.
1 Introduction

1.1 Study Brief

Arup was appointed to investigate a cycle route on behalf of the London Boroughs of Harrow, Brent, Ealing and Hounslow. The study was commissioned following an earlier report by Sustrans (February 2012) that had investigated a greenway route mainly along the Brent River Valley and Grand Union Canal. While this route has merit in providing a largely traffic-free greenway on the western edge of London, it is remote from centres of population and journey attractors, and does not connect easily into established local cycle routes and parts of the London Cycle Network.

The brief for this study was therefore to consider a route that incorporates sections of greenway that are suitable for beginners, but also connects into local communities, transport interchanges and journey attractors.

The report is to inform the boroughs of Harrow, Brent, Ealing, Hounslow in a potential funding bid to TfL for the development of a preferred cycle route which will achieve the following:

- Provide a high quality designed and connected long spinal route from Stanmore area to the Brentford area;
- Deliver modal shift by attracting new walking and cycling trips and thereby diverting journeys away from the car;
- Attract families and children and act as a 'nursery' for new and returning cyclists who will then develop the confidence and skills to ride on the road;
- Improve overall access to nature for those with mobility difficulties and visual impairments;
- Link areas that are currently poorly connected; and
- Support local and strategic objectives (MTS, LIPs) and policies on cycling.

The recommended route should:

- Provide maximum benefit for the maximum number of cyclists;
- Use existing cycle and pedestrian infrastructure where practical;
- Improve overall north south connections in the West London area;
- Improve connections to schools, colleges, universities, businesses, shopping facilities, hospitals, public transport and the local existing cycle route network;
- Use greenways and off-road facilities where practical;
- Provide a recommended quality standard of infrastructure throughout the route taking into consideration predicted usage levels, time of access, surface materials, lighting levels and required permissions;
- Improve the safety of cycling through the entire length of the route.

It is intended that the Boroughs will submit an application to TfL for major scheme funding to develop the route. This report includes an appraisal of the ‘best performing’ route in terms of the business case for major scheme funding.
1.2 Aim of this Report

This report provides a record of our site investigations and appraisal of the background information provided by the client. To inform this report, we held an Inception Meeting to clarify the brief and a Route Options Meeting to discuss the merits and practicalities of various route alignments with the Borough cycling officers.

Following feedback we have developed this detailed analysis and costing of a preferred option together with a comparative description of alternative alignments that could also be considered in the event that the preferred option proves impossible.
2  Review of Background Information

2.1  Sustrans Report

Sustrans issued a ‘Linear Greenway Feasibility Report’ in February 2012. This report provides a good overview of the physical challenges of constructing a mainly off-road route through the west side of London, and also includes information about potential alternatives that were considered.

The Sustrans report contains valuable historical and policy context about the role of Greenways in Outer London and the development of the Stanmore to the Thames route, which can be reproduced to support an application for funding (we will not repeat it here). Importantly, Harrow Council identifies £1.2m towards developing the route (through all Boroughs) in its LIP.

The route proposed by Sustrans was a greenway route, suitable for use by a novice adult cyclist, a family with young children or a sensible unaccompanied twelve-year old. Based on Sustrans preferred options, it was estimated that the total cost of building the route to greenways standard was £2,250,040 at September 2011 prices.
2.2 Harrow

2.2.1 Belmont Trail proposals

Harrow Council has already undertaken work to progress the design of the Belmont Trail including those sections yet to be completed. The trail already provides a linear ‘green’ route on completed sections but has the potential to link up several local parks and historical sites as shown below (on next page).

2.2.2 Accident data

Data for injury accidents involving cyclists was provided for the period 1st December 2008 to 30th November 2011. During that time there were 94 reported injury accidents across the Borough as a whole. Only 4 appear to have occurred along the proposed route, two of which were at Christchurch Gardens / Kenmore Avenue junction.

It is difficult to draw any conclusions from the data set; in general the pattern of accidents across the Borough appears to coincide with major roads and junctions as one would expect.

The proposed route deliberately takes in minor roads and greenways because its primary purpose is for leisure and to attract less experienced riders.
2.3 Brent

2.3.1 Route Network

Brent Council provided the study team with information about planned and developed routes within the Borough. An overview of routes is included in the plan below. The Borough as a whole faces challenges for cycle routing due to the severance effects of railways, major roads and to some extent Wembley Park is itself bordered by rail and major roads making cycle access through this central part of the Borough more challenging.

Our report incorporates parts of the red north-south route that is shown to the west of the railway line, although we have suggested some minor changes to incorporate the open spaces of One Tree Hill and Vale Farm Park.

Brent Council also provided information about the design of (now completed) LCN+ route at Watford Road and Sudbury Court Drive which is described as one of our route options in Section 3.

One of the main priorities for Brent Council in the current LIP is to further strengthen east-west links within the Borough to provide better connections to Wembley Park. The onward connections to Harrow and Ealing, the severance effect of the railway and the desire to incorporate open spaces inevitably limit the possibilities to deliver east-west links within the Stanmore to the Thames route, but our proposed route options pass close to each crossing point of the railway line to enable future connections.

There are developments coming forward in Wembley Park and Wembley Central that can help to release Section 106 funding to assist in the delivery of east-west spurs. A planned route (Corridors 8 & 9 in Wembley Stadium Cycle Route...
report) between East Lane, North Wembley and Wembley Central will also help to ‘feed’ the Stanmore to the Thames Route from east of the railway line.

2.4 **Ealing**

2.4.1 **Route Network**

Ealing is a large borough that has been proactive in developing cycle route infrastructure over a long period and where eight out of 55sq km total area is parks and green spaces, with 16 linear km of canals. While the less dense areas in the west of the borough offer great potential for greenways, the main journey attractors and the most direct route to the Thames are in the more densely populated east side of the borough.

Green spaces in Ealing

In common with the other Outer London boroughs it has severance associated with major road and rail lines, and for Stanmore to the Thames route the crossing of the A40 Western Avenue is a particular challenge that affects route choice. More so than some of the other boroughs, B roads such as Ruislip Road, Argyle Road, Popes Lane, Alperton Lane and Northfield Avenue form locally strategic routes with relatively heavy traffic throughout much of the day, and some other minor roads also attract traffic due to congestion on major routes.

The potential of the Stanmore to Thames Greenway to deliver sustainable transport and health benefits within the borough is recognised in the current LIP. The borough is also developing a number of cycle hubs, including Ealing Broadway which is close to the proposed route described in Section 3.
2.4.2 Accidents

The top five sites for cycle injury accidents in Ealing are Uxbridge Road, The Broadway, Ruislip Road, Bilton Road and Whitton Avenue Road. We have sought to avoid routes along these links and for use of safe crossing points where the route passes over Uxbridge Road / The Broadway. In general, injury accidents occur mostly on the main roads in the borough with less frequency and severity on minor roads.

2.5 Hounslow

2.5.1 Biking Boroughs Programme

Hounslow Council have recently invested Biking Boroughs funding into a study of LCN Route 75 which runs between Kingston and Brentford, with an onward connection to Ealing Broadway on LCN 85. This is in recognition of data that shows a significant number of short trips on a north-south alignment within the Borough which are not well served by public transport. The study of LCN 75 recommended strong branding of the route (already evident in Kingston) to be continued through Richmond and Hounslow. A signing schedule has been prepared to implement this route.

LCN 75 passes along Church Street in Old Isleworth which is an attractive conservation area adjacent to the Thames, and continues to Brentford through Syon Park estate. This would be compatible with the ‘Greenway’ nature of the route. The connection through to Kingston uses attractive riverside routes and a spur from Hounslow town centre to Richmond Park is also under development in partnership with Richmond Council.

In Brentford the High Street forms part of Cycle Superhighway 9 and connects to West Middlesex Hospital less than a mile to the west. The Grand Union Canal also terminates at the Thames immediately west of Brentford High St and there are pleasant canal-side and riverside redevelopments close to Tallow Road and in the former wharves along the Thames.
3  Initial Route Selection Process

3.1  Selection of the Route Alignment

Appendix A provides a map and diagram of the proposed route, divided into Boroughs, showing the preferred route and places where there are potential alternative options.

The study brief was to develop a route for leisure cycling between Stanmore and the Thames. To select a route we first put a ‘straight line’ south from Stanmore to the nearest part of the Thames which is adjacent to Brentford High Street.

We then considered how to accommodate as many greenway and attractive residential quiet road sections as possible to encourage new riders and children to be able to use the route.

The previously investigated (Sustrans) option to deviate west to incorporate the Grand Union Canal and Brent Valley Park to avoid roads altogether would also have taken the route far away from the main centres of population and made access by public transport more difficult so this was rejected.

The east side of the study area is bounded to a certain extent by the North Circular Road. The density of development along and adjacent to this road is quite dense and dominated by commercial and industrial uses, leading to higher proportions of HGV traffic and generally wider roads and larger block sizes. This type of environment is more challenging and unattractive to newer cyclists and offers little to attract the leisure cyclist. An easterly option would also have taken in many more major road and rail crossings, and there were fewer open spaces for greenways due to its proximity to central London.

A reasonably direct route through the central part of the study areas was chosen, linking a series of ‘greenways’ along new routes and through parks and golf courses. Within this central route corridor there are some places where there are two or more routes that could potentially be incorporated. These are described below and evaluated in Section 4 of the report.

3.2  Connecting Trip Attractors

The central part of the study area is characterised mainly by residential development interspersed with open spaces. This provides good opportunities to make a route that is very accessible to residents and connects residential areas with open spaces by using quiet residential roads. Many schools are located within residential areas, offering a further set of potential users that make regular short local journeys.

West London is well served by rail services to and from central London (and the Thames Valley) and we deliberately sought to pass close to stations. This provides opportunities for commuter cycling to stations and for leisure cyclists from other parts of the city to access the route by rail (and Underground). Cycles are permitted on most surface rail services (including surface-level parts of London Underground) outside peak travel times.

The route passes close to (but not directly through) major centres such as Stanmore, Harrow, Wembley, Alperton, Perivale, Ealing Broadway and
Brentford. To accommodate less experienced cyclists, we have deliberately avoided passing directly through the busiest centres, but the route connects to all of these hubs using existing or planned spurs on the London Cycle Network, Cycle Superhighways and signed local routes.

The route passes several major employers such as hospitals, university sites and shopping centres.

3.3 Constraints

The main constraints on route choices are crossing the A40 Western Avenue, A4020 Uxbridge Road, and the A4/M4 corridor. The limited number of rail and canal crossing places also restrict choices at some locations.
4 Preferred Route and Alternatives

4.1 Harrow Section

4.1.1 Introduction

The priority route within Harrow is the completion of the Belmont Trail to provide a 2.5km linear greenway with spurs connecting to Stanmore and Harrow town centres, as well as a number of journey attractors along the way. The trail will be unusual in providing a continuous traffic free greenway through an urban area, and will revive and upgrade disused and derelict land that is prone to illegal dumping and vandalism.

The route also provides a linear connection between other open spaces in the Borough, and potential access (as did the original railway) for people from the urban area to travel into Bentley Priory Park and other open spaces north of Uxbridge Road.

There are a number of schools and Stanmore College close to the route and so it will form part of a local network.

There are parts of the London Cycle Network along Uxbridge Road, Old Church Lane and Weston Drive as well as existing signed borough routes to Stanmore and Canons Park London Underground stations.

It is recommended that the reader refers to the route diagram while reading this chapter of the report.
4.1.2 Belmont Trail Preferred Route

This report section describes the preferred route that runs from Stanmore via the Belmont Trail to the south edge of the London Borough of Harrow. Alternative options were investigated and discussed, and this alignment was confirmed as the preferred route.

Stanmore Station and Stanmore district centre to Stanmore College

Description: The Broadway is the commercial centre of Stanmore, while the London Underground Station is the terminus of the Jubilee line. A signed cycle route through streets south of the Uxbridge Road connects the Broadway and Stanmore Station. The route connects into Elm Park, which has a point closure to prevent through traffic. Elm Park runs past Sainsbury’s supermarket and Stanmore College, both significant local journey attractors.

![Elm Park looking towards Broadway](image)

Work required to form a route: Signing of existing facilities, branding, interpretation.

Attractors: Stanmore Station, Stanmore district centre, Sainsbury’s supermarket, Stanmore College.

Stanmore College via Manor House Estate to Gordon Avenue

Description: Immediately north of the College is Manor House Estate, which appears to be a private residential estate. The mock Tudor gatehouse at the western entry onto Church Lane is currently boarded up but would provide a connection through to Cherry Tree Way which is the start of an existing signed off-road cycle route through Stanmore Park to Gordon Avenue. Stanmore Park is now developed as a residential area but has an interesting history connected to its use as a RAF balloon base and then as fighter command in World War 2.

An option to extend the route northwards over Uxbridge Road from Stanmore Park into the Old Priory deer park is described in the Sustrans report.
An on-road alternative from Elm Park via The Ridgeway, Old Church Lane and Gordon Avenue is acceptable (and passes Stanmore College).

Sign at the entry to the cycle track from Gordon Avenue

Cycle route within Stanmore Park

Work required to form a route: Signing of existing routes, potential negotiation of route through estate to east of Old Church Lane.

**Attractors:** Stanburn Schools

**Gordon Avenue via Montrose Walk to Wolverton Road**

**Description:** Montrose Walk is an excellent off-road path south of Gordon Avenue through an attractive woodland environment. It is mostly approximately 2.0m wide with an unsealed surface. There is street lighting present.
Work required to form a route: Access would require dropped kerbs on Gordon Avenue and resurfacing of the track with a sealed surface more suitable for commuter use, with potentially some re-grading of the access to the footway and replacement of the railings on a bridge over a stream. The utilitarian railings adjacent to the ramped access are also in need of refurbishment and could be replaced with a more attractive set that would, literally, be a gateway to the trail.

Attractors: Montrose Walk, Golf Club.

Entry to path to Montrose Walk from Gordon Avenue showing where dropped kerb required
Fence and railings by access ramp

Montrose Walk at Wolverton Road
**Wolverton Road via Stanmore Golf Court to Vernon Drive**

**Description:** The preferred option south of Wolverton Road is to use the former rail alignment which runs along the eastern edge of Stanmore Golf Course. There is no path or right of way at present. There is a UK Power Networks electricity substation and the golf course maintenance yard at the northern end of the land next to Wolverton Road, and at the southern end the path comes out in a narrow alley next to Belmont Synagogue on Vernon Road.

![Northern end of the golf course](image)

This is a slightly different proposition from what was suggested in the Sustrans report, where the existing informal paths at the southern end, and a service track at the northern end of the golf course were suggested. These existing paths run relatively close to the fairway whereas the eastern edge is well away from the course and would be easier to fence off, but requires more work initially to clear a path through overgrown scrub and woodland. The 9th hole is close to the northern end and this area would in particular require fencing off to protect people from golf balls.
The line of the railway looking north from Belmont Synagogue

Issues: The golf club has raised concerns about safety. However, there are many golf courses in the country where footpaths, bridleways and cycle tracks pass through them, including Ealing Golf Course which potentially forms part of the Stanmore to the Thames route within Ealing. Indeed, there is already a footpath through the west side of Stanmore Golf Course which is protected by a row of trees and a low chain link fence shown below.

Footpath on west side of Stanmore Golf Course

The golf club has also raised concerns about security and safety of the clubhouse and car park but their car park access road is already accessible as a public footpath and to pedestrians using Montrose Walk, and these paths already appear to attract informal use by cyclists. UK Power Networks is also concerned about security of their site. Further south, the already completed part of Belmont Trail passes through a car park at Belmont Circle.
**Work required to form a route:** Harrow Council has already opened discussions with the golf club and UK Power Networks regarding use of land. It is understood that the Council owns the land but it is leased to the Golf Club. At the southern end the route will also require moving the fence line at Belmont Synagogue to create adequate width.

Assuming that stakeholders can be persuaded the physical work required is to create a new route alongside the electricity substation and along the edge of the golf course. This will require clearance of overgrown vegetation, provision of a suitable riding surface and fencing – potentially to gardens of neighbouring properties and to the golf course. It may be necessary to provide a 2.0m chain link fence to the golf course to protect pedestrians and cyclists from the adjacent fairway and green. At the southern end the path between the synagogue and neighbouring properties needs to be widened by taking in part of the synagogue car park and moving the fence by approximately 1.0m. The access to and from Vernon Drive needs some construction work.

The route would ideally need to be lit to make it more acceptable for commuting. It is suggested that surface ‘stud’ lighting is used on this and other off-road sections to avoid visual intrusion to neighbouring properties.

**Attractors:** Stanmore Golf Club, Belmont Synagogue

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*Southern end (looking north) with Belmont Synagogue on right of picture*

**Interim on-street route around golf course**

Until discussions with the golf course and UK Power are resolved it is possible to create a signed on-street route using the adjacent residential roads. Clearly such a route would be less desirable and attractive. This route could be introduced quickly as an interim measure pending construction of the greenway route.

**Work required to form a route:** Sign a route from the golf course approach along the path to Wolverton Road. Sign the route along the narrow alleyway between Wolverton Road and Courtens Mews (to avoid using Old Church Lane which is a busier road). From Courtens Mews sign the route via Belmont Lane and Wembley Road through to Vernon Drive.
Vernon Drive via existing Belmont Trail to Kenton Lane (Belmont Circle)

Description: There is a shallow gradient from Vernon Drive to the old track bed. The path then continues south towards Belmont Circle. A short section of path immediately before the car park at Belmont Circle has been completed.

Work required to form a route: Construct ramped path between Vernon Drive and trail level by modifying and widening existing paths. Clear vegetation and rubbish, and surface trail with a sealed surface. Provide stud lighting.

Attractors: Belmont Trail, Belmont Circle shops and St Joseph’s Primary School.
Trail south of Vernon Road

Entry to Belmont Circle car park
Kenton Lane (Belmont Circle) via existing Belmont Trail to Christchurch Avenue

**Description:** The trail has been completed immediately south of the car park and crosses Kenton Lane via a subway. A new ramp has been constructed and the subway recently refurbished. The path is incomplete near Dobbin Close and south of this point it requires levelling and resurfacing where rubble and garden debris have been dumped. It reaches Christchurch Avenue at an embankment with a steep drop to the carriageway.

**Links:** A spur leads off towards Harrow and Wealdstone Station by Wealdstone Cemetery and Byron Recreation Ground. The route is already signed between the town centre and the park.

**Work required to form a route:** The main work required is resurfacing and levelling, and completion of a coherent route around the end of Dobbin Close. At the southern end a safe ramped access to Christchurch Avenue needs to be constructed. Sign spur to Harrow and Wealdstone.

**Attractors:** Christchurch Industrial Estate, Harrow Leisure Centre, Byron Recreation Ground, Harrow Council depot, Phoenix Business Centre, Hawthorne Industrial Estate.

*Slope between Christchurch Avenue and Belmont Trail*
Christchurch Avenue via Kenton Recreation Ground to Kenton Road

**Description:** The railway land has been built on to the south of Christchurch Avenue. The route to Kenmore Avenue is via a five arm roundabout. Although the roads are not heavily trafficked they are busy during peak hours. From Kenmore Avenue the route passes through Kenton Recreation Ground on an existing signed cycle path. There is an advanced stop line at the signal controlled junction of Carlton Avenue with A4006 Kenton Road. This road is the boundary between London Borough of Harrow and London Borough of Brent.

**Links:** A signed cycle route leads off to Harrow metropolitan centre from the end of Kenmore Avenue.

**Work required to form a route:** The junction of Kenmore Avenue and Christchurch Avenue is difficult for southbound cyclists who are required to make a right turn, and for northbound cyclists who need to then cross Christchurch Avenue to reach the start of the trail. An alternative option would be to create a toucan crossing of Christchurch Avenue (approximately where the speed humps sign is at present) and an informal crossing by moving and widening the splitter islands and adding dropped kerbs at the southern arm of Kenmore Avenue. This will benefit pupils walking and cycling to Elmgrove Primary School.

**Attractors:** Elmgrove Primary School, Kenton Recreation Ground and shops at the junction of Kenton Road and Carlton Avenue.

Exit from Kenmore Avenue looking towards Christchurch Avenue on the left

Looking towards Kenmore Avenue (on right) from Christchurch Avenue
4.2   Brent Section

4.2.1   Introduction

The route through the London Borough of Brent starts with a preferred route section through Northwick Park to Norval Road.

There are then two options;

- One is to incorporate the existing cycle route on Sudbury Court Drive (LCN 87) on the west side of the borough, leading into the London Borough of Ealing at Sudbury leading towards Horsenden Hill.

- The other is to take a more easterly route that passes through Wembley and Alperton, leading into the London Borough of Ealing much further south and crossing the A40 at a subway near Alperton Lane or via a footbridge at the southern end of Horsenden Lane.

We have noted the existing and planned development growth around Wembley Park but this area is quite far to the east of the rest of the route and there isn't a logical way to incorporate Wembley Park into the Stanmore to Thames route.

The route links the three main open spaces in Brent (Northwick Park, Vale Farm sports ground and One Tree Hill) using quiet roads mainly on residential streets. The open spaces offer very different experiences, Northwick Park is a pleasant wide open park and playground, Vale Farm is a sports centre and playing fields, and One Tree Hill offers a quiet elevated space with views across the city.

It is recommended that the reader refers to the route diagram while reading this chapter of the report.

4.2.2   Northwick Park Preferred Route

This report section describes the preferred route that runs from north edge of the London Borough of Brent via Northwick Park to Norval Road. Alternative options were investigated and discussed, and this alignment was confirmed as the preferred route.

**Kenton Road via Northwick Park to Norval Road**

**Description:** The route crosses Kenton Road at a signalised junction. There are advanced stop lines at the junction. Nash Way provides access to a supermarket and leads to Draycott Avenue, a residential road. An at-grade bridge over the railway forms a link from Draycott Avenue to Northwick Avenue.
Draycott Avenue to Northwick Avenue footbridge

Cyclists will need to dismount to enter Northwick Park from Northwick Park Station. South of the station there is a sealed surface path through the park leading into The Fairway and Norval Road.

**Work required to form a route:** The infrastructure is in situ and the main requirement will be waymarking, with some modifications to kerbs and access arrangements near the station.

**Links:** There is a spur to Northwick Park & St Mark’s Hospital. Draycott Avenue forms part of the London Cycle Network linking to Wembley Central and Wembley Park via on-road routes to the east of the railway lines.

**Attractors:** Kenton Station, Kenton district centre, Sainsbury’s supermarket, Northwick Park Station, Northwick Park & St Mark’s Hospital, Northwick Park.

Cyclists will be required to walk through the station. Parts of LCN+ such as Greenwich foot tunnel include walking areas.
4.2.3 Sudbury Court Drive & Horsenden Hill Option

This report section describes the first of two route options that diverge at Norval Road. This westerly option runs via Sudbury Court Drive and enters the London Borough of Ealing, where it continues via Horsenden Hill. The continuation of this route option beyond Sudbury is described in the Ealing section of this report.

Norval Road via Sudbury Court Drive to Maybank Avenue

Description: Norval Road is a traffic-calmed residential road leading to Sudbury Court Drive. Toucan crossings have been installed at Watford Road and Sudbury Court Drive connected by service roads. The route then follows quiet residential roads Bengeworth Road and Elms Lane to Maybank Avenue, crossing Harrow Road at a toucan crossing and linking to Maybank Open Space, on the southern edge of London Borough of Brent. The route here is signed as LCN 89.

Sudbury Town Underground Station is close to the route and there are some existing cycle routes in this vicinity, although they could not easily form a direct and legible part of the route.

Work required to form a route: The route is largely complete and signed (LCN 89). An additional link could be provided at the exit of Norval Road at ‘The Green’ to link directly to the toucan crossing. Additional signing and marking are required at the staggered junction of Bengeworth Road to Elm Lane.

Links: Creating a new spur via Homefield Road to Vale Farm Sports Centre would require an additional toucan crossing of Watford Road.

Attractors: Vale Farm Sports Centre, Sudbury Primary School and St George’s Parish Centre.

A safe crossing would be required between Homefield Road and Vale Farm, if Vale Farm Sports Centre was to be served by this route option. (The crossing could also be provided to create a new link between LCN89, Vale Farm and the preferred route via East Lane)
4.2.4 Wembley & Alperton Preferred Option

This report section describes the second of the two route options south of Norval Road. This easterly option runs via Wembley and Alperton and enters the London Borough of Ealing near the A40. This route is preferred because it passes close to many trip attractors and would contribute to safer routes to school.

Norval Road via Crawford Avenue to A404

Description: Route passes along Norval Road, Nathans Road, Langham Gardens, Oldborough Road, East Lane, Vale Farm Sports Centre, Repton or Charterhouse Ave, Sylvester Road and Crawford Avenue. These are quiet residential streets. There is a main road crossing of A4088 East Lane near Wembley High Technology College. The route emerges at A404 Wembley High Road about 200m from the junction with Ealing Road. There are bus lanes along the main A404 road leading to Wembley Central.

The route crosses the A404 at a staggered priority junction where cyclists would need to turn right from minor to major road in each direction. This is preferable to right turns off a major road.

Vale Farm Sports Centre has a travel plan (extract illustrated below) to help promote cycling locally. Increased use is targeted in Brent’s Sport and Physical Activity Strategy 2010 – 15.

Work required to form a route: There is an existing zebra crossing near the college. This could be upgraded to a toucan. A new contraflow cycle track will
be required at East Lane by the junction to connect Oldborough Road to either Woodfield Avenue or directly into Vale Farm. A new sealed surface path into Vale Farm would connect directly to existing paths within the park. The route would also need to be meticulously signed through the back streets (there are some existing cycle facilities in recent development adjacent to Vale farm that can be incorporated into the route leading to Repton Ave, Sylvester Rd, Harrowdene Rd and Crawford Avenue).

**Links:** Existing routes through Vale Farm, Wembley Central and onward to Wembley Park.

**Attractors:** South Kenton Station, Wembley High Technology College, Vale Farm Sports Centre, Wembley major centre, Wembley Central Station.

*Crawford Avenue to Talbot Road provide an easy crossing of Wembley High Road, approximately 250m from Wembley major centre*

**A404 via One Tree Hill to A40**

**Description:** South of the A404 Wembley High Road the route passes along Talbot Road, Chaplin Road and Norton Road to One Tree Hill Recreation Ground. Signage on Chaplin Road would highlight Wembley Centre for Health & Social Care which is a few metres from the route. The route follows a short path through One Tree Hill Recreation Ground and under the railway to A4005 Bridgewater Road. There is a signal controlled pedestrian crossing of the road just north of the junction with the exit from One Tree Hill Recreation Ground.

The preferred route is to use Clifford Road, Manor Farm Road and then quiet residential streets (Perimeade Rd, Wadsworth Rd, Bideford Rd, Dawlish Avenue) that lead to Teignmouth Gardens and a footbridge over Western Avenue. There is access to the Grand Union Canal Paddington Branch off Manor Farm Road, from which it is a short distance to a busy Sainsbury store adjacent to the canal. The Manor Farm Road junction is difficult in a southbound direction due to the gradient and restricted width on the canal bridge.

An alternative but less attractive crossing of the A40 is to follow Alperton Lane to a subway under Western Avenue. Alperton Lane is relatively busy and carries
HGV traffic serving local businesses. Traffic leaving the A40 Western Avenue enters Alperton Lane at speed.

As the cycle route reaches the A40 it crosses the boundary between London Borough of Brent and London Borough of Ealing.

**Work required to form a route:** The south section of Norton Road is currently one-way northbound only. A cycle contraflow would need to be introduced to create a two-way route into One Tree Hill Recreation Ground.

**Links:** Alperton Station, Shree Sanatan Hindu Mandir temple

**Attractors:** Wembley Centre for Health & Care, One Tree Hill Recreation Ground, Alperton Station, Shree Sanatan Hindu Mandir temple, North West College London and Sainsbury’s Supermarket.

*Wembley Centre for Health & Care is a few metres from the route*

*A short cycle contra-flow on Norton Road would allow easier access to One Tree Hill Recreation Ground*
4.3 Ealing Section

4.3.1 Introduction

With so much green space and many attractive quiet residential roads, Ealing offers a number of possibilities; a route using the canal in the west of the Borough, a route through Greenford and Hanwell, across Horsenden Hill and West Ealing or a more easterly route towards Hanger Lane and Gunnersbury Park.

Following review of the Sustrans report and discussions with officers we concentrated on options that stay close to the ‘as the crow flies’ route from Stanmore to the Thames, but take in the local parks and connect local centres. The Grand Union Canal (Paddington Branch), the A40 Western Avenue, the A4020 Uxbridge Road and the railway lines form east-west barriers that can only be crossed at a limited number of locations and this influences route choice.

The route in Ealing essentially follows from the two different options for crossing the A40 Western Avenue:

- via the Teignmouth Gardens footbridge;
- or via the Rydal Crescent subway at the end of Alperton Lane.

These two route options converge at Longfield Avenue into a single preferred route that leads across Uxbridge Road and into the London Borough of Hounslow.

It is recommended that the reader refers to the route diagram while reading this chapter of the report.

4.3.2 Sudbury Court Drive & Horsenden Hill Option Continued

This is the south end of the Sudbury Court Drive & Horsenden Hill Option which starts at Norval Road in London Borough of Brent and runs via Sudbury into London Borough of Ealing. The start of this route option is described in the Brent section of this report.

**The Rise via Horsenden Hill to A40**

**Description:** This route uses The Rise to meet Whitton Avenue at a mini roundabout. Whitton Avenue is one of the hazard sites for accidents in Ealing. The route continues along Rosewood Avenue to join a surfaced bridleway at Horsenden Hill. The bridleway leads to Horsenden Lane. A spur leads off to recreation grounds and sports facilities in Berkeley Fields.

There is a cycle track alongside Horsenden Lane although it is discontinued at the entrance to a public house car park near the bottom of the hill. Horsenden Lane is a relatively steep hill but from the summit (a short spur off the track) there are extensive views. The cycle track then drops down the hill to meet the Grand Union Canal at a narrow bridge with signal control. There is a cycle access to the canal at this point and also a visitor centre and local nature reserve.

Horsenden Lane South is narrow in places and can be busy during peak hours and at weekends but has some cycle facilities provided at the canal bridge. There is
also a narrow northbound cycle lane between Ealing Sports Ground and Perivale Station.

**Issues:** Horsenden Lane South is busy and ‘out of character’ with other parts of the route. The existing northbound cycle lanes are narrow and there are no southbound facilities. The gradient through Horsenden Hill will be off-putting to some although there are good views.

**Work required to form a route:** This route is largely in place and signed.

**Attractors:** Horsenden Hill, Berkeley Fields, Perivale Wood Nature Reserve, Grand Union Canal, Perivale Industrial Park, Perivale Station, Ealing Central Sports Ground.

### 4.3.3 Teignmouth Gardens A40 Footbridge Preferred Option

This report section describes the first of two route options for crossing the A40 Western Avenue. This westerly option runs via the Teignmouth Gardens Footbridge. This route option aligns with the Sudbury Court Drive & Horsenden Hill option that finished on Horsenden Lane South, and can also be reached from the Wembley & Alperton Option using existing cycle routes that pass close to Perivale Station.

**A40 via Teignmouth Gardens Footbridge to Longfield Avenue**

**Description:** There are traffic signals at the southern end of Horsenden Lane. A cycle track along the north side footway of Teignmouth Gardens links to a shared cycle/footbridge across the A40. This bridge has ramps accesses and has markings to separate cyclists and pedestrians. The south end of the bridge links into Old Church Lane, past the Ancient Church of St Mary the Virgin, and into a shared cycle/pedestrian route through Ealing Golf Course and Pitshanger Park. The route could avoid the busy Scotch Common roundabout and instead exit the park straight into Kent Avenue. Existing cycle routes along North Avenue, The Avenue and Gordon Road could be followed to reach Longfield Avenue.

**Work required to form a route:** The route is largely present and signed. Access to Pitshanger Park from Kent Avenue needs to be investigated.

**Links:** Cycle tracks alongside A40, West Ealing Station

**Attractors:** Ancient Church of St Mary the Virgin, Ealing Golf Course, Pitshanger Park, West Ealing Station
Teignmouth Gardens footbridge offers a ramped, segregated route over the A40 Western Avenue

The Sacred Church of St Mary the Virgin

4.3.4 Rydal Crescent A40 Subway Option

This report section describes the second of two route options for crossing the A40 Western Avenue. This easterly option runs via the Rydal Crescent Subway. This route option aligns with the Wembley & Alperton Option that finished on Manor Farm Road. The Sudbury Court Drive & Horsenden Hill option that finished on Horsenden Lane South does not align well with this option, but aligns much better with the Teignmouth Gardens A40 Footbridge option described above.

A40 via Rydal Crescent/Alperton Lane Subway to Longfield Avenue

Description: There are few crossing points over the A40, and Rydal Crescent Subway aligns best with a cycle route from Wembley major centre to Ealing metropolitan centre. However the route would approach the subway via Alperton Lane, which is a busy road used by traffic from A40 Western Avenue. It would be difficult for northbound cyclists to cross Alperton Lane safely. There is a green route, approximately 6m wide, which parallels Alperton Lane and could allow cyclists to access the subway from Rydal Crescent; crossing Alperton Lane
rather than cycling along it. This green route lies is fenced off and undeveloped because it lies on top of a Thames Water main. It would be necessary to negotiate public access and surface over some of the existing grass to use this alternative northern approach to the subway. South of the subway the route would head east alongside the A40 Western Avenue using the existing cycle track. The route would then head south through Brent River Park, where surfacing would be necessary. It would then join residential street to head south along Brentham Way, west along Mount Avenue, south along Eaton Rise, west along Marchwood Crescent. It would head south along Blakesley Avenue and Longfield Road, crossing straight over the busy B455 Castlebar Road.

**Work required to form a route:** The alternative northern approach to the subway would need to be discussed with Thames Water, and a route would need to be surfaced. A route through Brent River Park would need to be surfaced. The on-street section would need to be meticulously signed through the back-streets. Install at-grade crossing of Alperton Lane.

**Links:** Cycle tracks alongside A40

**Attractors:** Brent River Park, Pitshanger Park, Montpellier Primary School, Montpellier Park, St Gregory’s Catholic Primary School, St Benedict’s School

*A cycle route above this Thames Water main would offer an alternative northern approach to the subway (but would still require at-grade crossing of Alperton Lane)*

**Reasons for rejection in favour of preferred option:** Alperton Lane is busy with HGV traffic and a crossing would be close to the high speed exit off Western Avenue. The subway is relatively narrow with steep approaches compared to the nearby footbridge. The small part of Brent River Park east of Ealing Golf Course is a nature reserve and floodplain and parts of the path were submerged during the site visits.
4.3.5  **Barnes Pikle and Walpole Park Preferred Route**

This report section describes the preferred route that runs from Longfield Road via Barnes Pikle and Walpole Park to the south edge of the London Borough of Ealing. Alternative options were investigated and discussed, and this alignment was confirmed as the preferred route.

**Longfield Avenue to Barnes Pikle**

**Description:** Ealing metropolitan centre is a major attractor of cycle trips, but is also a challenge for inexperienced cyclists. The objective of this route section is to get cyclists into the town centre and out again with the minimum difficulty. Longfield Avenue and Barnes Pikle provide a unique opportunity for cyclists to cross straight over the busy Uxbridge Road without cycling along it. Barnes Pikle is a footpath adjacent to a development site. Upon completion of the development the current hoardings will be removed, increasing the width of the north end of Barnes Pikle. The development may also provide an opportunity for streetscape improvements. A toucan crossing over Uxbridge Road would be necessary to complete the road across the town centre.

**Work required to form a route:** Toucan crossing over Uxbridge Road.

**Links:** At the start of this route section, a signed cycle route along Gordon Avenue would link to Ealing Broadway Station and Cycle Hub.

**Attractors:** Ealing metropolitan centre, Ealing Town Hall, Ealing Broadway, Cycle Hub
Longfield Walk and Barnes Pikle provide a unique opportunity to cross straight over Uxbridge Road

University of West London students filming in Walpole Park adjacent to their Ealing campus

Walpole Park to Windmill Road

**Description:** The route would follow existing surfaced paths through Walpole Park, passing the University of West London’s Ealing Campus. The route could at this point join Churchfield Road and intersect with LCN85 at South Ealing Road to continue south. The path at Barnes Pikle is restricted width (below LCDS standards) but we consider that its merit in providing a link to a safer place to cross Uxbridge Road away from busy centres at Ealing Broadway and West Ealing is worthwhile as it addresses a potential barrier for leisure cyclists.

**Spur to Northfields:** The route would cross Culmington Road, and follow existing surfaced paths through Lammas Park. Over 1km of direct, wide greenway cycling would be provided within Walpole and Lammas Parks. The route would leave Lammas Park onto Northfields Avenue, which already has cycle lanes. Northbound cyclists could use a new zebra crossing of Northfields Avenue to enter the park.

**Work required to form a route:** The cycle routing within Walpole Park and Lammas Park needs to be agreed to achieve a direct and safe routing. Toucan crossing at Uxbridge Rd. The route from Barnes Pikle via the parks to South Ealing Road and the spur to Northfields Avenue would need to be signed. The on-street section south of Walpole Park between South Ealing Road and Brentford is being signed as part of LCN 85.
**Links:** A signed cycle route via Elthorne Park would link to the Grand Union Canal (Brentford Branch), for cyclists who wished to take a less direct route via the canal to access Brentford to avoid busier roads such as South Ealing Rd, Windmill Rd and Brentford High St.

**Attractors:** Walpole Park, Lammas Park, University of West London (Ealing Campus) Northfields Station, University of West London (Hounslow Campus) and Brentford Station (in Hounslow)

### 4.4 Hounslow Section

#### 4.4.1 Introduction

This section is being developed as LCN 85 (north of Brentford) and LCN75 (south of Brentford). The route enters the London Borough of Hounslow via South Ealing Road and then to Whitestile Road and Enfield Road. Enfield Road is a traffic calmed residential road leading to Eastbourne Road and joins LCN 85. Eastbourne Road joins Windmill Road which crosses under the A4 at a signalled junction with advanced stop lines. From Windmill Road the route would cross Boston Manor Road at a staggered junction with ‘The Butts’ which is a quiet street leading through a Market Square and via a point closure to Tallow Road. Tallow Road joins Brentford High Street at a signal controlled junction and the High Street forms part of CS9. The route passes close to the University of West London and Brentford Station.

The route south from Brentford focuses on access to the Thames, which is not possible on all stretches of the river. There are two possibilities:

- a westerly route onto Cycle Superhighway 9 that allows cyclists to continue their journey to Syon Park and the Thames Path,

- a direct route to the Ferry Quay development and the Thames Path.

It is recommended that the reader refers to the route diagram while reading this chapter of the report.

#### 4.4.2 Syon Park Preferred Option

This report section describes the first of two route options for accessing the Thames Park. This westerly option runs via Syon Park.

**CS9 to Syon Park and Old Isleworth**

**Description:** CS9 will follow Brentford High Street. There is an existing toucan crossing near the entrance to Syon Park which is reached via a shared pedestrian/cycle path. Within Syon Park cyclists use the traffic calmed driveway. The river can be reached by following Church Street to Old Isleworth. Syon House is an important visitor attraction used for filming due to its fine interior. There is a garden centre and café in the Park grounds. The Apprentice Boy pub by the riverside is so named because it has been a traditional venue for ‘days out’ from the city for many centuries and makes a fitting and attractive start/finish point.
**Work required to form a route:** This route already exists and is being signed as part of LCN 75.

**Links:** Cycle Superhighway 9, Grand Union Canal (Brentford Branch), Thames Path

**Attractors:** Brentford district centre, Syon Park, West Middlesex Hospital and The Surgery.

### 4.4.3 Ferry Quays Option

This section describes an option for accessing the Thames Path within Brentford. This easterly option runs via the Ferry Quays development.

**Windmill Road via St Paul’s Recreation Ground to Ferry Quays**

**Description:** From Windmill Road the route would turn east along Clifden Road and south along Brook Road South past the Brentford Football Club ground, and west along Lateward Road. The route would head south through St Paul’s Recreation Ground, requiring a new gateway in the fencing on the south side, and along a footpath on the east side of Berkeley House. The route would cross straight over Cycle Super Highway 9 / A315, and into Town Meadow which is currently one-way northbound only but lightly trafficked. The Ferry Quays development provides attractive riverside restaurants, cycle parking, and access to the Thames Path.

**Work required to form a route:** A new gateway in the fencing on the south side of St Paul’s Recreation Ground would be opened. A cycle contra-flow on the northbound only one-way section of Town Meadow would need to be created. Signage would be required.

**Attractors:** Brentford Football Club ground, riverside restaurants at Ferry Quays development, Brentford School for Girls, and St. Paul’s C Of E Primary School.

**Links:** Cycle Superhighway 9, Thames Path

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*Riverside restaurants and Thames Path at Ferry Quays development*
5 Comparative Summary of Options

5.1 Destinations and Greenways

The following summary of route options considers the criteria set out in the project brief to establish a route that offers easy cycling for beginners using ‘greenways’ and at the same time links to destinations that will maximise the number of users. For the purpose of the tables ‘greenways’ include all off-carriageway links including cycle tracks, shared paths, parks and canal towpaths. Destinations include rail and underground stations, district centres, major employers such as hospital sites, colleges, schools, leisure centres, sports fields and parks.

Star rating for commuter route and leisure routes:

*** Excellent
** Good
* Adequate

Route with longest section of ‘Greenway’ scores maximum.

5.2 Harrow

<table>
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<tr>
<th>Criteria</th>
<th>Preferred Route via Golf Course and existing Belmont Trail</th>
<th>Route Option via on-street diversion around golf course</th>
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5.3 Brent

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<th>Route Option via Sudbury Court Drive and Horsenden Hill</th>
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5.4 Ealing north of Uxbridge Road

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<th>Route Option via Horsenden Lane to Longfield Avenue</th>
<th>Route Option Rydal Crescent subway to Longfield Avenue</th>
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5.6 Issues to Resolve

This report reflects current progress on the Stanmore to the Thames Cycle Route. The next steps to be taken are as follows, listed by Borough:

London Borough of Harrow:
- The golf course and substation issues to be resolved.

London Borough of Brent:
- Access to Northwick Park station would need to be agreed with TfL

London Borough of Ealing:
- The possibility of a Toucan crossing linking Longfield Avenue across Uxbridge Road and cycle access to Barnes Pikle needs to be agreed.
## 6 Cost Estimates

### 6.1 Harrow Section

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<td>Dropped kerbs to Vernon Drive</td>
<td>2</td>
<td>each</td>
<td>500</td>
<td>1000.00</td>
</tr>
<tr>
<td>Construct 2.5m ramped path to old rail line (60m)</td>
<td>1</td>
<td>each</td>
<td>9000</td>
<td>9000.00</td>
</tr>
<tr>
<td>Upgrade and surface old rail line path to tarmac</td>
<td>900</td>
<td>linear m</td>
<td>100</td>
<td>90000.00</td>
</tr>
<tr>
<td>Upgrade existing stone path</td>
<td>750</td>
<td>linear m</td>
<td>70</td>
<td>52500.00</td>
</tr>
<tr>
<td>New stone path at rear of houses</td>
<td>400</td>
<td>linear m</td>
<td>100</td>
<td>40000.00</td>
</tr>
<tr>
<td>Repairs to kerbs etc at Dobbin Close</td>
<td>1</td>
<td>item</td>
<td>2000</td>
<td>2000.00</td>
</tr>
<tr>
<td>Surface lighting solar studs</td>
<td>2000</td>
<td>linear m</td>
<td>11</td>
<td>22000.00</td>
</tr>
<tr>
<td>Construct 2.5m ramped tarmac path to Christchurch Avenue</td>
<td>60</td>
<td>linear m</td>
<td>300</td>
<td>18000.00</td>
</tr>
<tr>
<td>Tree clearance</td>
<td>1</td>
<td>each</td>
<td>2000</td>
<td>2000.00</td>
</tr>
<tr>
<td>Toucan crossing on Christchurch Ave</td>
<td>1</td>
<td>each</td>
<td>50000</td>
<td>50000.00</td>
</tr>
<tr>
<td>Modify central reserve and dropped kerbs to form cycle crossing at Kenmore Rd junction</td>
<td>1</td>
<td>each</td>
<td>5000</td>
<td>5000.00</td>
</tr>
</tbody>
</table>

**Harrow Sub Total**  
£421,100.00
### Brent Section

<table>
<thead>
<tr>
<th>Scheme item description</th>
<th>Amount</th>
<th>Unit</th>
<th>Unit cost rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional signing Kenmore Rd to Northwick Park station</td>
<td>6</td>
<td>each</td>
<td>100</td>
<td>600.00</td>
</tr>
<tr>
<td>Install dropped kerb at station entrance</td>
<td>1</td>
<td>each</td>
<td>500</td>
<td>500.00</td>
</tr>
<tr>
<td>Modify entrance gates to allow cycle access off carriageway</td>
<td>1</td>
<td>each</td>
<td>1000</td>
<td>1000.00</td>
</tr>
<tr>
<td>Additional signing at Proyers Path</td>
<td>2</td>
<td>each</td>
<td>100</td>
<td>200.00</td>
</tr>
<tr>
<td>Signing from The Fairway to East Lane</td>
<td>5</td>
<td>each</td>
<td>100</td>
<td>500.00</td>
</tr>
<tr>
<td>East Lane cycle contraflow track</td>
<td>1</td>
<td>each</td>
<td>5000</td>
<td>5000.00</td>
</tr>
<tr>
<td>Dropped kerbs</td>
<td>2</td>
<td>each</td>
<td>500</td>
<td>1000.00</td>
</tr>
<tr>
<td>Convert zebra to toucan</td>
<td>1</td>
<td>each</td>
<td>50000</td>
<td>50000.00</td>
</tr>
<tr>
<td>Construct new 2.5m path in Vale Farm</td>
<td>120</td>
<td>linear m</td>
<td>120</td>
<td>14400.00</td>
</tr>
<tr>
<td>New Toucan on Watford Rd (spur to Homefield Rd)</td>
<td>1</td>
<td>each</td>
<td>50000</td>
<td>50000.00</td>
</tr>
<tr>
<td>Signing Repton Ave to Wembley High Rd</td>
<td>6</td>
<td>each</td>
<td>100</td>
<td>600.00</td>
</tr>
<tr>
<td>Signing Talbot Rd to One Tree Hill</td>
<td>8</td>
<td>each</td>
<td>100</td>
<td>800.00</td>
</tr>
<tr>
<td>Contraflow lane and reallocate junction priority at Norton Rd</td>
<td>1</td>
<td>each</td>
<td>10000</td>
<td>10000.00</td>
</tr>
<tr>
<td>Resurfacing 2m path within One Tree Hill Park</td>
<td>100</td>
<td>linear m</td>
<td>80</td>
<td>8000.00</td>
</tr>
<tr>
<td>Convert existing signalled crossing to toucan</td>
<td>1</td>
<td>each</td>
<td>30000</td>
<td>30000.00</td>
</tr>
<tr>
<td>Signing Clifford Rd, Manor Farm Rd</td>
<td>3</td>
<td>each</td>
<td>100</td>
<td>300.00</td>
</tr>
<tr>
<td><strong>Brent Sub Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>£172,900.00</strong></td>
</tr>
</tbody>
</table>
### 6.3 Ealing Section

<table>
<thead>
<tr>
<th>Scheme item description</th>
<th>Amount</th>
<th>Unit</th>
<th>Unit cost rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signing Manor Farm Rd to Teignmouth Gardens</td>
<td>10</td>
<td>each</td>
<td>100</td>
<td>1000.00</td>
</tr>
<tr>
<td>Cut back vegetation and clean up sign on perivale Rd</td>
<td>1</td>
<td>each</td>
<td>1000</td>
<td>1000.00</td>
</tr>
<tr>
<td>Resurface 2.5m tarmac path through Golf Course</td>
<td>800</td>
<td>linear m</td>
<td>75</td>
<td>60000.00</td>
</tr>
<tr>
<td>Signing Pitshanger Park to Longfield Avenue</td>
<td>12</td>
<td>each</td>
<td>100</td>
<td>1200.00</td>
</tr>
<tr>
<td>Dropped kerbs to Longfield Walk and Barnes Pikle</td>
<td>4</td>
<td>each</td>
<td>500</td>
<td>2000.00</td>
</tr>
<tr>
<td>Toucan crossing Uxbridge Rd</td>
<td>1</td>
<td>each</td>
<td>50000</td>
<td>50000.00</td>
</tr>
<tr>
<td>Sign spur to Haven Green (Ealing Broadway Station) along Gordon Ave</td>
<td>2</td>
<td>each</td>
<td>100</td>
<td>200.00</td>
</tr>
<tr>
<td>Dropped kerbs Walpole Park</td>
<td>2</td>
<td>each</td>
<td>500</td>
<td>1000.00</td>
</tr>
<tr>
<td>Signing Walpole Park to Whitestile Rd (LCN 85)</td>
<td>8</td>
<td>each</td>
<td>100</td>
<td>800.00</td>
</tr>
<tr>
<td>Sign spur to Northfields station via Lammas Park</td>
<td>4</td>
<td>each</td>
<td>100</td>
<td>400.00</td>
</tr>
<tr>
<td>Dropped kerbs at entry to Lammas Park off Northfield Avenue</td>
<td>2</td>
<td>each</td>
<td>500</td>
<td>1000.00</td>
</tr>
<tr>
<td><strong>Ealing Sub Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>£118,600.00</strong></td>
</tr>
</tbody>
</table>
### 6.4 Hounslow Section

<table>
<thead>
<tr>
<th>Scheme item description</th>
<th>Amount</th>
<th>Unit</th>
<th>Unit cost rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signing (also LCN75) Windmill Rd to Church Rd Isleworth</td>
<td>10</td>
<td>each</td>
<td>100</td>
<td>1000.00</td>
</tr>
<tr>
<td>Resurface 3m wide entry to Syon Park</td>
<td>50</td>
<td>linear m</td>
<td>120</td>
<td>6000.00</td>
</tr>
<tr>
<td><strong>Hounslow Sub Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>7000.00</strong></td>
</tr>
</tbody>
</table>

### 6.5 Total Costs

Total infrastructure costs for the project as described above will be:

- **Harrow** £421,100
- **Brent** £172,900
- **Ealing** £118,600
- **Hounslow** £7,000
- **Total** **£719,600**

Assume design costs at 10% would be £72,000.
Assume contingency of 5% would be £36,000.
7 Business Case

7.1 Cycling in Outer London

There has been a tremendous growth in cycling in Inner London. There is clear potential to replicate this in neighbouring Outer London boroughs. Obviously there are some key differences, most notably that attractors are more dispersed due to less-dense settlement and often larger block sizes, and that traffic speeds on busy roads, especially arterials are often higher than Inner London because there is less intense congestion outside peak hours.

Cyclists in Outer London, particularly newer cyclists, therefore require facilities that offer greater separation from traffic and assistance to cross busy roads, but can take advantage of a more extensive network of parks, green spaces and quiet residential roads compared to Inner London.

While some residents make longer journeys from outer to inner London, a high proportion of trips are within and between local centres, over distances suitable for cycling (a 2 mile journey typically takes around 10 minutes by bicycle).

The diagram below taken from ‘Delivering the Benefits of Cycling in Outer London, TfL, Feb 2010’, illustrates some key points.

The report suggests that current cycle use is 2% of mode share and that a target of 5% of trips (by 2026) is appropriate for Outer London which would represent a 400% increase on 2001 levels. We have therefore taken 5% as a target for trips to be generated from completion of the Stanmore to Thames route.

The Boroughs of Harrow, Ealing, Brent and Hounslow also come out highly in the rankings of boroughs with ‘potentially cycleable trips’ based on analysis of existing travel behaviour and the potential to swap trips towards cycling.
The report estimates that every outer London borough has at least 70,000 trips per day that could theoretically be undertaken by bicycle.

### 7.2 Cycling in West London

TfL published their report on the potential for growth in cycling in 2010 (Analysis for Cycling Potential, Policy Analysis Research Report, Dec 2010). While it is acknowledged that there is greatest potential in the inner London boroughs, the west of London is one of the areas of highest existing and potential cycling in outer London. The Stanmore to Thames route follows an axis of postcodes in Harrow, Brent, Ealing and Hounslow with the well above average potential for cycling as can be seen from the diagram below. Moreover, leisure trips are identified as one of the journey purposes with high potential. Employers such as Glaxo Smith Kline have already demonstrated that commuter cycling can also be successfully encouraged within this area.

The chosen alignment deliberately passes a number of primary and secondary schools, often passing through adjacent green spaces, which we anticipate will help to encourage cycling to school.

The report on the potential for cycling also considers other trips, such as those connecting local town centres, to have significant potential while connections to
public transport stops can help to provide reliable bike/train journey times for longer distance commuters.

There are few good ‘orbital’ public transport links in this part of west London, and (major) north-south axis roads are also limited in number so cycling can potentially help to fill this gap in overall transport provision and is often the quickest mode for some journeys.

7.3 Recent Cycle Usage Surveys

Data was assessed for the previous Sustrans Stanmore to the Thames study.

Data received from Brent Council suggests annual cycle usage of 14,807 at Proyers Path in 2010 (and use has increased annually since monitoring began). Adult cycle use of Carlyon Bridge near Sainsburys in Alperton was recorded as 51,544 in 2010, while cycle use along the canal towpath was recorded as 92,000.

For this study additional surveys were undertaken to give some idea of current use. It should be noted however that much of the route is incomplete and away from existing sections of the LCN so existing levels of use are only a rough guide to the potential.
Survey point at Kenton Park
7.5 Potential Cycling to/from Stations

The ‘Better Stations’ report for the DfT suggested that a 5% mode share for passenger access by bicycle is a realistic target for UK stations. Based on passenger numbers, a figure for potential cycle access and egress trips has been derived looking at 5% (potential) and 2% (likely to be nearer to actual). As a sense check we have also calculated what would be the actual number of bikes parked each day if 2% of passengers arrived at the station by bike (and there was sufficient secure parking to accommodate them). The figures do not look too unrealistic compared to bikes actually parked in some locations, especially when one considers that bikes are conveyed on London Overground services and folding bikes on all services.

<table>
<thead>
<tr>
<th>Station</th>
<th>Annual usage total entry/exit (ORR 2010-2011)</th>
<th>Daily weekday use (2010 sample, TfL)</th>
<th>Assume 2% access by bicycle (potential annual trips)</th>
<th>Bikes parked at station per day if 2% figure correct</th>
<th>Assume 5% access by bicycle (potential annual trips)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanmore</td>
<td>4,353</td>
<td>29,648</td>
<td>41</td>
<td>74,120</td>
<td></td>
</tr>
<tr>
<td>Kenton</td>
<td>820,316</td>
<td>16,406</td>
<td>23</td>
<td>41,016</td>
<td></td>
</tr>
<tr>
<td>Northwick Park</td>
<td>6,133</td>
<td>41,752</td>
<td>58</td>
<td>104,380</td>
<td></td>
</tr>
<tr>
<td>South Kenton</td>
<td>255,140</td>
<td>5,103</td>
<td>7</td>
<td>12,757</td>
<td></td>
</tr>
<tr>
<td>North Wembley</td>
<td>2,330</td>
<td>15,844</td>
<td>22</td>
<td>39,610</td>
<td></td>
</tr>
<tr>
<td>Wembley Central</td>
<td>2,212,662</td>
<td>44,253</td>
<td>61</td>
<td>110,633</td>
<td></td>
</tr>
<tr>
<td>Alperton</td>
<td>4,512</td>
<td>30,736</td>
<td>43</td>
<td>76,840</td>
<td></td>
</tr>
<tr>
<td>Perivale</td>
<td>3,319</td>
<td>22,576</td>
<td>31</td>
<td>56,440</td>
<td></td>
</tr>
<tr>
<td>Ealing Broadway</td>
<td>4,651,020</td>
<td>93,020</td>
<td>129</td>
<td>232,551</td>
<td></td>
</tr>
<tr>
<td>Northfield</td>
<td>6,238</td>
<td>42,432</td>
<td>59</td>
<td>106,080</td>
<td></td>
</tr>
<tr>
<td>Brentford</td>
<td>1,269,148</td>
<td>25,383</td>
<td>35</td>
<td>63,457</td>
<td></td>
</tr>
<tr>
<td>Total annual trips</td>
<td>367,153</td>
<td></td>
<td></td>
<td>917,884</td>
<td></td>
</tr>
</tbody>
</table>
7.6 Potential Cycling to Education

Education trips tend to be from within quite close catchments typically little more than a mile for primary schools and no more than four miles for many pupils and students in secondary and tertiary education. Given appropriate training, secure cycle parking and accessible routes cycling can be a viable option even for primary school children. We have assumed that 2% of pupils/students at each establishment could potentially use part of the route to cycle in during term time (assumed to be approximately 200 days per year) and that this could rise to 5% within the lifetime of the cycle route. The LIP target for cycling to school in Harrow is 1.3% of pupils in 2013-14, by contrast the average mode share for cycling to schools in Ealing is already 3.1%. An assumption that 5% will be achieved within the lifetime of the project does not therefore seem to be unrealistic.

<table>
<thead>
<tr>
<th>Name</th>
<th>Total students</th>
<th>5% students</th>
<th>2% students</th>
<th>Annual trips (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanmore College</td>
<td>1,347</td>
<td>67</td>
<td>27</td>
<td>13,400</td>
</tr>
<tr>
<td>Stanburn Schools</td>
<td>924</td>
<td>46</td>
<td>18</td>
<td>9,200</td>
</tr>
<tr>
<td>Kenmore Park</td>
<td>780</td>
<td>39</td>
<td>16</td>
<td>7,800</td>
</tr>
<tr>
<td>St Josephs Primary</td>
<td>419</td>
<td>21</td>
<td>8</td>
<td>4,200</td>
</tr>
<tr>
<td>Elmgrove Primary</td>
<td>307</td>
<td>15</td>
<td>6</td>
<td>3,000</td>
</tr>
<tr>
<td>Sudbury Primary</td>
<td>197</td>
<td>10</td>
<td>4</td>
<td>2,000</td>
</tr>
<tr>
<td>Wembley High</td>
<td>1363</td>
<td>68</td>
<td>27</td>
<td>13,600</td>
</tr>
<tr>
<td>Montpellier Primary</td>
<td>662</td>
<td>33</td>
<td>13</td>
<td>6,600</td>
</tr>
<tr>
<td>St Benedict’s Secondary</td>
<td>1036</td>
<td>52</td>
<td>21</td>
<td>10,400</td>
</tr>
<tr>
<td>St Gregory’s</td>
<td>496</td>
<td>25</td>
<td>10</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Total annual trips</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>75,200</strong></td>
</tr>
</tbody>
</table>
### 7.7 Potential Trips to Major Employers

Assumes 260 working days per year. Some employers such as Stanmore College are already actively working with WestTrans and Borough Councils to promote active travel, for example Northwick Park hospital has over 100 cycle parking stands.

<table>
<thead>
<tr>
<th>Name</th>
<th>Total employees</th>
<th>5% staff</th>
<th>2% staff</th>
<th>Annual trips (5% staff)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanmore College</td>
<td>150 FTE 800 students</td>
<td>47.5</td>
<td>19</td>
<td>12,350</td>
</tr>
<tr>
<td>Northwick Park and St Marks Hospitals</td>
<td>4,300</td>
<td>215</td>
<td>86</td>
<td>55,900</td>
</tr>
<tr>
<td>University of Westminster Harrow Campus</td>
<td>5,400 (400 staff, 5000 students)</td>
<td>270</td>
<td>108</td>
<td>70,200</td>
</tr>
<tr>
<td>University of West London (Ealing)</td>
<td>10,000 (estimated staff and students)</td>
<td>500</td>
<td>200</td>
<td>130,000</td>
</tr>
<tr>
<td>University of West London (Brentford)</td>
<td>10,000 (estimated staff and students)</td>
<td>500</td>
<td>200</td>
<td>130,000</td>
</tr>
<tr>
<td>West London Hospital (Brentford)</td>
<td>1,900</td>
<td>95</td>
<td>38</td>
<td>24,700</td>
</tr>
<tr>
<td><strong>Total annual</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>423,150</strong></td>
</tr>
</tbody>
</table>
7.8 Potential for Leisure Cycling

While commuting is an important activity around 80% of cycle trips nationally are for leisure purposes, and the TfL report on the potential for cycling in Outer London Boroughs identifies this type of cycling as an important element in promoting cycling. Similarly Sustrans National Cycle Network reports approximately 60% of users to be leisure cyclists, although the proportion is lower on urban routes and higher on rural routes.

The route deliberately incorporates ‘greenways’ along purpose built off-road paths or through existing public parks. It is anticipated that these will act as attractors in their own right by providing traffic-free facilities for novice cyclists and children. Some parks are also adjacent to schools as noted, adding to the safer routes to schools facilities.

These traffic free sections are very important to the route, providing a different experience for people unused to cycling in traffic, and enabling access to green space within the city.

Other leisure destinations include the Harrow Leisure Centre, Vale Farm sports centre and Syon Park historic house and gardens. Visitor numbers for these destinations are not available but as an example of the kind of activity likely to be generated at Syon Park, Ham House near Kingston attracts over 120,000 visitors per annum according to National Trust statistics.

There have been several media reports suggesting that ‘local’ days out to parks and other open spaces are increasing during the recession although it is impossible to quantify this in terms of the Stanmore to Thames route.

The nearest count to the route is on the Sustrans NCN route along the Grand Union Canal where an estimated 92,000 annual users were recorded for the section near Alperton.

7.9 Pedestrian Users

Parts of the route will bring new facilities for pedestrians through new or improved road crossings, and the creation of quiet, well-surfaced, lit routes away from roads. We have assumed that a proportion of the ‘users’ will be pedestrians for the benefit calculations. Clearly some sections close to stations and major employers for example will have many thousands of pedestrian trips each day. To include these in benefit calculations would be an anomaly as it generates very high benefit values. Instead we have suggested a modest number of users across the entire route as a basis for calculations.

7.10 Road Safety Benefits

We have not included a value for road safety benefits within the calculation as it is difficult to derive a realistic figure without more solid information about patterns of use. As noted in earlier chapters the numbers of cycle injury accidents away from the main highways are low in each Borough. We have deliberately chosen a route that avoids main roads and provides a grade separated or signal controlled crossing where such roads are crossed. We have included proposals that will help contribute to pedestrian and cycle safety near schools along the route.
7.11 Health Benefits

It would be possible to quantify health benefits using the WEBTAG values set out in WEBTAG Unit 3.14.1. These have not been included in this calculation as there was some concern over the assumptions made in the earlier Sustrans report. For reference these calculations are shown in the extract below:

The value of health benefits were calculated using the World Health Organisation’s Health Economic Assessment Tool (HEAT). For cycling, calculations were made using the spreadsheet version of the tool. The inputs were the number of trips per day (estimated as the annual usage estimate of the difference in the annual usage estimate between pre and post intervention surveys divided by 365) and an average trip distance. Trips per day were entered into the model, applying the assumption that 90% were return trips, and entering an average trip distance.

At the time of writing the HEAT tool for pedestrian trips was in development and is not considered here.

Applying values to benefits

The following values were used in the calculation:

• benefits to health were calculated for walking & cycling using the HEAT tool and valued assuming a life is valued at 1,500,000 EUR, adjusted assuming 1 EUR = £0.87

• amenity benefit to existing cyclists is valued at 4.73 p/min (the WebTAG value for an off road segregated cycle path)

• the value of the decongestion benefit was calculated using the WebTAG rate for ‘other’ roads in conurbations (27.6 p/km)

• absenteeism benefits are valued based on average daily salary and assuming the same level of employment as for respondents to route user intercept surveys performed on the National Cycle Network

Summary of survey information and estimations of economic value of benefits

Proyer’s Path

• The annual usage estimate for cyclists was 10,913 in 2009, increasing to 14,807 in 2010

• The value of health benefits to additional cyclists are calculated to be £13,135 annually (additional cycling) The estimated value of health benefits over ten years is £133,195 (additional cycling).

Brent, ‘Links to Schools’ scheme (Carlyon Bridge)

• Surveys have been performed in 2006, 2007 and 2010

• The annual usage estimate for adult cyclists increased from 30,296 in 2006 to 51,544 in 2010

• The annual usage estimate for adult pedestrians increased from 430,816 in 2006 to 508,837 in 2010
7.12 Initial Benefit Calculation

The benefit calculation below is based only on the values for cycle and pedestrian infrastructure in Appendices E4.10 (Walking) and E4.11 (Cycling) in the TfL Business Case Development Manual.

The overall length of the route is about 21km, which would equate to around a 60 minute cycle journey for an average rider (WEBTAG suggests an assumption of a speed of 20kmh for cyclists). Given the nature of the route it is likely that most people will make short return trips spending perhaps up to 5km (15 minutes) on the route.

For values in pence per minute we have therefore assumed that most users will spend 15 minutes on the route. For values for surfacing we have applied values per 250m length as in the appendices. For other items values are per feature.

90,000 users per annum (an average of 246 per day) would be sufficient to give an overall benefit of £2,220, 472 which would give a benefit:cost ratio in excess of 3:1 based on the benefit values for the attributes set out in Appendices E4.10 and E4.11 of the TfL manual.
Given the many trip attractors that are listed above it is highly likely that the route will attract many more visitors than this (Delivering the Benefits of Cycling in Outer London suggests that each Borough has at least 70,000 trips per day that could be cycled). If pedestrian use is also taken into account, the route is already attracting more people than this in many locations.

The spreadsheet of cost and benefit calculations is included as an appendix and can be modified and used as part of the preparation of the business case submission.
Appendix A
Route Map and Diagram
Stanmore to the Thames Cycle Route diagram

- **Key**
  - Green = green space or traffic-free route
  - Orange = attractors
  - Blue = transport hubs
  - Grey = other

- **Not all attractors are shown on the diagram. See report for a more comprehensive list.**

```
Stanmore Station
| Stanmore district centre |
| Montrose Walk |
| Stanmore Golf Course |
| Existing Belmont Trail |
| Belmont Synagogue |
| Christchurch Ave - Kenmore Ave |

Harrow metropolitan centre
- Spur

- Harrow
- LB Harrow
- LB Brent

Enfield Grove

- Epping Road

Kenton Recreation Ground
- Kenton district centre
- Kenton Station
- Northwick Park Station

Northwick Park & St Mark’s Hospitals

University of Westminster Northwick Park Campus

- Northwick Park

- Sudbury Court Drive
- Vale Farm Sports Centre
- Horsenden Hill
- Perivale Station

Horsenden Hill Option

Teignmouth Gardens
- A40 Footbridge Option

Ealing Golf Course
- Pitchhanger Park
- West Ealing Station

Teignmouth Gardens A40 Footbridge

Rydal Crescent
- A40 Subway Option

Rydal Crescent A40 Subway

- Haven
- Ealing Green
- Ealing Broadway Station

Ealing metropolitan centre

- Barnes Pike
- University of West London Ealing Campus
- Barnes Pike & Walpole Park Preferred Route

Grand Union Canal
- Spur

- Grand Union Canal (Brentford Arm)
- Elthorne Park

Walpole Park

Northfields Station

University of West London Brentford Campus

- Brentford Station
- Brentford district centre
- Brentford Football Club ground

Syon Park
- Option

- Cycle Superhighway 9
- Syon Park
- Thames Path

Thames Path

Ferry Quays
- Option

LB Brent
- LB Harrow
- LB Ealing

Harrow metropolitan centre
- Spur

- Enfield Grove

Kenton Recreation Ground

Northwick Park & St Mark’s Hospitals

University of Westminster Northwick Park Campus

- Northwick Park

- Sudbury Court Drive
- Vale Farm Sports Centre
- Horsenden Hill
- Perivale Station

Horsenden Hill Option

Teignmouth Gardens
- A40 Footbridge Option

Ealing Golf Course
- Pitchhanger Park
- West Ealing Station

Teignmouth Gardens A40 Footbridge

Rydal Crescent
- A40 Subway Option

Rydal Crescent A40 Subway

- Haven
- Ealing Green
- Ealing Broadway Station

Ealing metropolitan centre

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- Grand Union Canal (Brentford Arm)
- Elthorne Park

Walpole Park

Northfields Station

University of West London Brentford Campus

- Brentford Station
- Brentford district centre
- Brentford Football Club ground

Syon Park
- Option

- Cycle Superhighway 9
- Syon Park
- Thames Path

Thames Path

Ferry Quays
- Option

LB Brent
- LB Harrow
- LB Ealing
Legend
- Borough boundaries
- Preferred route
- Route Options

London Cycling Guide Routes: Provision for cyclists
- Barclays Cycle Superhighways
- Linear Greenway route
- Proposed Sustrans

Routes on quieter roads recommended by cyclists
- Routes through parks for walking & cycling
- Pedestrian-only route

Barclays Cycle Superhighways
Linear Greenway route
Proposed Sustrans

Routes signed for cyclists alongside busy roads

Provision for cyclists

Routes on quieter roads recommended by cyclists
- Routes through parks for walking & cycling
- Pedestrian-only route

© Arup
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<th>Scheme Item Description</th>
<th>Amount</th>
<th>Unit</th>
<th>Unit Cost Rate</th>
<th>Amount x Cost</th>
<th>TfL Benefit Rate</th>
<th>Rate x Amount</th>
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