Framework Travel Plan

The Hive, Barnet FC

117682/MSF/170313
Revision B

Report Prepared For: Barnet FC

SWECO

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1. Introduction

1.1 Background

Sweco has been appointed by Barnet Football Club to provide highways and transportation advice in relation to an application for an extension to the existing Barnet Football Club stadium, 'The Hive', located at The Hive Football Centre, (formerly Prince Edwards Playing Fields), (the 'Site'), Canons Park, in the London Borough of Harrow. The application will seek permission for the provision of additional seating at the stadium to increase the overall capacity to 8,500 (Home capacity 6,000; Away capacity 2,500).

This Framework Travel Plan for the site includes measures for matchdays when Barnet FC are playing at home, along with day to day travel for the existing other uses on the site including the clubhouse, floodlights, games pitches, banqueting facilities and health and fitness facility.

The Site address is:

The Hive, Camrose Ave, London HA8 6AG

1.2 Report Structure

Following this introduction the remainder of this report will be structured as follows:

- Chapter 2: Site assessment
- Chapter 3: Background travel data
- Chapter 4: Objectives
- Chapter 5: Targets
- Chapter 6: Package of measures
- Chapter 7: Matchday Travel Strategy
- Chapter 8: Management
- Chapter 9: Monitoring
- Chapter 10: Action plan

2. Site assessment

2.1 Introduction

In order to assess the impact of the development proposals on the transport network within the vicinity of the Site, it is necessary to review the existing transport conditions. This section therefore, provides information on the relevant pedestrian and cycle facilities, public transport infrastructure and describes the current highway network.

2.2 Application Site

The Hive Football Centre is located within the former Prince Edwards Playing fields, Canons Park, within the London Borough of Harrow, and is now occupied by a football stadium with ancillary facilities, open air grass and synthetic football pitches. The Site is bound to the north by Whitchurch Lane (B461), to the east by residential properties, to the south by Camrose Avenue and to the west by the London Underground Jubilee Line.

The Site location is shown in **Figure 2.1** below.

Figure 2.1 – Site location plan

2.3 Existing Users

As well as the Stadium, The Hive Football Centre has a number of associated ancillary uses including additional full size and small-sided football pitches, coaching areas,

groundsman's house and stores and conferencing and banqueting facilities. These facilities are utilised for a variety of sporting uses

The peak use of the Site is during the evenings, which the site is used for football training and conference/banqueting and on Saturday match day afternoons.

2.4 Existing Stadium

The existing football stadium has an official capacity of 5,176. There are approximately 25 home matches per year and during the 2015/2016 season, attendance ranged from 1,322 to 4,008 spectators. Average attendance was 2,315 spectators whilst the 85th percentile attendance was 3,267 spectators.

Under Football League rules, Barnet Football Club is obliged to provide 10% of its capacity (518 seats) for the use of away supporters. However, the current structure of the stadium is such that away supports currently occupy the northern stand which has a capacity of approximately 871 spectators.

There are two access points to the site; the main access at the southern end of the site, and a secondary pedestrian (and emergency vehicle) only access at the north of the site. Both home and away fans can access the site from either entrance and are then directed to the relevant turnstiles.

There are three designated car parking areas to the east and south of the stadium, as well as coach parking, cycle parking and motorcycle parking provided within the site, as discussed in detail in the following sections of this chapter.

2.5 Walking

The pedestrian network in proximity to the Site is comprehensive, with a range of footways and shared pedestrian cycle routes providing connections between the Site There are footways and street lighting provided on all of the surrounding streets, which means it is possible to access both of the entrances into the Site from all directions by foot. Generally speaking footways are of a good width and in good condition.

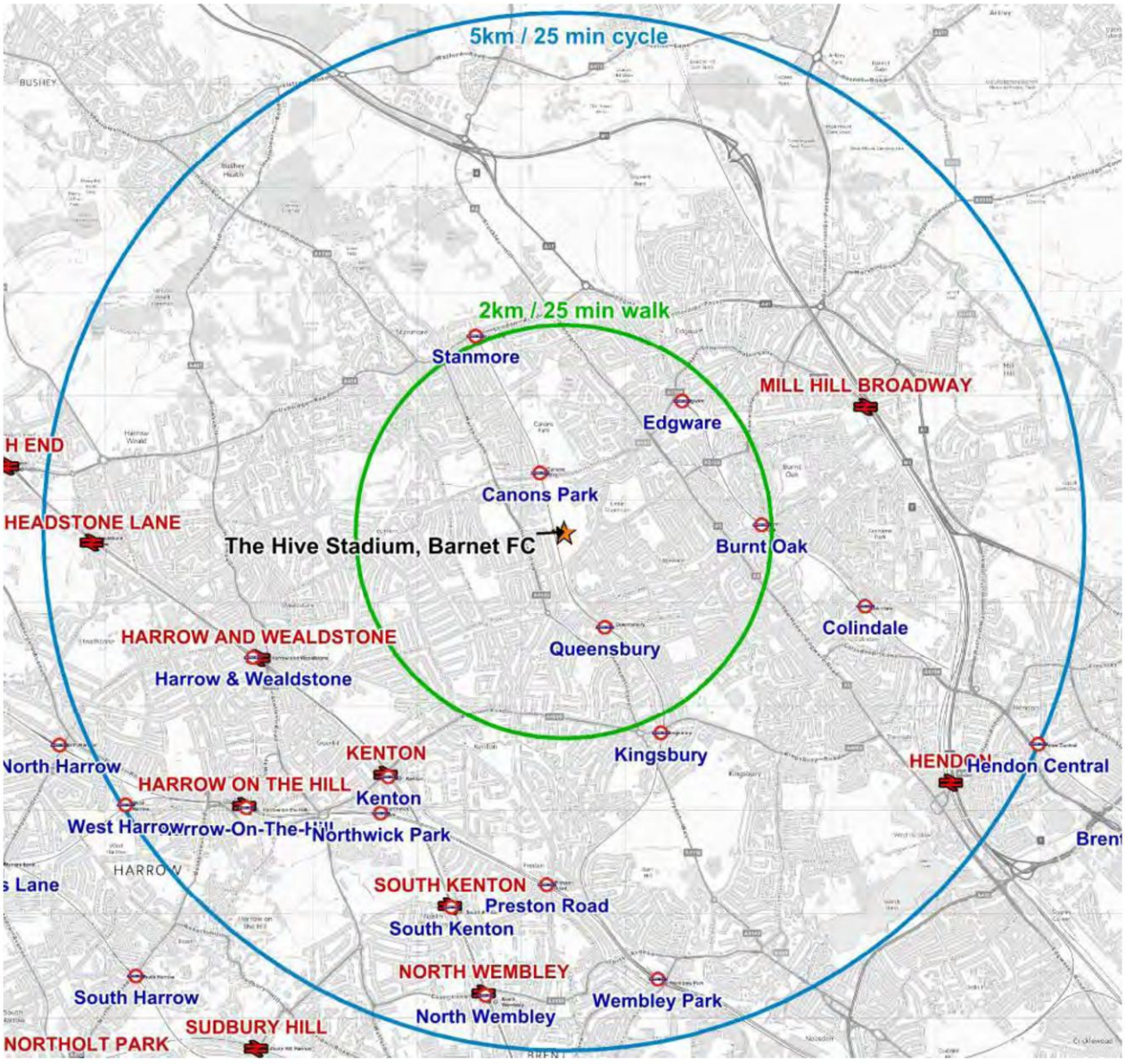
The existing network of footways provide safe and convenient routes for pedestrians to public transport facilities including bus stops and underground stations, in addition to the surrounding residential streets.

A signalised crossing facility is provided outside the entrance to Canons Park underground station. This facility has dropped kerbs and tactile paving, thus providing a safe and convenient route between the station and the northern site access on Whitchurch Lane.

To the south of the site, pedestrian crossing facilities with central refuge islands, dropped kerbs and tactile paving are provided at a number of points on Camrose Avenue to provide safe and convenient routes to the south and south west of the Site. Further afield, all signalised junctions incorporate pedestrian crossing facilities, whilst signalised crossing facilities are provided at the Honeypot Lane Roundabout junction.

Therefore, the pedestrian environment in the vicinity of the Prince Edwards Playing Fields is considered to provide a good level of pedestrian accessibility that will help to encourage and promote walking as the main mode choice to replace short car trips. A 2km/25 min walk isochrone centred on the site is shown in **Figure 2.2**.

Figure 2.2 – Walk and cycle catchment



2.6 Cycling

An extract from the London Cycle Network (LCN) map produced by TfL for the area around the site is attached to this report at **Appendix A**. In addition a 5km/25 minute cycle isochrone is shown in **Figure 2.2** above.

As can be seen, the LCN in the vicinity of the Site comprises a variety of on-road routes signed or marked for use by cyclists, in particular Whitchurch Lane and Marsh Lane to the north, and on-road advisory roads including the roads which bound the southern portion of the Site.

The signalised crossing facility on Whitchurch Lane, outside Canons Park underground station, is a Toucan crossing with off-road cycle lane approaches where cyclists are directed off/onto the main carriageway. At the junction of Whitchurch Lane/Marsh Lane, Advanced Cycle Stop Lines are provided on all arms.

At the Honeypot Lane roundabout junction, there are two-way off-road cycle lanes provided around the roundabout which, combined with the formal crossing facilities on all arms, provide a safe route around this large junction. The crossing facilities on Honeypot Lane are signalised Toucan crossings, whilst the facilities on the minor arms are central refuge islands with cycle lanes provided.

There are some 50 'Sheffield' cycle stands located in a cycle parking area to the south east corner of the stadium. These stands provide a total cycle parking capacity of 100 cycles.

2.7 Public Transport Accessibility

The Public Transport Accessibility Level (PTAL) is a method of measuring accessibility to the public transport network, taking into account walk access time and service availability. The rating is from 1 (very poor) to 6 (excellent). Appendix B of TfL's Transport Assessment Best Practice Guidance details the calculation for determining PTAL.

A PTAL assessment was undertaken for the existing situation, based on TfL's PTAL mapping, (https://tfl.gov.uk/info-for/urban-planning-and-construction/planning-with-webcat/webcat), which considers bus stops within a 640m threshold from the Site and underground/national rail stations within a 960m threshold from the Site. Due to the overall size of the Canons Park Site, separate PTAL assessments have been undertaken for the northern and southern access points.

The northern access achieves a **PTAL score of 3**, which indicates a moderate level of accessibility to the public transport network. A copy of the TfL PTAL calculation is attached to this report at **Appendix B**. The rest of the site is generally a PTAL 2.

2.8 Bus Services

The closest bus stop on Whitchurch Lane is located some 150 metres to the west of the existing northern access point. This bus stop is served by three routes, the 340, 79 and 186. To the south of the Site, the nearest bus stops are located on Camrose Avenue, approximately 200 metres east of the southern access point, which are served by Route 288 only.

A further three bus routes run within the vicinity of the southern access into the Site, including the 79 (Honeypot Lane to the south west), 114 and 614 (both Mollison Way to the south). The nearest bus stops on Honeypot Lane and Mollison Way are some 660

metres from the southern access. This walking distance is outside the recommended PTAL walking threshold for bus stops of 640m and as such, these routes have not been included in the PTAL calculation, hence the low score. However, as these stops are still within a short walking time, (less than 10 minutes), they and the routes which serve them are considered to be accessible from the Site.

The routes and frequencies of the above services are summarised in the following **Table 2.1**, whilst the TfL spider diagrams for the Canons Park area, which covers Whitchurch Lane, and the Queensway area, (Camrose Avenue), are included at **Appendix C.**

Table 2.1 - Existing bus services within the vicinity of the Site

Bus	Route	Closest Stop	Weekday Freq.	Saturday Freq.	Connects
79	Edgware Underground - Alperton	Whitchurch Lane (north access) & Honeypot Lane (south access)	9-12 mins (6 bph)	10-14 mins (5 bph)	Alperton, Wembley Central, Preston Road, Canons Park, Edgware
340	Harrow – Canons Park – Edgware	Whitchurch Lane	10-12 mins (5 bph)	10-14 mins (5 bph)	Harrow & Wealdstone, Canons Park, Edgware
186	Northwick Park Hospital - Brent Cross	Whitchurch Lane	10-13 mins (5 bph)	11-12 mins (5 bph)	Hendon Central, Mill Hill Broadway, Edgware, Edgware Bus, Canons Park, Harrow & Wealdstone
114	Ruislip Station - Mill Hill Broadway Station	Mollison Way	8-12 mins (6 bph)	9-12 mins (6 bph)	Ruislip, Ruislip Manor, South Ruislip, South Harrow, Kenton, Queensbury, Burnt Oak, Mill Hill Broadway
288	Queensbury - Meadfield	Camrose Avenue	7-14 mins (5 bph)	9-15 mins (5 bph)	Edgware, Edgware Bus, Queensbury
614	Queensbury – Edgware – Barnet – Gypsy Moth Avenue	Mollison Way	30 mins (2 bph)	60 mins (1 bph)	Queensbury, Edgware, Barnet, Hatfield
Total			**27 bph**	**26 bph**	

The existing bus services within the vicinity of the site provide links to the surrounding areas in north-west London including Alperton, Wembley, Harrow, Stanmore and Edgware. They offer a combined one way frequency of approximately 26 buses per hour. As shown, bus services are comprehensive, frequent and cover an extensive catchment area.

2.9 London Underground Services

The closest underground station is Canons Park on the Jubilee Line, approximately 190 metres west of the northern access into the Site, on Whitchurch Lane. Queensbury Station, also on the Jubilee Line, is located approximately 1,000 metres to the south of the southern access. Although outside TfL's recommended walking threshold for stations of 960 metres, and thus excluded from the PTAL calculations, Queensbury Station is still considered to be accessible from the southern site access.

Approximately 1.5km north east of the northern site access is Edgware Station which is on the Northern Line.

Both the Jubilee and Northern lines provide frequent daily services through Central London, where the opportunity exists to connect to other underground and mainline services, as well as straight through services to south and east London.

Signalling improvement and modernisation works on both the Jubilee Line and Northern Line to provide faster, more frequent and more reliable services have been completed. In addition, the number of trains run at weekends on the Jubilee Line has been increased. There are no planned improvement works at either Canons Park, Queensway or Edgware Stations.

The Saturday frequency on the Jubilee Line for trains to and from Canons Park and Queensbury's Stations is one train every 3-4 minutes, approximately 17 trains per hour, in each direction. The one way Saturday frequency for trains to and from Edgware Station on the Northern Line is one train every 6 minutes, approximately 10 trains per hour.

2.10 National Rail

As noted in **Table 2.1**, Barnet Football Club can be accessed from National Rail and Underground services via the listed bus routes. Bus service 114 passes through Kenton National Rail Station and takes an average of 22 minutes to reach Queensbury Underground, which is the closest bus stop to Barnet Football Club. From here, it is a 10 minute walk to the stadium.

In addition, bus services 186 and 340 pass through Harrow and Wealdstone National Rail Station and takes 16 minutes to reach Canons Park Underground station. From here, it is an 11 minute walk to Barnet Football Club.

2.11 On-site Vehicle Parking Provision

As noted previously, all vehicular access is gained via the primary entrance on Camrose Avenue, leading to a two-way internal access road which runs north-south through the

centre of the Site, to the east of the stadium. This internal road provides access to the dedicated car, coach and motorcycle parking areas which surround the area as discussed in detail below.

The following parking is permitted on site under planning permission ref: P/0002/7 and P/2191/15):

- 10 coach parking spaces
- 300 car parking spaces
- 19 parking spaces for officials
- 7 disabled spaces
- 100 cycle parking spaces
- 20 motorcycle spaces

The coach parking is to the north of the stadium. At the northern end of the internal access road is a mini-roundabout to allow vehicles, in particular coaches, to turn. Parking areas for television broadcasting vehicles and emergency vehicles is provided to the north of the stadium.

Along the eastern edge of the stadium is the officials and VIP car parking area. Access and egress from this area is from the southern end where an entry control barrier is located. Immediately to the south of the barrier is the motorcycle parking area and an additional emergency vehicle parking area.

To the south of the stadium is the main car park, accessed directly from the internal access road. Entrance into this car parking area is also barrier controlled.

A smaller car park is provided at the south east corner of the Site. This car park is used by a motorcycle training school on non-match days.

Match day parking for all fans within the Site is on a first-come, first-served basis at a cost of £5 per day. Home supporters can park within the Site on match days at a cost of £10 per month. Non-match day parking is also available at the site at a cost of £1 per day. Public car parking is also available at Canons Park station. There are no parking controls to the south of the stadium so parking is also permissible on these local streets.

2.12 Existing Highway Conditions

2.12.1 Site Access/ Camrose Avenue/ Taunton Way

The primary vehicular access into the site is provided via Camrose Avenue, at the southern end of the Site. Camrose Avenue is a 9.6m wide single carriageway, running on a predominately east west alignment from the A5 to the A4140, and is subject to a 30mph speed limit.

Camrose Avenue is predominantly residential in character with footways and street lighting provided on both sides. The properties on the northern side are set back from

the main carriageway with a service road along the front of the properties, whilst a number of those on the southern side have direct vehicular access onto Camrose Avenue. There are no parking restrictions on this service road, and on the vast majority of Camrose Avenue. However, within close proximity of the site access, double yellow line restrictions are provided on the eastbound carriageway. A bus gate is located some 100 metres east of the primary access.

To the east, Camrose Avenue forms a four arm signalised junction with the A5 Burnt Oak and A5109 Deansbrook Road. To the west Camrose Avenue merges into Taunton Way which is similar in character and forms part of the five arm Honeypot Lane (A4140) roundabout.

2.12.2 A5 Burnt Oak Signal Controlled Junction

The A5 forms parts of Transport for London Road Network and provide strategic links to the M1 in the north and Central London to the south. It also provides local access to Edgware, Burnt Oak, Colindale and Cricklewood.

The junction with Camrose Avenue is a four arm signalised crossroads junction with two approach lanes on each of the A5 arms and the A5109 Deansbrook Road arm, whilst Camrose Avenue has a single approach lane. The layout and operation of the junction is such that right turning vehicles pass those from the opposing arm off-side to off-side.

Signalised pedestrian crossing facilities are not provided at this junction, however each arm as dropped kerbs and tactile paving to ease pedestrian movements, whilst central refuge islands are provided on the A5 and A5109 arms. Similarly, there are no advanced cycle stop lines at this junction.

2.12.3 Honeypot Lane

Honeypot Lane forms part of the A4140 which is a London Borough of Harrow road. The A4140 provides local access, to Stanmore, Kingsbury, Queensbury and Neasden, as well as forming part of the strategic link with the A4006 for access to Harrow. Honeypot Lane forms the northern and south-eastern arms of the Honeypot Lane Roundabout with Taunton Way, Charlton Road and Streatfield Road.

To the north of the roundabout, Honeypot Lane is a dual carriageway road with a kerbed central verge. Whilst there is a service road running adjacent to the northbound carriageway which serves the properties on the western side of the road, on-street parking is permitted on the southbound carriageway, thus reducing its effective width to just one lane. The speed limit along Honeypot Lane varies between 30 – 40mph, whilst street lighting and footways are provided on both sides.

2.12.4 Whitchurch Lane

At the northern end of the Site is a secondary access from Whitchurch Lane. Although vehicle access into the Site from Whitchurch Street is possible, the entrance is gated and as such, access from Whitchurch Street is for non-motorised modes.

Whitchurch Lane (B461) is an approximately 7.5 metres wide, predominantly residential street, running on an east west alignment from the A5 to the A4140 Honeypot Lane. Within the vicinity of the Site, the westbound carriageway is subject to double yellow line parking restrictions, whilst the eastbound carriageway has single yellow line restrictions. To the west of the site the restrictions are in place Monday to Friday 8am – 6pm, and to the east between 2pm-3pm Monday to Friday. Continuous footways and street lighting are provided on both sides of the carriageway.

The junction of Whitchurch Lane with the Honeypot Lane is a four arm signalised junction, with Marsh Lane (A4140), which forms the northern arm and Wemborough Road, which forms the western arm. The right turning traffic from the A4140 arms are subject to signal control, which the right turning traffic from the minor arms pass off-side to off-side.

Crossing points with dropped kerbs, tactile paving and central refuge islands are provided on the Whitchurch Lane, Marsh Lane and Wemborough Lane arms, however these pedestrian crossing facilities are not signalised. On the Honeypot Lane arm, a signalised staggered pedestrian crossing facility is provided.

The junction of Whitchurch Lane and the A5 to the east is also a four-arm signalised junction. The layout of this junction is very similar to the A5/Camrose Avenue junction described earlier. However, the pedestrian crossing points on the A5 arms are both staggered crossing facilities.

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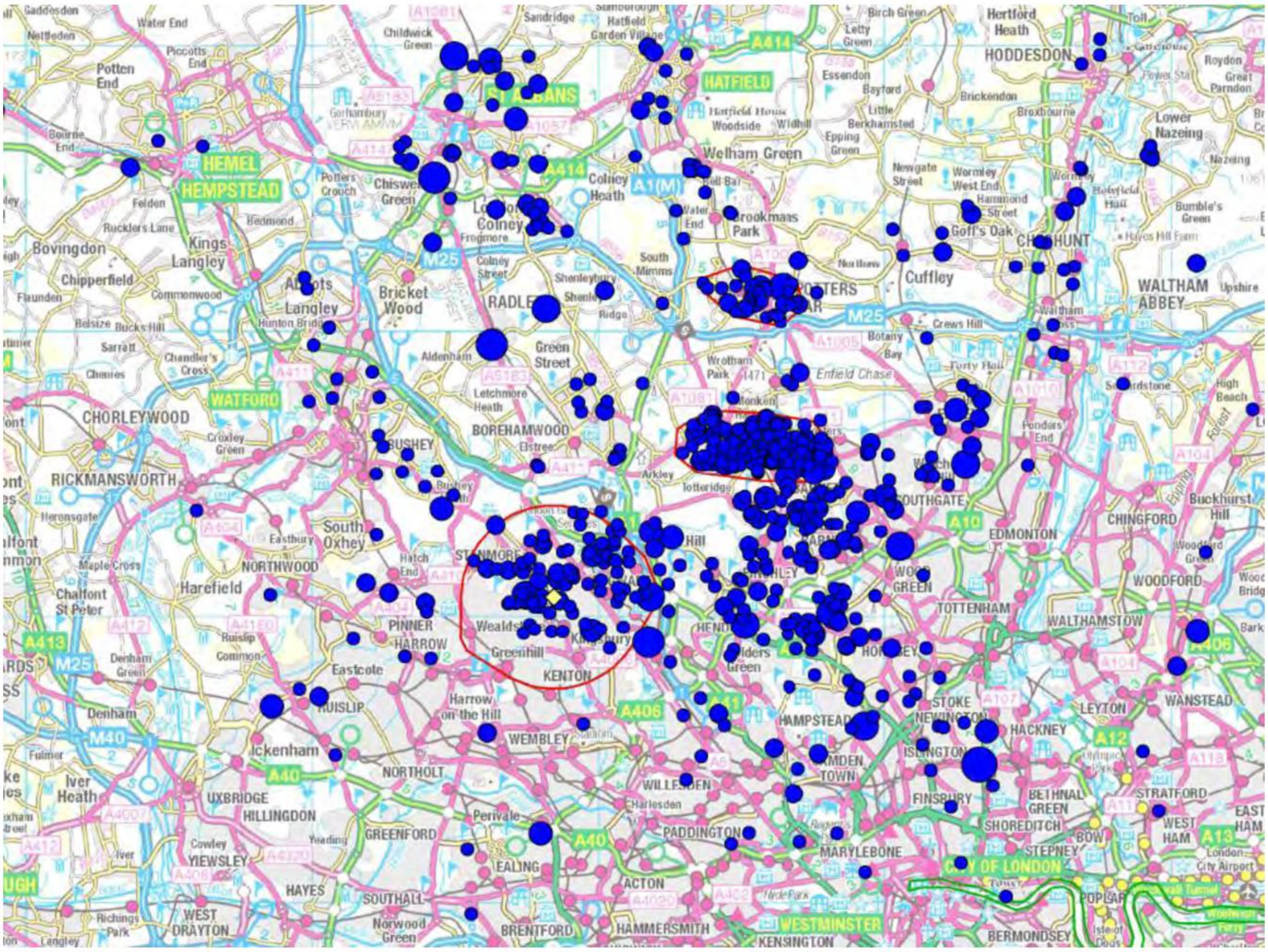
3. Background Travel Data

This section provides a picture of the existing travel patterns of supporters to The Hive. The location of home fans residence is considered based on data from Season Ticket Holders and the results of interview surveys undertaken on Saturday 30th April 2016 at the last home game of the season against Yeovil Town. The survey also provides data on how supporters travelled to The Hive (the mode share). Then a comparison is made to supporter travel from other analogous stadia to benchmark the findings.

3.1 Distribution of Supporters trips to The Hive

Barnet FC hold a database containing the postcodes of home supporters registered with the club. The postcode information is an indication of the travel origin of home supporters.

Figure 3.1 – Travel Origin of Home Supporters – (Source: 2015/2016 Season Ticket Holders Database)

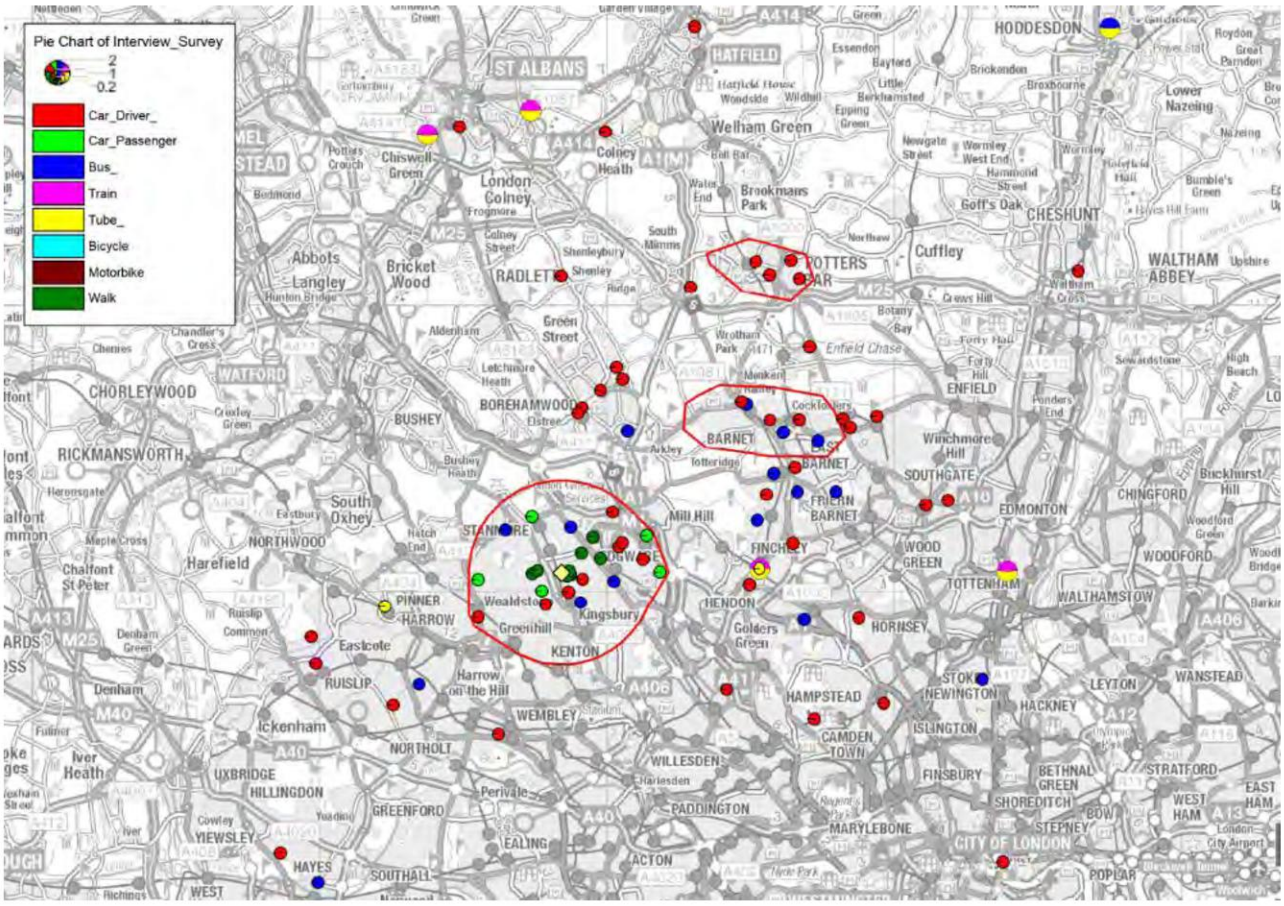


For assessment purposes, a survey of home supporters who attend a particular match at the stadium is also helpful. The survey was a questionnaire survey of Barnet FC (home) and Yeovil Town (away) supporters attending the match on 30th April at The Hive.

A total of 2,379 supporters attended the match on the day of the survey including 455 away supporters. A total of 170 supporters participated in the survey, representing 7% of the total crowd. Of the 170 supporters that participated in the survey, 124 responded that they were home supporters and 17 that they were away supporters.

The travel origin of Barnet FC supporters for the matchday survey is shown in **Figure 3.2**.

Figure 3.2 – Travel Origin of Home Supporters – (Source: 2016 Matchday Travel Survey)



The survey shows a similar proportion of home fans that travelled from each of the local main areas indicated by the supporters' survey namely High Barnet, along the A1(M) corridor, around the stadium and Edgware and East Herts. The majority of home fans live near to or within an easy journey of the old ground at Underhill, High Barnet. However there is clearly a growing support base around the ground and in the Edgware area, as one would expect after 3 years at the new ground.

The origin of away supporters will be dependent on the geographical location of the away football team.

3.2 Modal split for trips to The Hive

3.2.1 Existing Barnet FC Mode Split

Table 3.1 shows the results of the survey undertaken at the Hive on 30th April 2016 for home fans.

Table 3.1 - Home fan survey results at Barnet FC

Mode	Existing Home Supporters Mode Split
Walk	8.1%
Cycle	0%
Car Driver	59.7%
Car Passenger	9.7%
Bus	18.5%
Coach	0%
Underground	3.2%
Rail	0.8%
Other	0%

Table 3.1 shows that Barnet FC has a high car driver mode split, but with a number of home fans using the bus, travelling as a car passenger and walking. Just 3.2% use the Underground despite the proximity of Canons Park station. The mode shares are not surprising given the location of home fans who, as set out previously, mostly live near or within an easy journey by public transport, to the old ground at Underhill. The radial train and Underground routes into London mean that travel by existing home supporters based around the old ground is not practical by train or tube, hence the low tube use.

Data for the Yeovil fans, the away fans for the surveyed match, unfortunately provided too small a sample size to be statistically relevant. Therefore the comparative away fan average mode split data used in the approved Brentford FC TA and TP has been used as a proxy for away fan mode split at Barnet FC, as discussed in the following section.

3.2.2 Benchmark analysis

The Brentford Community Stadium Travel Plan and Transport Assessment is the most recently approved outer London football stadia of an analogous size and location to The Hive. Therefore the approved analysis and surveys undertaken for this new home ground for Brentford FC provides comparative home and away fan mode of travel to The Hive. The Brentford Community Stadium is to be located approximately 200m north east of Kew Bridge station in an area which has a PTAL of 2 on the northern side and 3 on the

southern side. The Hive also has a PTAL level of 3, is close to two tube stations and would attract away fans from similar locations.

As part of the Brentford FC travel plan, home and away fan travel surveys were undertaken at three different games at the existing stadium at Griffin Park. Griffin Park also has a PTAL of 3. The Brentford FC surveys asked home and away supporters how they travel to the existing stadium and how they would travel to the new stadium. The surveys were undertaken as follows:

- On Tues 6th Aug 2013 v Dagenham and Redbridge. A 34% response rate was achieved for the home fans and an 87% response rate was achieved for the away fans.
- On Sat 10 Aug 2013 game v Sheffield United. A 35% response rate was achieved from the home fans and a 56% response rate was achieved for the away fan survey.
- On Sat 9th Feb v Bury. A23% response rate was achieved for home fans and a 43% response rate was achieved for the away fans.

Table 3.2 shows the results of the Brentford FC home fan surveys.

Table 3.2 - Brentford FC Home Fan Mode Split Survey Results

Mode of Travel	Brentford FC vs Bury	Brentford FC vs Dagenham and Redbridge	Brentford FC vs Sheffield United	Average
Walk	14%	11%	14%	13%
Cycle	1%	1%	1%	1%
Car Driver	21%	19%	17%	19%
Car Passenger	25%	22%	21%	23%
Bus	14%	20%	21%	18%
Coach	0%	0%	0%	0%
Underground / Rail	20%	26%	26%	24%
Other	4%	1%	1%	3%
Total	**100%**	**100%**	**100%**	**100%**

Table 3.2 shows the average Brentford FC home supporter car driver mode split to be 19%, with fairly even percentages of car drivers per game. In addition, 42% arrive by public transport and 23% are a car passenger. Brentford FC have a strong local fan base and have been at the same stadium for over 100 years. Their existing travel patterns, without a Travel Plan in place, provide a robust guide as to what home supporter travel patterns should be for new fans of Barnet FC who would live closer to The Hive than most of the existing fans (new fans are likely to go to Barnet FC because it is an easy journey).

Table 3.3 shows the results of the Brentford FC away fan mode split surveys.

Table 3.3 - Brentford FC Away Fan Mode Split Survey Results

Mode of Travel	Bury Fans	Dagenham and Redbridge Fans	Sheffield United Fans	Average
Walk	1%	0%	1%	1%
Cycle	0%	0%	0%	0%
Car Driver	19%	8%	9%	12%
Car Passenger	33%	11%	14%	20%
Bus	8%	4%	3%	5%
Coach	10%	32%	42%	28%
Underground / Rail	28%	45%	30%	34%
Other	1%	1%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**

Table 3.3 shows an average of 12% of away fans arriving by car, 28% by coach and 39% by public transport. Car passengers make up 20% of the away fan mode split.

The away fan mode split at Griffin Park, the current home of Brentford FC, provides a good guide for the mode split that is likely to occur at The Hive, given the two grounds have a very similar level of accessibility by public transport.

3.2.3 Existing Supporter Trips

Table 3.4 shows the existing Barnet FC home fan mode split and the adopted away fan mode split based on the Brentford FC survey data.

Table 3.4 – Adopted mode split

Mode	Home Supporters	Away Supporters
Walk	8.10%	1.00%
Cycle	0.00%	0.00%
Car Driver	59.70%	12.00%
Car Passenger	9.70%	20.00%
Bus	18.50%	5.00%
Coach	0.00%	28.00%
Underground/rail	4.00%	34.00%
Other	0.00%	0.00%

The attendance at The Hive for the 2015/2016 season has been assessed and is provided in Appendix E. The 85th percentile attendance of 3,309 supporters has been used for analysis in this report as it represents the attendance at 85% of all games and therefore the crowd management that is in place for the absolute majority of occasions. Additional crowd management is arranged for games with an unusually high attendance. The average attendance was just 2,315 supporters so use of the 85th percentile attendance is robust.

Table 3.5 shows the application of the 85th percentile attendance of 3,309 to the adopted mode split for travel.

Table 3.5 - Trip generation by mode at 85th percentile

Mode of Travel	Existing Home Supporter Trips (from 2016 survey)	Existing Away Supporter Trips (from Brentford TA)	Total Trip Generation
Walk	153	14	167
Cycle	0	0	0
Car Driver	1125	171	1296
Car Passenger	183	285	468
Bus	349	71	420
Coach	0	399	399
Underground / Rail	75	485	560
Other	0	0	0
Total	1885	1425	3310

This analysis indicates that 1296 cars were driven to Barnet FC home games. In reality this figure is likely to be less as the survey was undertaken at the game against Yeovil on 30th April where the attendance was lower than the 85th percentile (2,379 supporters). It is typical that a lower proportion drive at well attended games because season ticket holders who go to all games are mostly from the local area around the old ground in Barnet and drive. High attendance games attract more local supporters. Therefore extrapolating up will result in a predicted number of cars that is much greater than reality. Therefore the analysis in this report presents very much a worst case in terms of likely car use.

4. Objectives

The National Planning Policy Framework, the LB Barnet Local Development Framework and the London Plan set out transport objectives at reducing the need to travel by private car and utilising sustainable methods of travel to access a development.

Therefore, this travel plan sets out the following objectives, which meet the aims of national and local planning guidance:

- Reduce the reliance for matchday travel by single occupancy vehicle.
- Promote environmentally sustainable travel through effective communication and marketing, in line with LB Barnet's Local Development Framework (LDF), the Mayor's Transport Strategy and the London Plan.
- Ensure that all home and away supporters are aware of the range of sustainable travel options available to them.
- Increase the percentage of matchday travel by coach, underground, bus and shared vehicle.
- Minimise traffic and off-site parking associated with the proposals on the local road network
- Monitor the travel plan to ensure it is achieving its objectives.

Given that the largest group of people to travel to the site on matchdays are home supporters, the primary focus of the travel plan is on that group. By doing so, this provides the best opportunity to influence travel patterns and meet the objectives of the travel plan.

In addition, away supporters make a significant proportion of matchday travel. Therefore, the objectives also aim at reducing the need for away fan travel by private vehicle.

Staff should also lead the way in travelling to and from the site using sustainable methods and they are therefore also included in the Travel Plan.

5. Targets

In order to meet the travel plan objectives, a number of travel plan targets are required to provide specific, measurable results over a 5 year period. Interim targets should also be set at years 1 and 3 after stadium expansion completion. The targets should improve on baseline mode share results captured during the existing site surveys.

Monitoring surveys will be adopted during the first, third and fifth years after stadium completion to monitor the progress of the travel plan and to identify if any additional measures are required. TfL guidance states that the targets should be ambitious and SMART (specific, measurable, attainable, realistic and timebound).

The current Mayor's Transport Strategy aims to:

- Achieve a 5% modal share for cycling (currently 2%)
- Significantly increase walking mode share above the current 24%
- Reduce private motorised transport by 4% from a base of 43%
- Achieve a 60% reduction in London's CO2 by 2025

5.1 Proposed Matchday Modal Split & Trip Generation

The strategy to be adopted upon opening of the expanded stadium is to reduce the percentage of existing home supporters arriving by private car by around 10% to 48%. This shift is expected to be achieved by:

- Encouraging existing supporters to car share
- Help to arrange matchday coaches for home supporters from existing areas of residence

The new stadium will also attract new, more local support. Indeed, ease of travel is a major factor for new supporters deciding that they will attend games. The second Brentford Community Statement TA includes results of a non season ticket holder survey, which indicated very local trips are made. As the majority of new supporters will be able to either walk, cycle or take public transport to the stadium, a mode share for these new supporters that is more representative of other London clubs is likely. **Table 5.1** shows the mode share for north and west London grounds where surveys have been undertaken.

Table 5.1 – Surveys at local major football grounds

Mode of Travel	White Hart Lane, Tottenham Hotspur FC	Griffin Park, Brentford FC	Emirates Stadium, Arsenal FC
Walk	2%	13%	7%
Cycle	0.3%	1%	
Car Driver	42%	19%	12%
Car Passenger		23%	
Bus	8%	21%	78%
Coach	0.2%	0%	
Underground / Rail	44%	21%	
Other	1%	2%	3%

Brentford has a total of 42% arrivals by car and 19% car driver and is more analogous to The Hive than the other stadia. Therefore for new local supporters the home supporter mode split as surveyed at Griffin Park has been used.

Table 5.2 displays the future (after 5 years of opening) matchday modal split with the implementation of travel planning. Based on the existing mode of travel to The Hive, the following SMART targets are shown in **Table 5.2**.

Table 5.2 – Barnet FC Future Mode Split (after 5 years)

Mode of Travel	Existing home supporter mode split	New supporter mode split (live more locally)	Future away supporter mode split (same as existing)
Walk	8%	13%	1%
Cycle	1%	1%	0%
Car Driver	48%	19%	12%
Car Passenger	15%	23%	20%
Bus	19%	21%	5%
Coach	6%	0%	28%
Underground / Rail	4%	21%	34%
Other	0%	2%	0%
Total	**100%**	**100%**	**100%**

The above shows that there is likely to be a mode shift in existing home fans with 10% fewer driving to The Hive and more car sharing and going by coach, as discussed previously. It is possible that small number, around 1%, of local fans could be encouraged to cycle. The future away supporter mode split will not change as in the existing situation.

Whilst the full capacity increase at The Hive, of up to 8,500 spectators, would be available from day 1 it is likely that the number of spectators would increase more steadily. Therefore the future mode split is set out at 5 years following completion. Interim Travel Plan surveys at 1 and 3 years could inform the progress of the strategy. This is discussed later in this Travel Plan.

Table 5.3 applies the future mode split with the future anticipated 85%ile of supporters.

Table 5.3 – Barnet FC Future Supporter trips (after 5 years)

Mode of Travel	Future existing home supporter trips	New supporter trips (mostly from local area)	Future away supporter trips	Total
Walk	153	157	23	333
Cycle	19	12	0	31
Car Driver	895	230	281	1406
Car Passenger	283	278	468	1029
Bus	349	254	117	720
Coach	0	0	655	655
Underground / Rail	189	254	796	1239
Other (e.g taxi)	0	24	0	0
Total	1887	1210	2340	5413

6. Package of measures

6.1 Existing Facilities

No changes are proposed that will affect day-to-day (non matchday) travel. Matchday travel is covered in the following section. The existing Travel Plan measures will continue for non matchday travel which include:

- *Travel Plan Coordinator*: The continued appointment of a Travel Plan Coordinator (TPC) who is responsible for the implantation of the Travel Plan in relation to the development. The TPC is the first point of contact tor all matters relating to travel to and from the site.
- *Walking:* Clear signage maintained throughout the site. Pedestrian routes are direct, and well-maintained.
- *Cycling:* A total of 100 secure covered cycle parking spaces will be available at convenient locations - 30 cycle parking spaces are located at the entrance to the stadium and 70 spaces along the southern side of the stadium. For those staff taking up cycling the Travel Plan Coordinator will promote local cycle training courses where they can improve their skills and gain confidence. A Bicycle User Group (BUG) allows cyclists to have a forum where they can express their views, provide support and encouragement and suggest improvements to cycle facilities both within and outside the site.
- *Changing facilities:* In addition to the changing facilities provided for football players, changing rooms with showers, lockers and clothes hanging facilities would also be provided for staff, to encourage walking and cycling during all weather conditions.
- *Motorcycling:* A total of 20 motorcycle parking spaces are available. Motorcycling is a more sustainable mode of transport than the private car and is encouraged through the provision of convenient motorcycle parking areas and changing facilities.
- *Car Sharing:* Car sharing is an effective method at reducing peak hour congestion and car parking stress and is encouraged. A total of 15 allocated car sharing parking should be provided in the most attractive locations in the car parking areas, as close as possible to the entrances to buildings.
- *Public Transport:* The Applicant will offer interest free loans for staff to purchase travel cards or season tickets for public transport. The payment for these can be deducted as monthly instalments and will be widely advertised to staff during recruitment and early induction.
- *Marketing:* A key component of the Travel Plan is the marketing and promotion of sustainable travel options and travel plan incentives to all users, including employees and visitors. A variety of marketing activities are proposed including:

  Improved clear, up front travel information on the Barnet FC website. This include links to the TfL journey planner and local car share sites

  Promotional leaflets would be produced and supplied to staff advising them of the facilities available such as cycle parking and changing facilities. The associated health

benefits and cost savings of walking and cycling would be highlighted to encourage people to adopt these sustainable modes of transport.

Publicity material, located at the entrances to buildings and in changing rooms and central lobby areas. Public transport maps and promotion of the TfL journey planner would be on posters in staff and visitor areas

All staff will be given the opportunity to meet with the Travel Plan Co-ordinator, who will also undertake Personal Travel Planning (PTP). Employees can discuss their personal travel issues and have support in identifying the most convenient and cost effective way of accessing their place of work.

7. Matchday Travel Strategy for Barnet FC

The following measures are set out in the existing Travel Plan to promote sustainable travel by supporters on Matchdays:

Public transport information would also be provided on football programmes and sent out with tickets to ensure fans visiting the main stadium are fully informed as to their travel options.

Car Parking Restrictions – car parking is reserved until 2:30 for registered parking members. After 2:30 both Barnet FC supporters and visiting supporters can park onsite for £5 per match. This encourages many of those who drive to arrive early therefore spreading the peak.

The surrounding streets are monitored on three occasions where crowd members exceed 3,000 and report to the Council the level of off-site parking that is experienced. In circumstances where legitimate complaints are received and validated by the surveys, Barnet FC will agree appropriate and reasonable mitigation measures.

In addition to measures set out in the existing planning consent, Brighton and Hove Albion FC's Community Stadium, Brentford Community Stadium and Colchester United FC have been considered in detail, along with measures in practice at:

- Southampton FC's St Mary's Stadium;
- Arsenal FC's Emirates Stadium;
- "The Stoop", the home of Harlequins RFC;
- Twickenham Stadium (TMS developed for the new south stand application);
- Reading FC's Madjeski Stadium.

The measures are part of a proposed Matchday Travel Strategy (MTS). The four main objectives of the MTS are to:

- Maximise the use of non-car modes by supporters attending matches at the proposed stadium;
- Minimise on-street parking by supporters attending matches at the proposed stadium;
- Minimise the impact on local residents and businesses.

7.1 MTS Measures

Schemes and initiatives that should be adopted in the TMS, in addition to those already in place, include:

- The requirement to provide three vouchers for each family car for a stadium parking place to ensure high car occupancy (two vouchers for 2 seater cars);
- Matchday coaches for home supporters from local train stations such as Harrow and Wealdstone and Mill Hill Broadway, and also from areas with clusters of supporters such as High Barnet.
- An extensive publicity campaign by the club to both home and away supporters highlighting the strictly limited car parking at and near the ground, and promoting travel to and from the stadium using sustainable alternatives to the car;
- Incentives for supporters travelling to the stadium especially by car to arrive early and leave late;
- Provision and promotion of a clear access route into the stadium for local taxis and cyclists;
- Measures to discourage staff from driving to the ground, particularly on matchdays. Staff at the stadium should travel by a non-car mode and should be in-situ within the stadium complex 5 hours before the start of the match to avoid simultaneous travel with supporters. This is in line with research at existing stadia (Brighton FC);
- Consider targeting promotions for spectators to those living close to The Hive;
- "See you soon" emails – these emails are sent out to visitors two weeks, and 48 hours before any event, with travel options and advice tailored to the audience.

8. Management

8.1 Management and monitoring

It should be noted that it is unlikely to be necessary to implement all of the measures listed in the previous section for every match. This has been agreed to be the case for several recent stadia, such as the Colchester Community Stadium, where the legal agreement sets out the process whereby travel patterns can be best managed.

A key part of the process will be the establishment of Liaison Group. This will meet at regular intervals (to be agreed with SBC) to prepare and review the transport strategy for the Stadium. Members of the Liaison Group are likely to include:

- London Borough of Harrow;
- TfL and Rail Operators;
- Metropolitan Police, Fire and Ambulance Services;
- British Transport Police;
- Local residents groups;
- Barnet FC's Travel Plan Coordinator

At the start of each football season, the Liaison Group will consider the schedule of fixtures in order to determine the anticipated attendance at each event. From this, the range of measures required for each match will be determined in detail.

Like any effective travel plan, it is recognised that the TMS must be a flexible and adaptable strategy, which would be adjusted through experience and for individual event needs. Part of this will include monitoring of conditions by all modes before, during and after matches, to identify the scope for refining the TMS.

The Travel Plan Coordinator (TPC) is central to the management of the Travel Plan.

Responsibilities of the TPC Coordinator include:

- Implementing the TP measures;
- Coordinating surveys; and
- Monitoring and Reviewing the TP;

9. Monitoring

As part of the TP development, a travel survey will be undertaken by the Club to determine staff and supporter travel behaviour; surveys then can be conducted based on an agreed framework.

The surveys will be composed of questions which will seek to establish:

- Typical travel behaviour for different journey purposes, main travel mode;
- Attitudes towards existing travel modes and perceived barriers to using sustainable measures, e.g. reasons for car use and non use of public transport, walking and cycling; and
- Potential for people to change their travel behaviour.

The results of each travel survey will be presented to the London Borough of Harrow. Secondary indicators that could be used to monitor the success of the TP could be:

- Uptake of cycle parking spaces; and
- Off-site car parking, ascertained by parking beat surveys on Matchdays and Non-matchdays

The Travel Plan will be updated following each review of the travel surveys against targets and to review the implementation of the Travel Plan in relation to its objectives. This will be the responsibility of the Club's TPC.

The updated TP will contain revised targets if targets have been achieved or, if targets have not been achieved, new remedial measures that place emphasis on the cause of targets not being met, e.g. if cycling or walking has not increased as expected, a cycle or walking campaign may be an appropriate remedial measure to further encourage travel by this mode.

The monitoring process will be compliant with TRAVL and iTRACE requirements, in line with Transport for London's iTRACE monitoring procedures. The occupiers will be required to undertake an initial travel survey 3 months post occupation followed by monitoring surveys in years 1, 3 and 5. The travel plan will be reviewed following each survey with new targets and measures set where appropriate. The local authority will be informed prior to surveys being undertaken.

The review will be based on staff surveys and supporter questionnaires.

This section sets out the specific monitoring proposals associated with the site and the means by which progress towards targets will be assessed.

Table 9.1 summarises the monitoring plan, including the data collection activities which will be undertaken and when these will occur. Specific types of information / indicators which will be measured through each activity are also identified.

Table 9.1 – Monitoring plan

Data Collection Exercise	Key Information	When/ How Frequently	Arranged By Whom
Supporter questionnaires	Mode share	Annually	TPC
Off-site Parking Beat Survey	Off-site parking	Annually	TPC
Staff snapshot surveys	Mode share	Years 2 and 4	TPC
Site audit (if site situation / facilities change)	Cycle parking/usage	Annually	Facilities
Season ticket holder and home supporter ticket purchase postcode	Home supporter postcode	Annually	TPC
Records of new travel plan initiatives	New initiatives (e.g. cycle training, car sharing)	Annually	TPC
Staff Travel Survey	Response rate Mode share Awareness level Staff postcode data	Years 1, 3 and 5 and initial TS	TPC

9.1 Continuation after year 5

It is believed that the targets will be met, therefore no further surveys will be required after year 5. However, if by year 5 the travel plan targets are not met, then the TPC will discuss with LB Harrow and what remedial actions will be taken, but it is envisaged that as well as continued implementation of the travel plan these could include a re-launch of the travel plan.

10. Action plan

10.1 Introduction

This chapter draws together the proposals for travel plan implementation, monitoring and review. The actions which will be undertaken are summarised in the action plan, which indicates how the various elements of the plan will be drawn together and how the actions will be prioritised.

The action plan is provided in **Table 10.1**.

Table 10.1 – Action plan

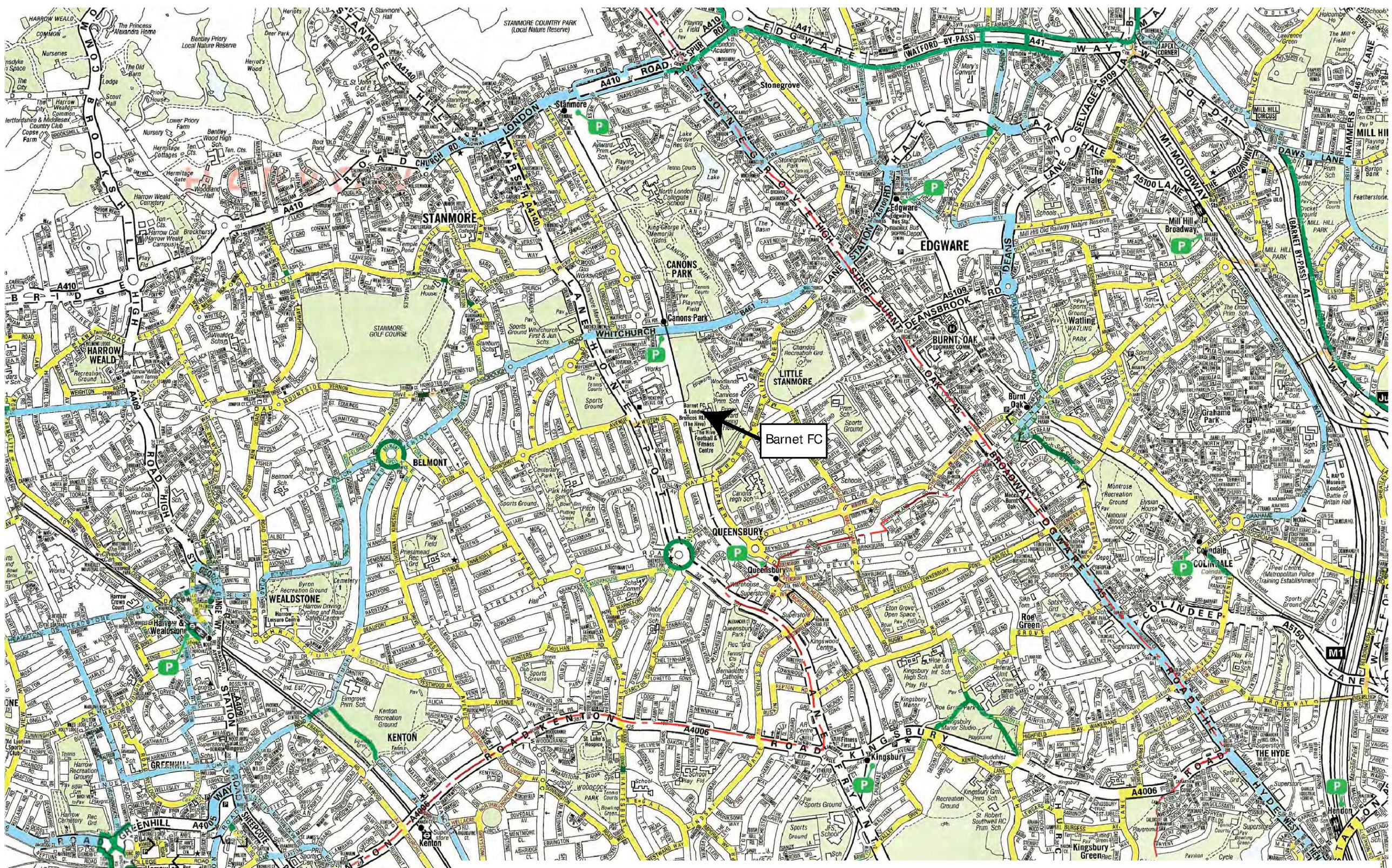
Action	Lead person/ team	Due date	Short term	Medium term	Long term
Travel Plan Strategy					
Travel Plan to be developed by Barnet FC	TPC	By initial occupation	X		
Matchday Travel Strategy to be developed by Barnet FC	TPC	By initial occupation	X		
General Promotion and Travel Awareness					
Travel options maps to be publically displayed on site	TPC	By initial occupation	X		
Improved Barnet FC Website	TPC	Ongoing	X	X	X
Travel advice emails issued to all supporters	TPC	Ongoing	X	X	X
Walking					
Changing facilities available for staff	Barnet FC	By initial occupation	X	X	
Ensure walking maps are included in the travel options maps and posters.	TPC	By initial occupation	X		
Cycling					
Staff and visitor cycle stands to be in place	Barnet FC	By initial occupation	X		
Ensure cycle maps are included in the travel options guide.	TPC	By initial occupation	X		
Changing facilities available for staff	Barnet FC	By initial occupation	X	X	

Action	Lead person/ team	Due date	Short term	Medium term	Long term
Public Transport					
Promote TfL Journey Planner on Travel Options Posters on site.	TPC	By initial occupation to be ongoing	X		
Offer season ticket loans for staff	TPC	By initial occupation	X		
Monitoring					
Initial travel survey	TPC	Within 3 months of occupation	X		
Full monitoring surveys	TPC	Years 1, 3, 5		X	X
Snapshot surveys	TPC	Years 2, 4		X	X
Full review of travel plan	TPC	Year 5			X

Appendices

Appendix A - London Cycle Network Map

117682/MSF/170313 Issue B



Source: TfL Cycle Guide

Appendices

Appendix B - PTAL Calculation

117682/MSF/170313 Issue B

Existing PTAL Assessment

SWECO

Bus *Reliability Factor: 2*

Route	Distance	Freq.	Weight	Walk Access Time	Scheduled Waiting Time	Total Access Time	EDF	AI
340	225	5	0.5	2.8125	6.0	10.81	2.77	1.39
79	225	6	1	2.8125	5.0	9.81	**3.06**	3.06
186	225	5	0.5	2.8125	6.0	10.81	2.77	1.39
							TOTAL	**5.83**

Underground / DLR / Tram *Reliability Factor: 0.75*

Route	Distance	Freq.	Weight	Walk Access Time	Scheduled Waiting Time	Total Access Time	EDF	AI
Canons Park	240	16	1	3.00	1.9	5.63	**5.33**	5.33
							TOTAL	**5.33**

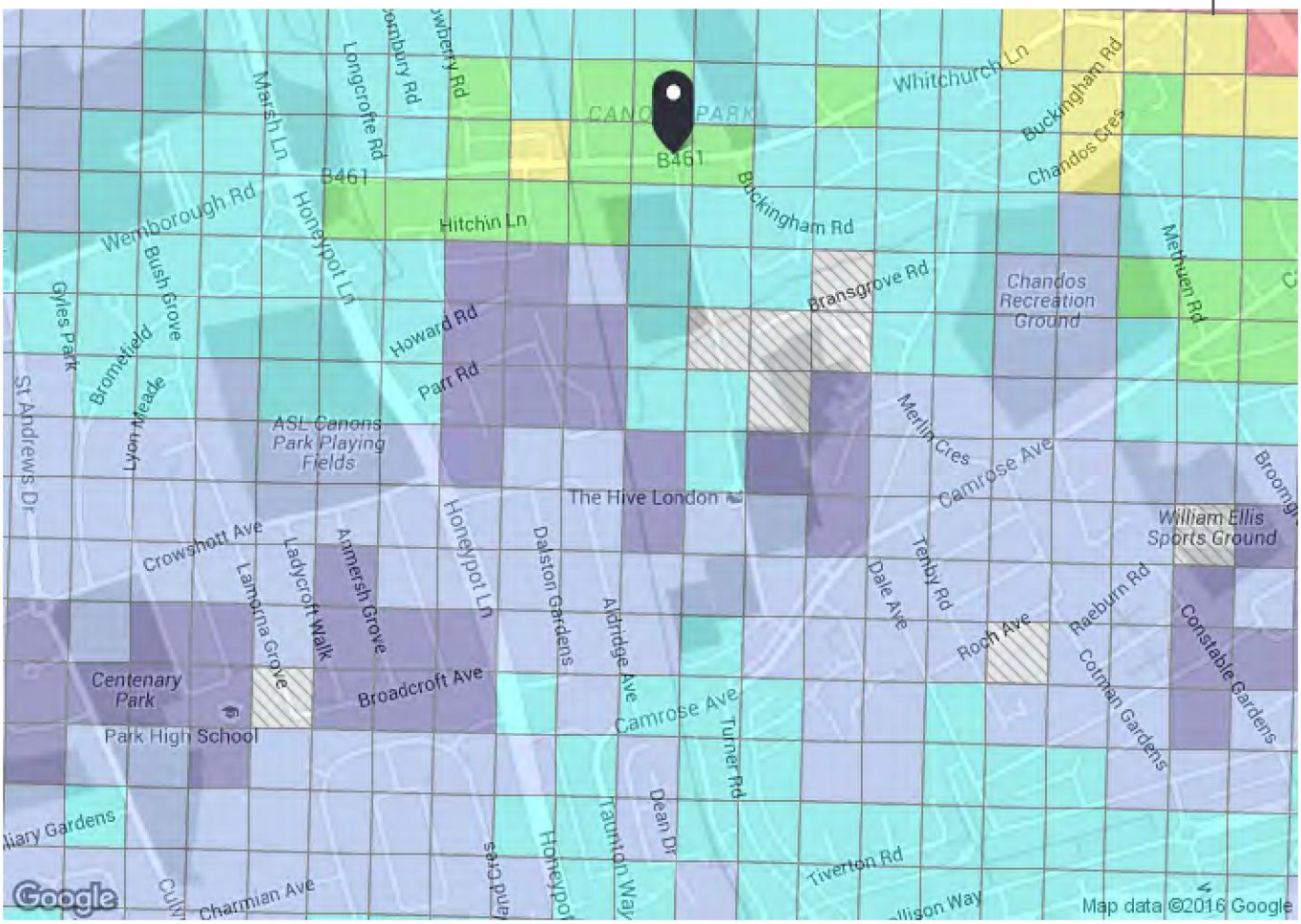
Mainline Rail *Reliability Factor: 0.75*

Route	Distance	Freq.	Weight	Walk Access Time	Scheduled Waiting Time	Total Access Time	EDF	AI
							TOTAL	**0.00**

PTAL	Range of Index
1a (Low)	0.00 - 2.50
1b	2.51 - 5.00
2	5.01 - 10.00
3	**10.01 - 15.00**
4	15.01 - 20.00
5	20.01 - 25.00
6a	25.01 - 40.00
6b (High)	40.01 +

PTAI	11.17

TRANSPORT FOR LONDON



PTAL output for 2011 (Base year)
3

230 Whitchurch Ln
230 Whitchurch Ln, Edgware, Greater London HA8, UK

Easting: 518368, Northing: 191235

Grid Cell: 137994

Report generated: 06/05/2016

Map key - PTAL

0 (Worst)	1a
1b	2
3	4
5	6a
6b (Best)	

Map layers

PTAL (cell size: 100m)

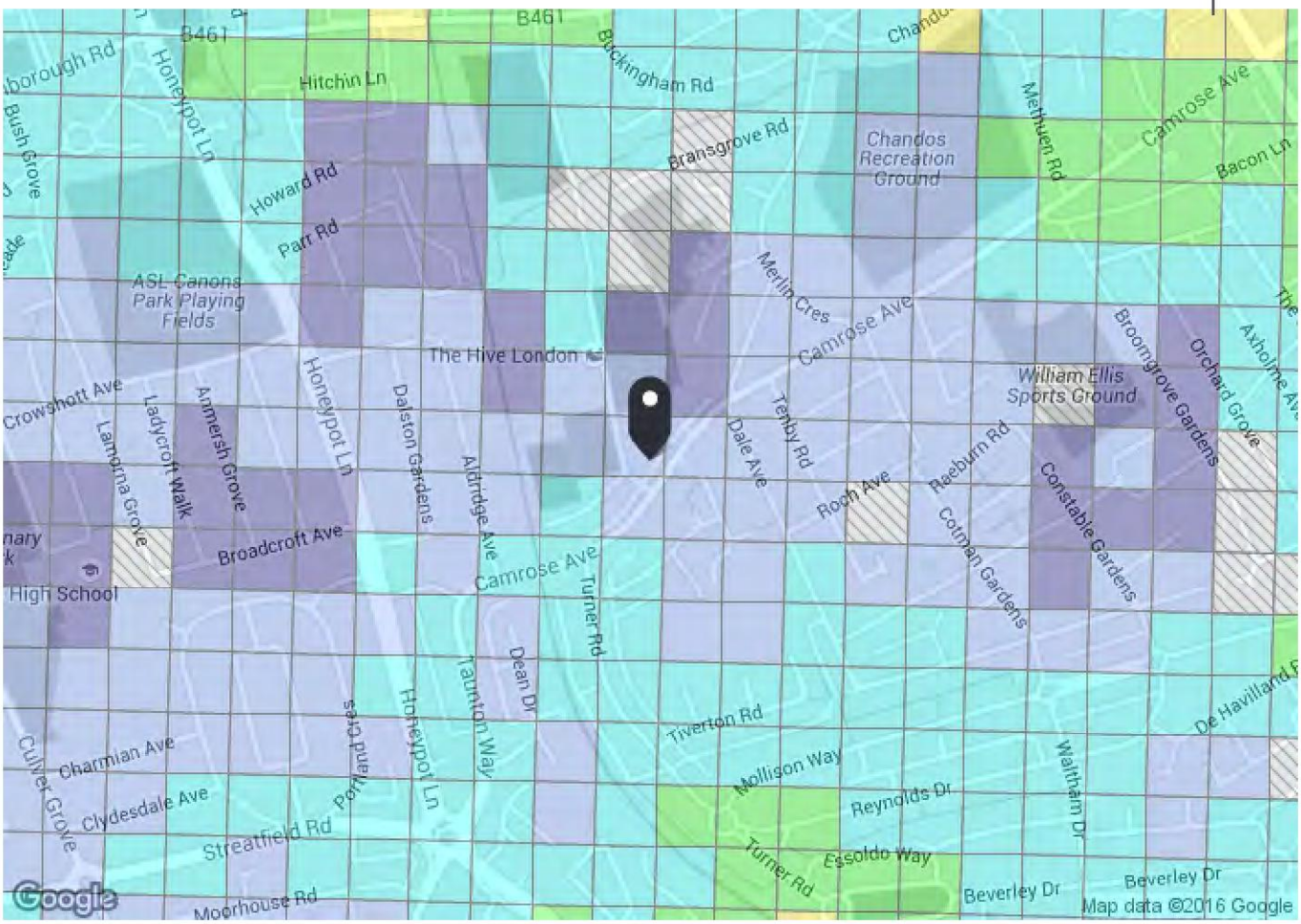
Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency (vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	CANONS PARK STATION	340	150.53	5	1.88	8	9.88	3.04	0.5	1.52
Bus	CANONS PARK STATION	79	150.53	5	1.88	8	9.88	3.04	1	3.04
Bus	CANONS PARK STATION	186	150.53	5	1.88	8	9.88	3.04	0.5	1.52
LUL	Canons Park	'Stanmore-Stratford'	227.23	17.65	2.84	2.45	5.29	5.67	1	5.67
									Total Grid Cell AI:	11.74

TRANSPORT FOR LONDON



PTAL output for 2011 (Base year)

1b

260 Camrose Ave
260 Camrose Ave, Edgware, Greater London HA8 6AG, UK

Easting: 518573, Northing: 190513

Grid Cell: 134271

Report generated: 06/05/2016

Map key - PTAL

0 (Worst)	1a
1b	2
3	4
5	6a
6b (Best)	

Map layers

PTAL (cell size: 100m)

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	CAMROSE AVENUE DALE AVE	288	183.33	6	2.29	7	9.29	3.23	1	3.23
									Total Grid Cell AI:	**3.23**

Appendices

Appendix C - TfL Bus Spider Maps

117682/MSF/170313 Issue B

Buses from Canons Park

Key

- Connections with London Underground
- Connections with London Overground
- Connections with National Rail

Red discs show the bus stop you need for your chosen bus service. The disc (A) appears on the top of the bus stop in the street (see map of town centre in centre of diagram).

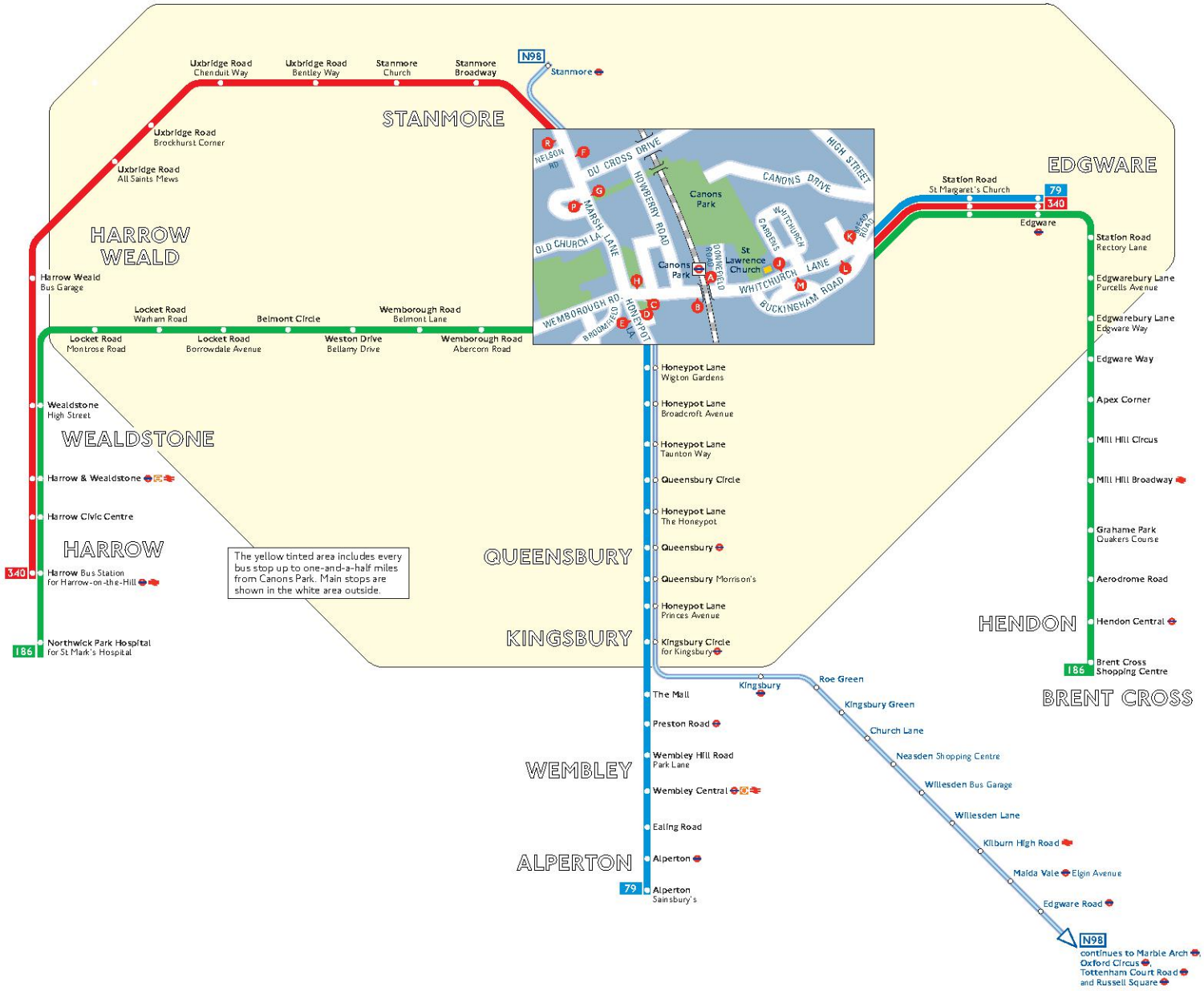
Route finder

Day buses

Bus route	Towards	Bus stops
79	Alperton	B C D L M
	Edgware	A E H J K
186	Brent Cross Shopping Centre	A H J K
	Northwick Park Hospital	B C L M
340	Edgware	A F G H J K
	Harrow	B C L M P R

Night buses

Bus route	Towards	Bus stops
N98	Russell Square	D F G
	Stanmore	E P R



Buses from Queensbury

Route finder

Day buses

Bus route	Towards	Bus stops
79	Alperton	BB C CC EE S T U
	Edgware	AA D DD P Q R
114	Mill Hill Broadway	A AA C CC X
	Ruislip	B BB D W
288	Broadfields Estate	AA EE H J K
324	Brent Cross	C CC EE X
	Stanmore	D DD W

Night buses

Bus route	Towards	Bus stops
N98	Russell Square	BB C CC EE S T U
	Stanmore	AA D DD P Q R

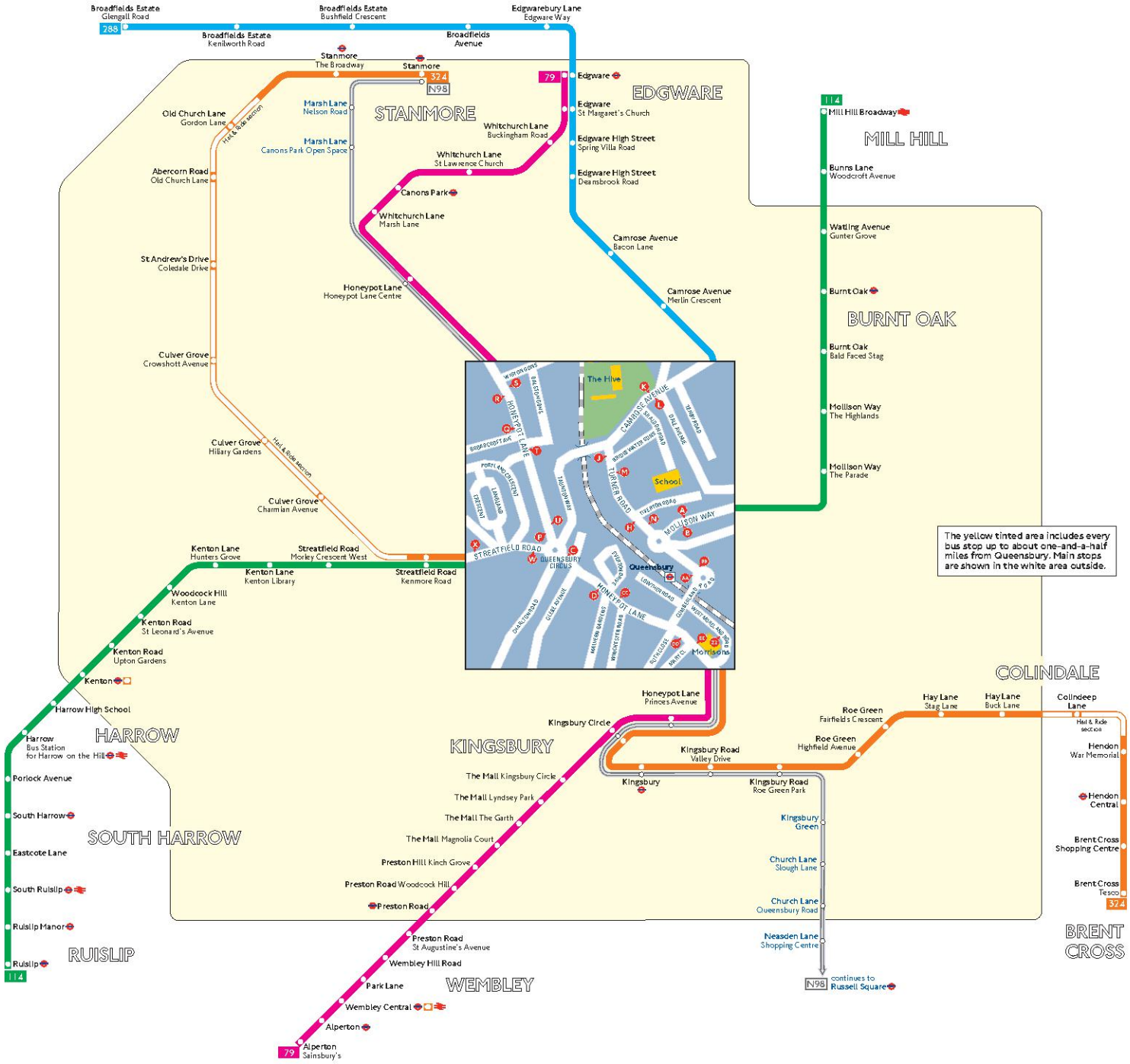
Other buses

Bus route	Towards	Bus stops
614	Hatfield ★	A AA
644	Hatfield ▼	A AA DD
	Wembley Park ▼▼	B BB EE

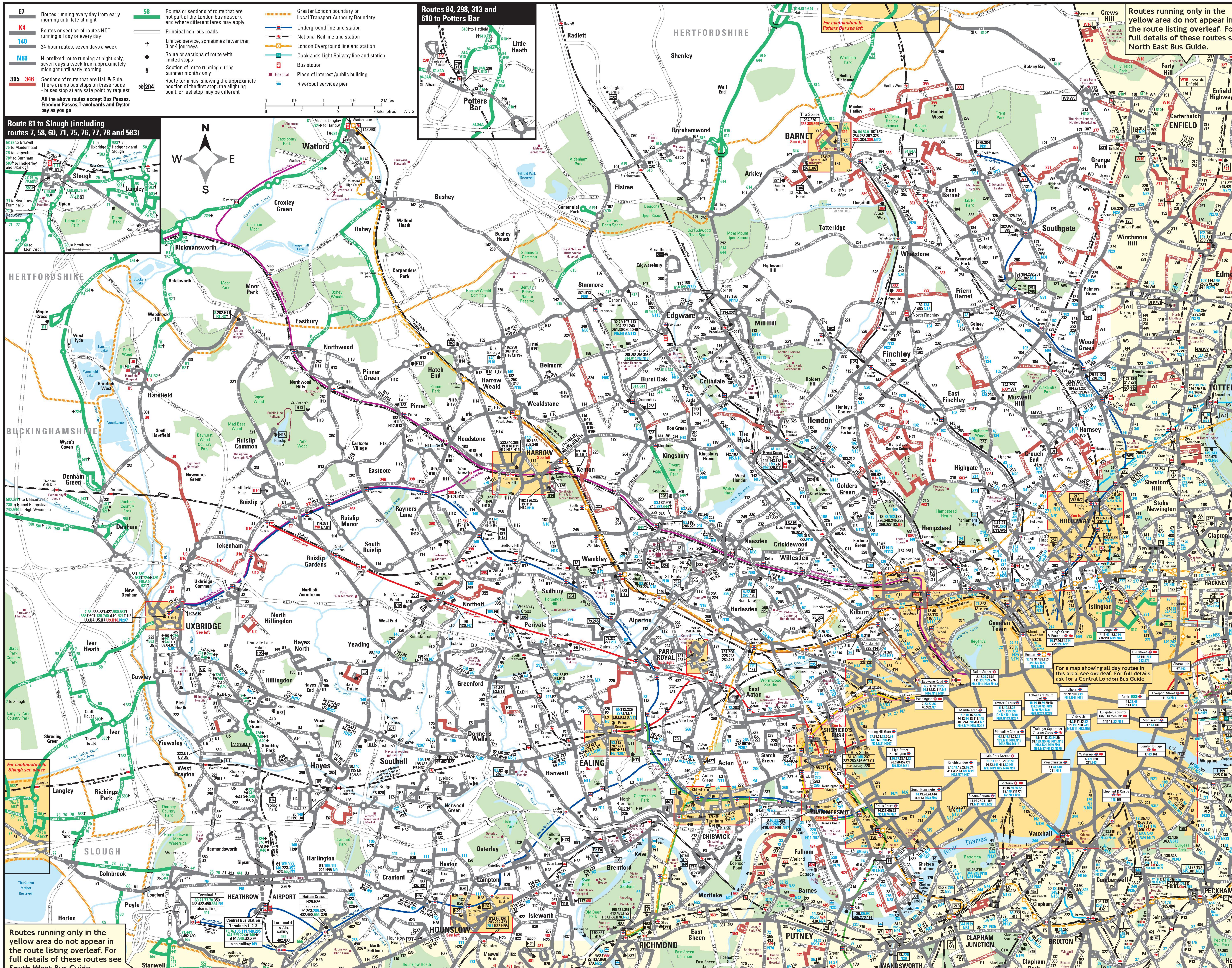
★ Mondays to Saturdays only

▼ Mondays to Fridays peak hours, evenings and Saturday daytime

▼▼ Monday to Fridays peak hours only



Information correct from November 2014



E7 Routes running every day from early morning until late at night
K4 Routes or section of routes NOT running all day or every day
140 24-hour routes, seven days a week
N86 N-prefixed route running at night only, seven days a week from approximately midnight until early morning
395 346 Sections of route that are Hail & Ride. There are no bus stops on these roads - buses stop at any safe point by request
All the above routes accept Bus Passes, Freedom Passes, Travelcards and Oyster pay as you go
58 Routes or sections of route that are not part of the London bus network and where different fares may apply
Principal non-bus roads
Limited service, sometimes fewer than 3 or 4 journeys
Route or sections of route with limited stops
Section of route running during summer months only
204 Route terminus, showing the approximate position of the first stop; the alighting point, or last stop may be different
Greater London boundary or Local Transport Authority Boundary
Underground line and station
National Rail line and station
London Overground line and station
Docklands Light Railway line and station
Bus station
Place of interest /public building
Riverboat services pier
0 0.5 1 1.5 2 Miles
0 1 2 3 Kilometres
7.1.15
Routes 84, 298, 313 and 610 to Potters Bar
Route 81 to Slough (including routes 7, 58, 60, 71, 75, 76, 77, 78 and 583)
Routes running only in the yellow area do not appear in the route listing overleaf. For full details of these routes see North East Bus Guide.
For a map showing all day routes in this area, see overleaf. For full details ask for a Central London Bus Guide.
Routes running only in the yellow area do not appear in the route listing overleaf. For full details of these routes see South West Bus Guide.
For continuation to Potters Bar see left
For continuation to Slough see above
N
S
W
E
HERTFORDSHIRE
BUCKINGHAMSHIRE
Watford
Barnet
Enfield
Harrow
Uxbridge
Edgware
Finchley
Hendon
Wembley
Ealing
Hounslow
Richmond
Heathrow Airport
Hammersmith
Putney
Islington
Camden Town
Kilburn
Southgate
Slough