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## Car Park Survey

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# 1. Introduction

## 1.1 Site Location

The survey was undertaken at High Barnet station car park, Barnet Hill, Barnet, EN5 5RP

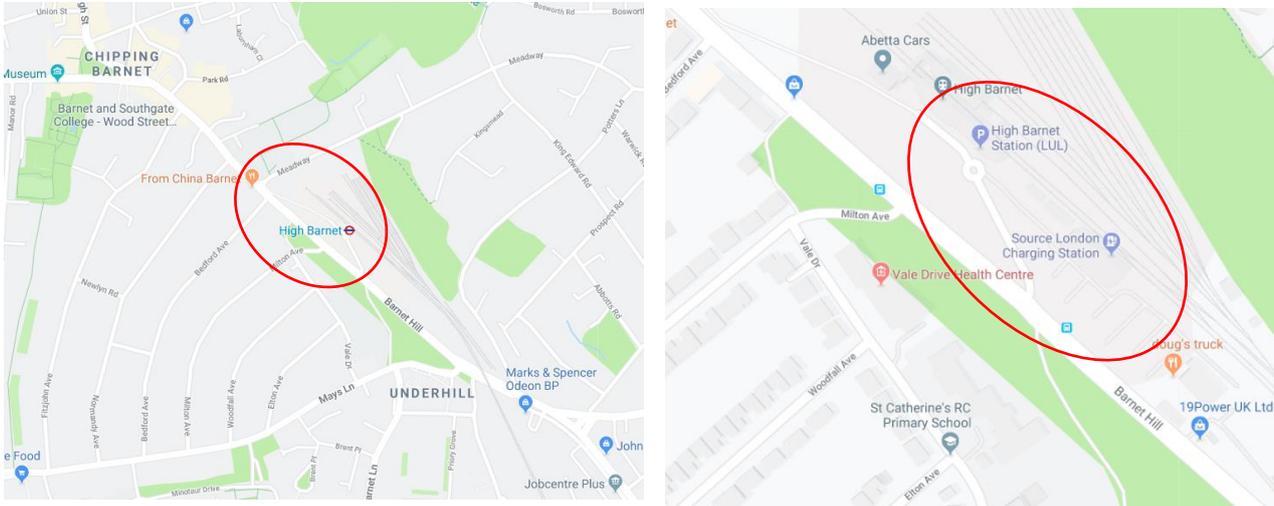


Figure 1: Site Location

## 1.2 Rationale

Surveys were commissioned for the car park High Barnet underground stations in the form of a questionnaire and an ANPR study. A questionnaire survey had previously been commissioned by TFL and carried out by Tracsis in 2017. This survey was commissioned to update the previously captured data and the main aims of the questionnaire were to establish the following details:

- People's motivations for using the car park
- Where car park users are coming from and where they are going to
- Attitudes towards alternative methods of travel to access FC/HB

Meanwhile, the ANPR survey was intended to supplement the questionnaire and help to cross-reference various questionnaire results by providing accurate data on parameters:

- Entry/exit time
- Occupancy rates
- Duration of stay
- Number of users
- Emissions data for future air quality analysis

## 2. Questionnaire Survey

### 2.1 Survey details

Traffic Watch UK was commissioned on 26th April 2019 to carry out the survey, having been selected from a shortlist of five traffic survey companies.

The questionnaire was prepared by Civic Engineers with input from the client team including TfL with additional input from Traffic Watch UK which streamlined the questionnaire. The questions were based on the previous questionnaire, modifying and adding questions where gaps in information, such as attitudes towards alternative methods of travel were identified.

The survey was carried out between Wednesday 8th May – Tuesday 14th May, with the ANPR survey taking place over 24 hours a day for 7 days, and the questionnaire over 4 days from Wednesday 8th May – Saturday 11th May (3 weekdays and 1 weekend day) between 07:00-19:00. The dates were the most immediate available dates before the upcoming school holidays.

The questionnaire survey had a total of 260 responses. The daily breakdown is shown in Table 1. It was noted that there was rain on Wednesday 8th May, with enumerators stating that this may have had an impact on the number of people willing to answer the questionnaire and the time spent answering questions.

*Table 1: No. of Questionnaire Respondents*

Date of Survey	No. of Respondents
08/05/2019	52
09/05/2019	66
10/05/2019	65
11/05/2019	77
Total	260

## 2.2 Results

The data was compiled by Traffic Watch and sent back in raw format in Excel, requiring further analysis and interpretation. The data was processed in two ways:

### Statistical Analysis

Data was split into weekday and weekend groupings, and key statistics such as proportions and averages were calculated such that trends could be identified and represented in tables and graphs.

### Geographical Analysis and Representation

Respondents were asked to provide postcode a location and postcode for the start of their journey. A key piece of further analysis was the plotting of provided origin postcodes, which was achieved by importing the postcodes from the spreadsheet into mapping software. Plotting these locations enabled geographical analysis and representation of where respondents were coming from in relation to High Barnet station, and the existing public transport networks and isochrones/isodistances.

## 2.3 Questionnaire Results Analysis

The key trends found in the questionnaire results were as follows:

- The car park is predominantly a commuter car park
- 66% of weekday respondents are commuters
- On weekends, 64% of journeys are leisure trips with a further 12% for shopping

*Table 2: Journey Purpose*

	Daily Commute	Leisure Trips	Shopping	Other
Weekday	66%	23%	1%	10%
Weekend	13%	64%	12%	11%

### The majority of survey respondents park to use the underground

- 90% of weekday respondents and 96% of weekend respondents stated that they park to use the underground

### Car park stays are predominantly long stays

- 48% of weekday respondents park for longer than 8 hours
- 57% of weekday respondents park for 4-8 hours

Table 3: Estimated Duration of Stay

	< 4 hours	4-8 hours	> 8 hours
Weekday	15%	37%	48%
Weekend	16%	57%	27%

### Majority of car park users are from outside of the boundaries of London Borough of Barnet

Analysis of all given postcodes indicates that 54% of weekday respondents and 58% of weekend respondents come from outside of the London Borough of Barnet

- To the question "How long does your journey take to this location" 52% of weekday respondents and 73% of weekend respondents stated that they are within approximately a 15-minute drive from the station

Table 4: Journey Time from origin to postcode

2019	5 mins	10 mins	15 mins	20 mins	30 mins	45 mins	60 mins	60 mins +
Weekday	18%	32%	17%	7%	10%	3%	4%	9%
Weekend	28%	24%	4%	2%	7%	7%	7%	22%

Overall (including weekdays and weekend), the three main origin locations are:

- Barnet (EN4 & EN5) – 39% of respondents;
- Potters Bar – 12%
- Hatfield – 4%

### Proximity to home is the leading reason for using the car park

- 49% of weekday respondents and 39% of weekend respondents stated that they used the car park as it was the nearest one to their home
- The other main reasons were "direct route to destination" (41% of weekday respondents and 29% of weekend respondents) and availability of spaces (9% of weekday respondents and 18% of weekend respondents)

Table 5: Reason for Using this Car Park

	Nearest to Home	Because I can park	Cost of parking	Direct route to end destination	Other
Weekday	49%	9%	4%	41%	4%
Weekend	39%	18%	14%	29%	13%

Nearly a third of respondents stated that they would consider an alternative method of travel to reach the station and/or their destination

When asked if they would consider an alternative method of travel to the station:

- 26% of weekday respondents and 31% of weekend respondents stated that they would consider taking the bus if routes were improved;
- 23% of weekday respondents and 10% of weekend respondents would consider walking to the station if the local public realm and crossing facilities were improved
- 7% of weekday users and 3% of weekend users would consider cycling if infrastructure were improved.

The lower figures for walking and cycling for weekend reflects that people are travelling from further to access the station for leisure and shopping activities.

*Table 6: Alternative methods to driving and parking*

2019	Yes (Bus - if routes are improved)	Yes (Cycling - if infrastructure is improved)	Yes (Walking - if public realm and crossings is improved)
<i>Weekday</i>	26%	7%	23%
<i>Weekend</i>	31%	3%	10%

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Station indicating proximity of provided postcodes to Barnet Hill Station.



Figure 2: Origin Postcodes with 2km and 5km isodistances from High Barnet Station and Borough Outline

### 2.3.2 Postcode Analysis: Proximity to Bus Stops and Train/Underground Stations

To understand the distances of provided postcodes from public transport, bus stops and rail/Underground stations were mapped. Using TfL-recommended distance that people are willing to walk to access bus stops a 400m isodistance was plotted for each identified bus stop. Considering that people are willing to walk longer to access train/tube services a 1km, isodistances was plotted from each station. The provided postcodes were plotted and overlaid on the station and bus stop isodistances (see Figure 3).

The mapping indicates that majority of respondents who provided a Barnet postcode are within either 400m of a bus stop or 1km of a station suggesting that there is a public transport service option for the majority of provided postcodes.



*Figure 3: Origin Postcodes in relation to Public Transport Nodes and their Surrounding Areas*

### 2.3.3 Postcode Analysis: Cycling Potential

To understand the potential for cycling as an alternative method of travel to access High Barnet Station a 10, 20 and 30 minute isochrone was plotted and overlaid with provided postcodes. The isochrones were based on an average speed of 16kmph.

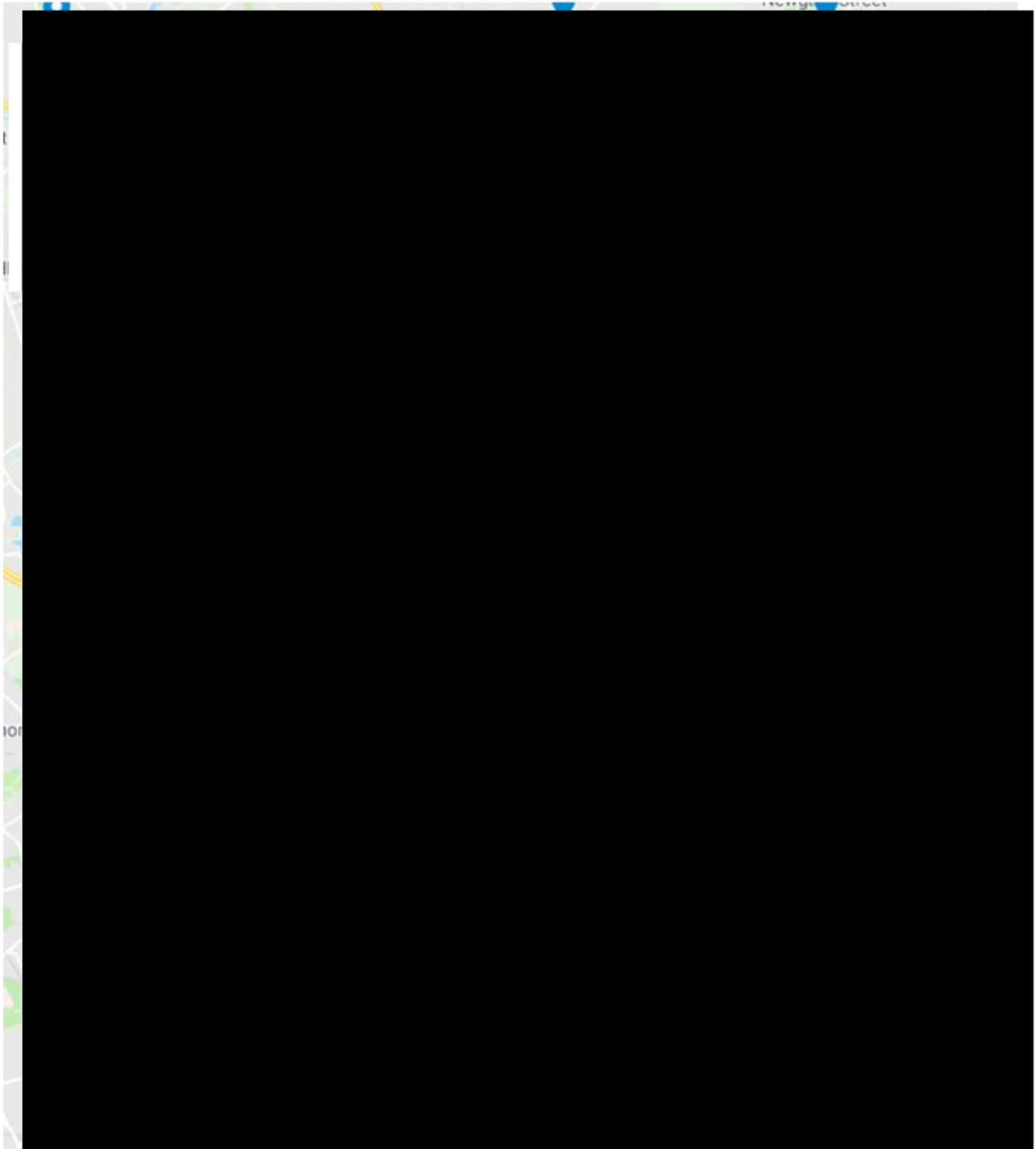


Figure 4 Cycling isochrones from High Barnet and plotted postcodes

The key findings:

- The majority of provided postcodes within the Borough are a 20 minute cycle from High Barnet Station
- 39% of journeys originate within the area of Barnet (EN4 and EN5 postcodes)

Barriers to cycling

- 2011 Census data indicates that only 1.4% cycle to work in LBB
- There is a lack of cycle infrastructure to meet demand
- Topography can be a barrier to cycling uptake.

Potential Growth

- 7% of weekday and 3% of respondents stated they would consider cycling if infrastructure was improved.
- TfL have identified a high cycling potential in Chipping Barnet

### 2.3.4 ANPR Results

The purpose of the ANPR survey was to capture an accurate data set of how the car park is used over a 7-day period. The complete survey results are in Appendix A and key results are shown in Table 4.

*Table 4: ANPR Results*

Measure	2019 survey analysis
No. spaces (asset register)	157 (5 disabled)
Occupancy rates M-F	94%
Occupancy rates Weekends	57%
% of station users who travel by car (weekday)	2.90%
% of station users who travel by car (weekend)	7.20%
Average Daily Car Park Entry/Exits M-F	622
Average Daily Car Park Entry/Exits Weekend	403
AM peak entry time (M-F)	07:30
PM peak exit time (M-F)	17:30
Average duration time M-F	6hrs 17mins
Average duration time weekend	5hrs 51mins

The ANPR results supplement the questionnaire results, providing a greater understanding of car park use and allowing cross-referencing of some specific questionnaire data:

#### **The car park is predominantly used by weekday commuters**

- The ANPR questionnaire shows that occupancy rates are higher during weekdays (94%) than on weekends (57%), due to far larger numbers of commuters utilising the car park on weekdays
- The peak weekday entry time is 07:30 and peak exit time is 17:30, roughly corresponding with standard working hours accounting for additional journey time
- Although the questionnaire had a higher response rate on the Saturday than on the weekdays, this is not reflective of higher weekend use but most likely of greater willingness to answer the questionnaire on the weekend due to journeys being less urgent
- It is likely that commuters are less willing to answer the questionnaire and thus may make up an even higher proportion of car park users than is picked up by the survey

#### **Long average duration of stay**

- The average duration of stay is 6hrs 17 mins on weekdays and 5hrs 51 mins on weekends, correlating with the questionnaire results
- Given that durations of stay for commuters would be expected to be in the 9-10hr range, the weekday average suggest the car park is also used for shorter stays – 52% of weekday respondents park for less than 8 hours according to the questionnaire

### 2.3.5 Station Use Analysis

Up to 2016, TfL provided Rolling Origin & Destination (RODS) survey information which indicated the percentage of station users who arrived by different modes including by car. RODS information indicating mode share is no longer provided by TfL.

To understand the percentage of users who access the station by car, an approximation can be estimated by accounting for the average number of vehicle arrivals/departures from the ANPR results, average number of people per vehicle (driver & passengers) from the questionnaire results and the total average station entries/exits. The derived values should only be considered as an estimate, given that it uses three data sets of varying reliability and of which the latest station entry/exit data is from 2017. Furthermore, it does not account for drivers who use the station but park elsewhere.

Based on the above calculations only 3% of station users arrive by car on weekdays and this rises to 7% on weekends suggesting that the car parks are providing a service for a small percentage of overall users.

*Table 5: Station Use Figures*

Station Data	Totals
Weekday Station Entry/Exit Total	14,131
Saturday Station Entry/Exit Total	7,556
Sunday Station Entry/Exit Total	5,015
Yearly Station Entry/Exit Total	4.26m
% station users who arrive by car (weekday)	3%
% station users who arrive by car (weekend)	7%

### **2.3.6 Cost Comparison of Driving to Access Barnet Hill Station Compared to Train Travel into London**

The costs of travel and parking from various origin destinations identified by the survey have been analysed to understand the motivations for driving from areas outside LBB which are served by rail services to central London.

The postcode origin analysis has indicated that people are travelling from St Albans 2%, Hatfield – 4%, and Potters Bar – 12% all of which have rail services to central London.

An analysis of the costs of parking at St Albans for example and taking the train to central London has been compared to driving to Barnet Hill, paying for parking and using the tube to access central London. Analysis in Appendix B. Due to the many permutations of rail season tickets and pricing for different zone travel, cost of driving, it was unable to provide a definitive conclusion on which option was most cost effective. What is unquantifiable are people's other motivations and reasons such as other stops that people may make along the way such as dropping of children to school and people's perceptions about how long a journey takes. However the relatively low cost of parking at £6.50 per day at High Barnet combined with cost of tube travel, frequency of services and connection to the Underground network can, in certain instances act as a motivating factor for people to choose to drive and park at Barnet Hill.

### 3. Survey Summary

A summary the questionnaire responses, ANPR survey and station use data is in Appendix C

The main findings are set out below:

- Most car park users (90%+) park to use the underground to access inner London and are not parking to access Chipping Barnet Town Centre
- The main journey purpose on weekdays is commuting to work and on weekends is leisure trips
- Car park users form a small proportion (2-3%) of station users
- The majority of provided postcodes are within 5km of the station (21% are within 2km of the station 34% are within 5km) suggesting that these trips could be undertaken by other modes
- Most car park (52%) users state that they drive 15 minutes to access the station car park suggesting short trips which could be undertaken by other modes
- Majority of plotted origin locations within LBB are within access to public transport
- The majority of provided Barnet postcodes are within a 20 minute cycle of the station
- Just under a third of respondents would consider alternatives to driving and parking at the station

Appendix A

Appendix B

Appendix C

