



Healthy Neighbourhood – Monitoring Review

Dollis Hill Area

London Borough of Brent

Document Reference: 7425

Date: November 2021

Document Control

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Rev	V01 – Draft	FINAL
Reason	First Draft for Client Review	Final report text agreed with client.
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Date	7 October 2021	14 December 2021
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Date	17 November 2021	15 December 2021
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Executive Summary

London Borough of Brent (LBB) introduced five Healthy Neighbourhoods (HNs) on a trial basis in August / September 2020. HNs comprise a group of residential streets where vehicle traffic that isn't local to the area is either discouraged or removed by introducing modal filters in the form of signs, barriers and planters. The aim is to tackle drivers using the street as a short cut, to make it safer and easier to walk and cycle, restore quieter streets and improve air quality.

The HNs introduced were at Preston Road, Dollis Hill, Olive Road, Stonebridge & Harlesden, and Wembley and LBB commissioned Project Centre to undertake a review each location to determine the effect each HN had on the surrounding local road network. This report will focus on the area of Olive Road.

The review consists of analysis of a series of traffic counts, bus journey time data, collision data, air quality monitoring and consultation responses. Traffic counts were conducted prior to the schemes being introduced and further counts undertaken after installation to determine any changes in traffic flows.

The traffic surveys conducted on the boundary road for this zone (Dollis Hill Lane) indicate a reduction in volume over all periods except the morning peak period. Bus journey times for two of the three routes around the HN showed improved journey times across the period considered. The third route, operating along Edgware Road, saw increased journey times.

For the internal roads surveyed some saw reduced flows while others experienced increased traffic volumes, although flows were generally quite low and therefore may be susceptible to quite small changes in traffic movements locally.

The air quality monitoring indicates improvements in NO₂ at all four test locations both over the duration of the monitoring and compared to the 2016 baseline figures. The figures have not been adjusted and therefore can't be compared with UK limits.

Collision data indicates an overall reduction in the rate of collisions on the boundary roads, mainly on Cricklewood Broadway, while a small increase was seen in the overall collision rate on roads within the HN. However, the period looked at after introduction of the HN measures is considerably shorter than would normally be considered and therefore further analysis may be necessary in the future to identify trends.

Response to the consultation from residents living within the zone was 15% and was predominantly not supportive of the HN measures (10% in favour, 90% against). Considering the responses from roads where the restrictions were implemented was more evenly balanced (45.5% in favour, 54.5% against).

Similar types of schemes have been introduced across many parts of London, particularly to provide safer conditions for increased levels of cycling and walking during recovery from the Covid19 pandemic. It is recommended that consideration is given to undertaking further engagement with residents on a scheme incorporating enforcement (ideally using

CCTV camera enforcement) so that the anticipated lower traffic volumes can be realised, and more active travel options adopted by residents.

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1. Introduction

- 1.1 London Borough of Brent commissioned Project Centre to review a variety of traffic data relating to the Dollis Hill, Olive Road, Stonebridge & Harlesden, and Wembley Healthy Neighbourhood (HN) areas. This report will focus on the area of Dollis Hill.
- 1.2 A series of traffic counts were undertaken using Automated Traffic Counts (ATCs) to indicate changes to traffic volumes within the area and on the surrounding boundary roads. Air Quality monitoring diffusion tubes were deployed to measure air pollutants and iBus data was collected to record bus journey times and identify any effects on bus services.
- 1.3 Collision data was taken from TfL's Road Danger Reduction dashboard for the period before and after implementation of the scheme.
- 1.4 The analysis of these data sets is described in the following sections.



Fig. 1.1: Dollis Hill Area Healthy Neighbourhood Modal Filters

2. Traffic Data Analysis

2.1 Data Collection

2.1.1 In order to identify any changes to traffic flows on the roads within the HN (Dollis Hill Avenue, Gladstone Park Gardens, Oxgate Gardens and Park Side) and on the boundary roads (Dollis Hill Lane), a series of Automated Traffic Counts (ATCs) were undertaken. The ATC survey locations are shown on Fig 2.1 below and were carried out over a period of seven days on three separate periods:

- 'Before' Survey – September 2020;
- 'After' Survey – February 2021; and
- 'Final' Survey – May 2021.

2.1.2 However, due to the effect of vehicles parking on ATCs, there are some periods in the surveys where the data is empty. These will have to be considered when comparing some results, however it is believed that the surveys are complete enough to be considered an accurate representation of the overall traffic volumes. Table 1 below shows the dates the surveys were carried out.

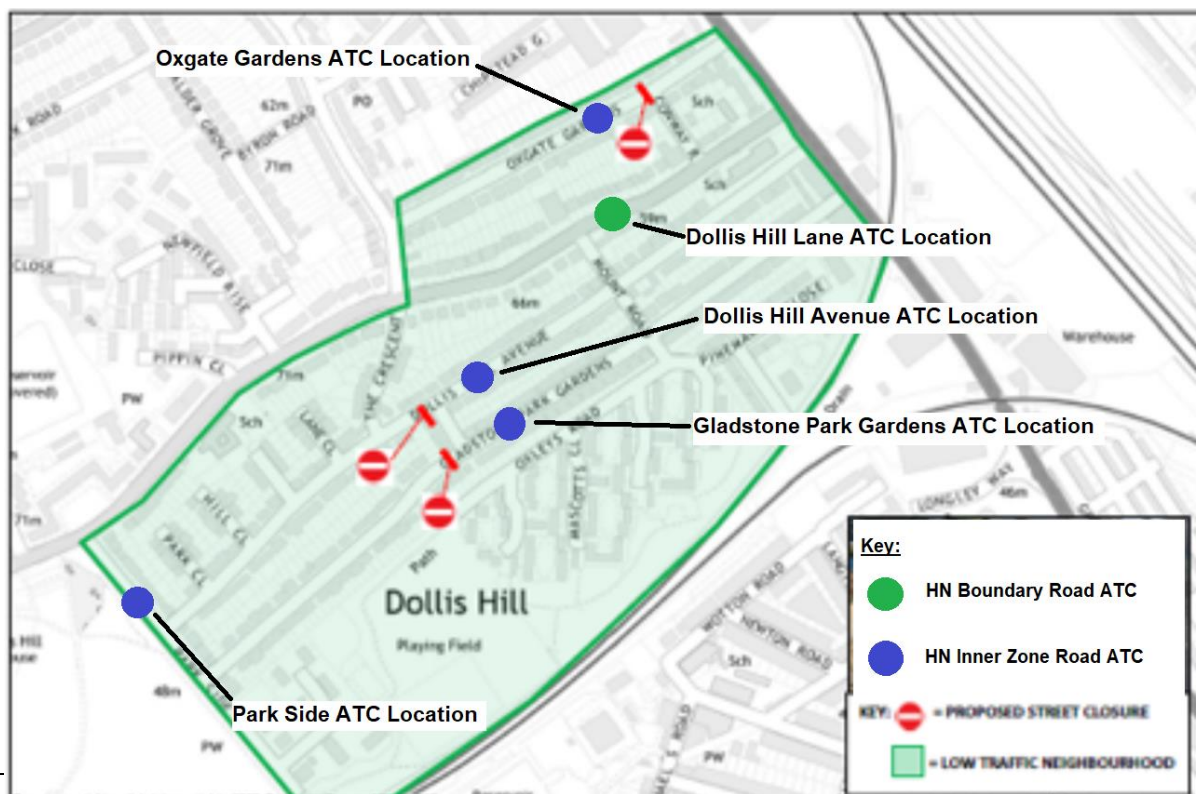


Fig 2.1: ATC Locations

ATCs	Before	After (no. 1)	After (no. 2)
HN Boundary Road ATCs			
Dollis Hill Lane	02/09/2020 – 08/09/2020	06/02/2021 – 12/02/2021	19/05/2021 – 25/05/2021
HN Internal Road ATCs			
Oxgate Gardens	02/09/2020 – 08/09/2020	06/02/2021 – 12/02/2021	19/05/2021 – 25/05/2021
Gladstone Park Gardens		13/02/2021 – 19/02/2021	
Dollis Hill Avenue			
Park Side			

Table 2.1 - Traffic Survey Locations and Dates

2.2 Considerations

2.2.1 The traffic surveys were conducted at various times during the COVID-19 pandemic and may not represent typical conditions due to restrictions about travel and public transport, etc. According to the Department for Transport (DfT), data regarding travel modes during the COVID-19 pandemic (Transport Use During the Coronavirus (COVID-19) Pandemic), indicates that traffic flows in August and September 2020 were at 93% and 95% respectively, when compared to those recorded in February 2020. Traffic flows in February 2021 were shown at 65% of those in February 2020, and May 2021 was at 95%.

2.2.2 These figures are national figures based on 275 ATCs around the UK road network, and also that over the course of a year, normal traffic can vary by +/- 20%. A further DfT publication on traffic volumes in 2020 (Road Traffic Estimates: Great Britain 2020) indicates that London experienced the lowest decrease in traffic over the year as a whole of -18.1% compared to the highest, Wales, of -23.4%.

2.2.3 The effect of seasonality should also be considered, as the baseline before surveys were conducted in August / September 2020, typically among the highest three months for traffic flows (along with July). The second surveys were then undertaken in February 2021, typically among the lowest three months (along with December and January). Therefore, the traffic flows set out in the following analysis are relatively low during the February 2021 surveys.

2.2.4 For the purposes of this monitoring analysis, the average mid-week (Monday to Friday) daily traffic volumes have been considered for the combined two-way flows for the following periods:

- AM Peak: 07:00 – 10:00
- PM Peak: 16:00 – 19:00
- 12 Hour: 07:00 – 19:00 and
- Whole Day: 00:00 – 00:00.

2.2.5 Speed data, including both mean and 85th percentile speeds are also shown in this report for the same periods as listed above.

2.3 [HN Boundary Road ATCs](#)

2.3.1 Dollis Hill Lane

2.3.1.1 The results of the traffic data analysis are shown in Table 2.2, showing the total traffic volume and speeds, compared for each survey period.

2.3.1.2 The February 2021 surveys show decreases in all periods, as well as the latest May 2021 surveys, with the exception of the AM peak which saw an increase of 32% from the baseline September 2020 surveys, resulting in close to 400 more vehicles between 07:00 – 10:00 for the average weekday.

2.3.1.3 However, the overall traffic volume for the whole day has still decreased by 8% and there are significant decreases in the PM period by -37%. The speed data has remained similar to the baseline, with some small decreases where the 85th percentile speed has gone from 30.6mph to 28.8mph (-6%).

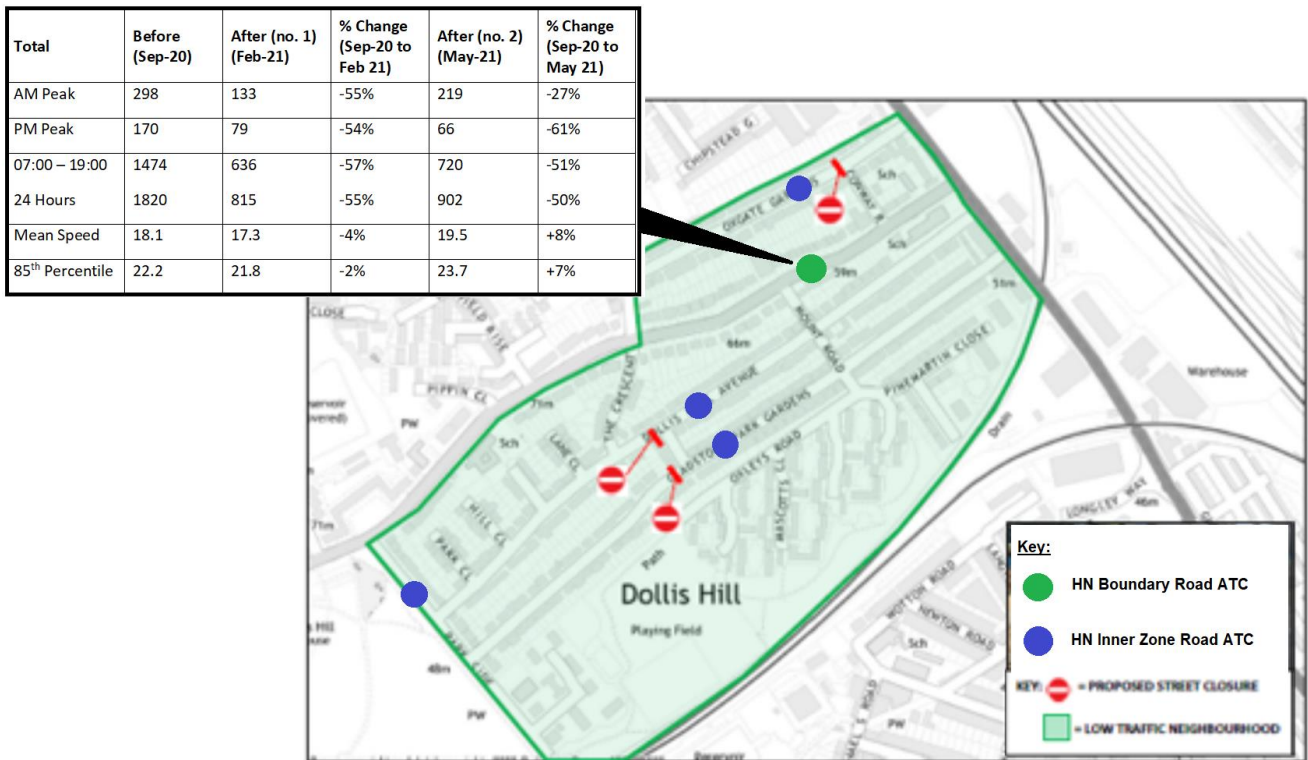


Fig 2.2: Boundary Road ATC Results

Total	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb-21)	After (no. 2) (May-21)	% Change (Sep-20 to May 21)
AM Peak	1174	1036	-12%	1554	+32%
PM Peak	1539	1180	-23%	969	-37%
07:00 – 19:00	5358	4542	-15%	4836	-10%
24 Hours	7098	5983	-16%	6538	-8%
Mean Speed	24.8	24.6	-1%	24.3	-2%
85 th Percentile	30.6	29.9	-2%	28.8	-6%

Table 2.2: Dollis Hill Lane ATC Results

2.4 HN Internal Road ATCs

2.4.1 Oxgate Gardens

2.4.1.1 The results of the traffic data analysis are shown in Table 2.3, showing the total traffic volume and speeds, compared for each survey period.

2.4.1.2 Oxgate Gardens saw significant decreases in traffic volumes for all periods during the February 2021 surveys, with a decrease of -55% for the average weekday. The results were largely unchanged for the May 2021 survey, maintaining a -50% decrease for the whole day.

2.4.1.3 Speeds are shown to have increased with the mean speed increasing by around 8% and 85th percentile by 7% although both measures are still relatively low.

Total	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 2) (May-21)	% Change (Sep-20 to May 21)
AM Peak	298	133	-55%	219	-27%
PM Peak	170	79	-54%	66	-61%
07:00 – 19:00	1474	636	-57%	720	-51%
24 Hours	1820	815	-55%	902	-50%
Mean Speed	18.1	17.3	-4%	19.5	+8%
85 th Percentile	22.2	21.8	-2%	23.7	+7%

Table 2.3: Oxgate Gardens ATC Results

2.4.2 Dollis Hill Avenue

2.4.2.1 The results of the traffic data analysis are shown in Table 2.4, showing the total traffic volume and speeds, compared for each survey period.

2.4.2.2 Dollis Hill Avenue sees decreases in the February 2021 survey for all periods compared to the September 2020. However, the May 2021 surveys indicate increases from the baseline surveys in September 2020 to the final surveys for all periods, rising 25% for the average weekday. Though the increases look significant in proportions the values are at a quite low level and the average daily traffic flow has raised by under 200

vehicles. Some of the increase may be attributable to the restrictions not being enforced and some motorists ignoring them.

- 2.4.2.3 Mean speed has decreased by -13%, however it must be noted that speed data for this site will be less accurate than other sites due to the low traffic volumes. This is reflected in the 85th percentile speeds where the speed has increased by 3%, meaning that the outlier results (very slow or very fast vehicles) are having a larger effect on the dataset. It is recommended that the speed results are mostly ignored for this site (and similarly other sites with low traffic volumes).

Total	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 2) (May-21)	% Change (Sep-20 to May 21)
AM Peak	127	33	-74%	146	+15%
PM Peak	142	65	-54%	186	+31%
07:00 – 19:00	532	225	-58%	613	+15%
24 Hours	720	299	-58%	897	+25%
Mean Speed	20.5	18.3	-11%	17.8	-13%
85th Percentile	26.0	-	-	26.7	+3%

Table 2.4: Dollis Hill Avenue ATC Results

2.4.3 Gladstone Park Gardens

- 2.4.3.1 The results of the traffic data analysis are shown in Table 6, showing the total traffic volume and speeds, compared for each survey period.
- 2.4.3.2 Gladstone Park Gardens has the most significant increase in traffic volumes, in terms of proportions, for the Dollis Hill Area. The average weekday traffic volumes have almost doubled, increasing by 91% with under 500 more vehicles.
- 2.4.3.3 The speed data, both mean and 85th percentile have decreased from the original September 2020 surveys and have

slightly increased from February 2021 but are lower overall. -5% for Mean Speed and -7% for 85th Percentile.

Total	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 2) (May-21)	% Change (Sep-20 to May 21)
AM Peak	84	32	-61%	152	+81%
PM Peak	115	51	-56%	194	+69%
07:00 – 19:00	376	183	-51%	716	+91%
24 Hours	507	247	-51%	971	+91%
Mean Speed	19.0	16.8	-12%	18.0	-5%
85 th Percentile	26.0	24.5	-6%	24.1	-7%

Table 2.5: Gladstone Park Gardens ATC Results

2.4.4 Park Side

- 2.4.4.1 The results of the traffic data analysis are shown in Table 2.6, showing the total traffic volume and speeds, compared for each survey period.
- 2.4.4.2 Park Side has decreased in traffic volume for all periods, with an overall -13% decrease from the baseline surveys in the AM peak and a -6% change in the PM peak. The speed data shows a significant decrease for Mean Speed at -34% and 85th Percentile Speed at -38%.

Total	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 1) (May-21)	% Change (Sep-20 to May 21)
AM Peak	359	222	-38%	313	-13%
PM Peak	361	280	-22%	339	-6%

07:00 – 19:00	1354	1055	-22%	1204	-11%
24 Hours	1742	1377	-21%	1606	-8%
Mean Speed	20.6	20.2	-2%	13.5	-34%
85 th Percentile	26.2	24.5	-6%	16.2	-38%

Table 2.6: Park Side ATC Results

Oxgate Gardens

	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 2) (May-21)	% Change (Sep-20 to May 21)
AM Peak	298	133	-55%	219	-27%
PM Peak	170	79	-54%	66	-61%
07:00 – 19:00	1474	636	-57%	720	-51%
24 Hours	1820	815	-55%	902	-50%
Mean Speed	18.1	17.3	-4%	19.5	+8%
85 th Percentile	22.2	21.8	-2%	23.7	+7%

Dollis Hill Avenue

Total	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 2) (May-21)	% Change (Sep-20 to May 21)
AM Peak	127	33	-74%	146	+15%
PM Peak	142	65	-54%	186	+31%
07:00 – 19:00	532	225	-58%	613	+15%
24 Hours	720	299	-58%	897	+25%
Mean Speed	20.5	18.3	-11%	17.8	-13%
85 th Percentile	26.0	-	-	26.7	+3%

Gladstone Park Gardens

Total	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 2) (May-21)	% Change (Sep-20 to May 21)
AM Peak	84	32	-61%	152	+81%
PM Peak	115	51	-56%	194	+69%
07:00 – 19:00	376	183	-51%	716	+91%
24 Hours	507	247	-51%	971	+91%
Mean Speed	19.0	16.8	-12%	18.0	-5%
85 th Percentile	26.0	24.5	-6%	24.1	-7%

Park Side

	Before (Sep-20)	After (no. 1) (Feb-21)	% Change (Sep-20 to Feb 21)	After (no. 1) (May-21)	% Change (Sep-20 to May 21)
AM Peak	359	222	-38%	313	-13%
PM Peak	361	280	-22%	339	-6%
07:00 – 19:00	1354	1055	-22%	1204	-11%
24 Hours	1742	1377	-21%	1606	-8%
Mean Speed	20.6	20.2	-2%	13.5	-34%
85 th Percentile	26.2	24.5	-6%	16.2	-38%

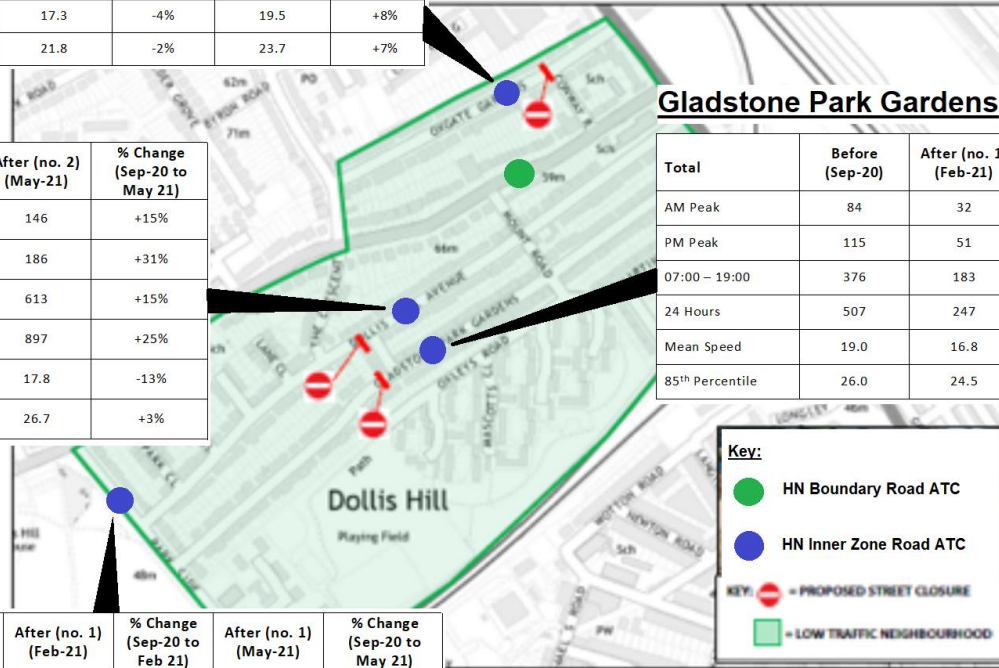


Fig 2.: Internal Road ATC Results

3. iBus Data Analysis

3.1 In order to determine whether any changes to traffic movements have been experienced on roads outside the zone following introduction of the Dollis Hill HN measures, bus journey times have been examined using iBus data from TfL. There are three routes which services operate on along roads around the HN as shown in Figs 3.1 and 3.2 (232 service), Fig 3.3 and 3.4 (245 and 332 services) and Fig 3.5 and 3.6 (32 and 266 services).

3.2 iBus data is collected via GPS technology to track bus movements and is reliant on a GPS fix between the bus stop and the London bus. The data is collected from one bus stop to another including dwell times, for each bus journey and used to indicate average bus journey runtimes.

3.3 The journey times represent the actual journey times taken between the following stops:

Route 232

East bound (Fig 3.1): Brook Road, Oxgate Gardens and Humber Road

West bound (Fig 3.2): Humber Road, Newfield Rise and Parkside

Route 245 & 332

South bound (Fig 3.3): Humber Road, The Crescent, Conway Road and Gladstone Park Gardens

North Bound (Fig 3.4): Cricklewood Bus Garage, Conway Road, Oxgate Gardens and Humber Road

Route 32 & 266

South Bound (Fig 3.5): Humber Road and Gladstone Park Gardens

North Bound (Fig 3.6): Cricklewood Bus Garage and Dollis Hill Lane

3.4 The iBus data represents the periods for September 2019 and 2020, February 2020 and 2021 and May 2020 and 2021. The

results for each route are set out in Table 3.1 (Route 232), Table 3.2 (Routes 245 and 332) and Table 3.3 (Routes 32 and 266).

Route 232

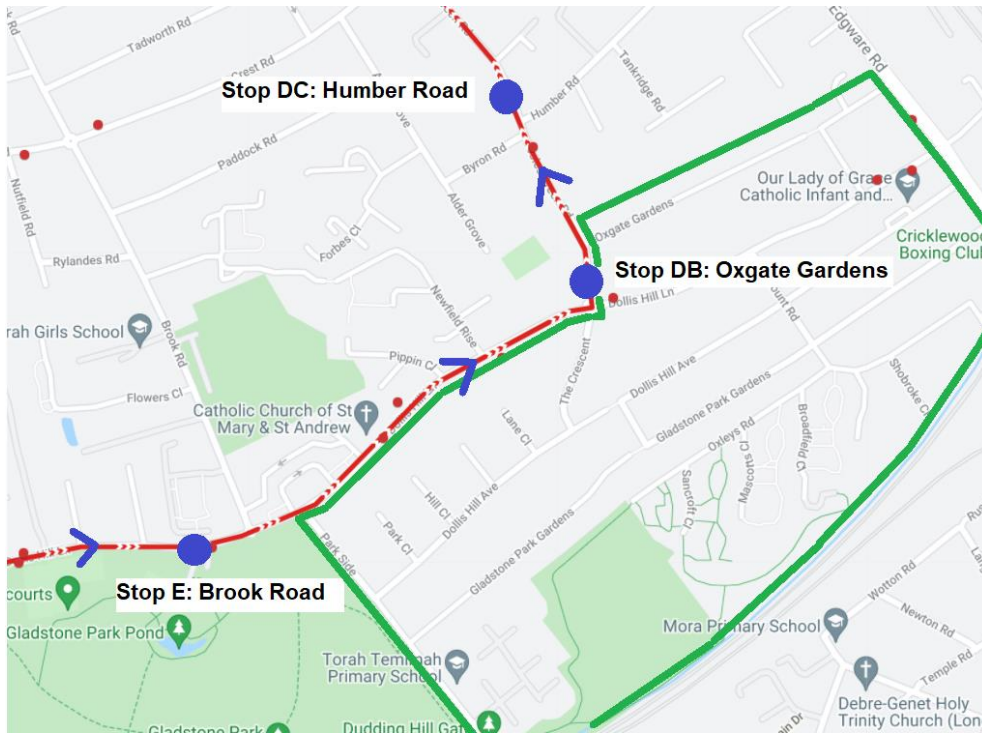


Fig. 3.1: Route 232 east bound

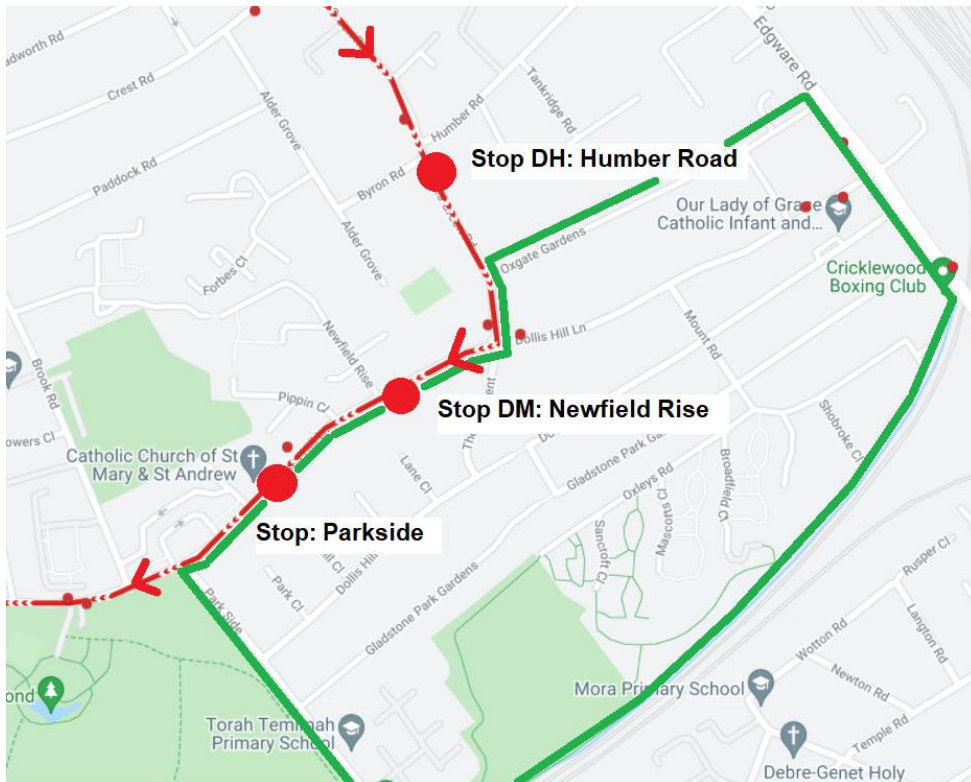


Fig 3.2: Route 232 west bound

Route 245 & 332

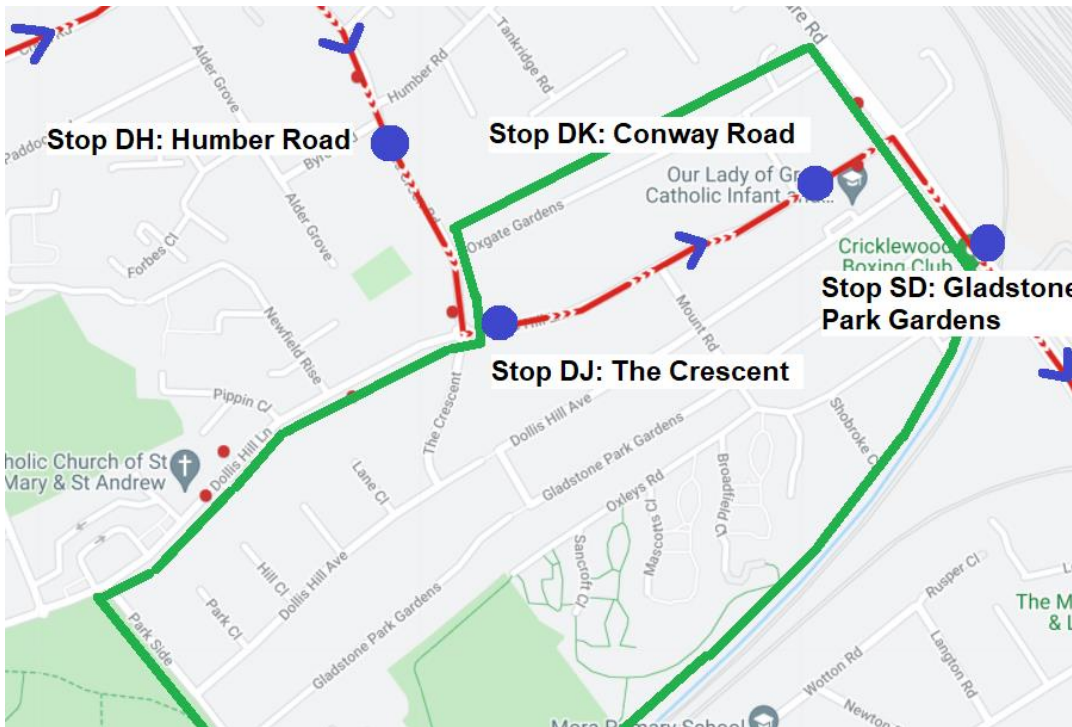


Fig. 3.3: Routes 245 & 332 east bound

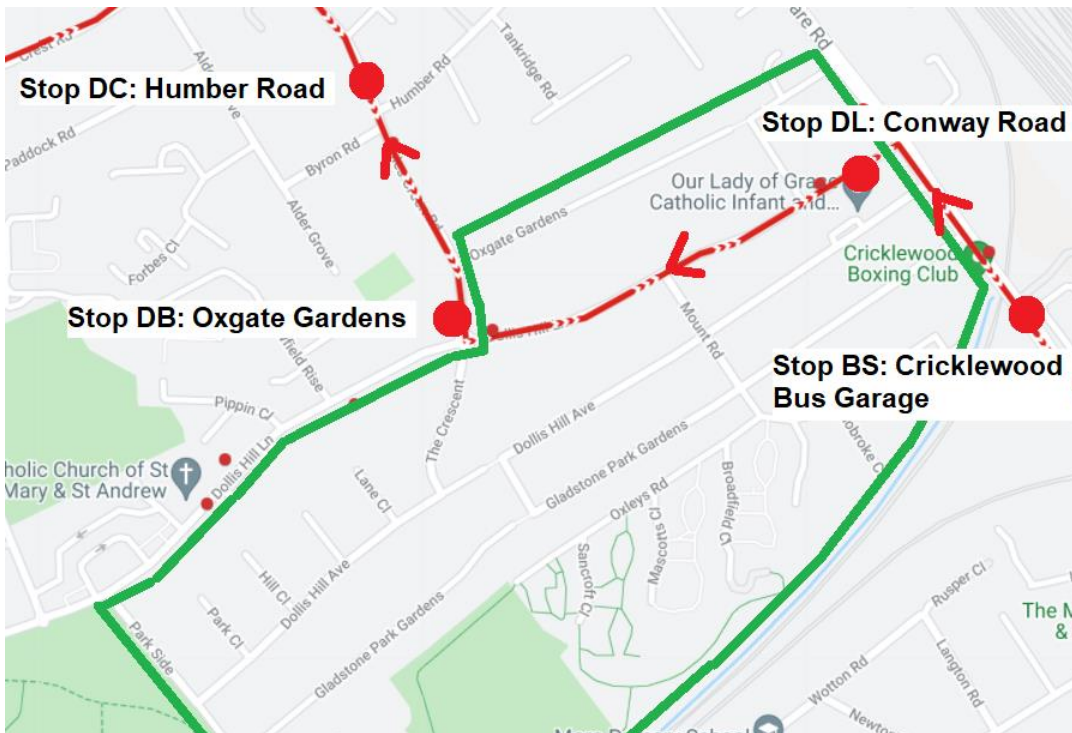


Fig 3.4: Routes 245 & 332 west bound

Route 32 & 266

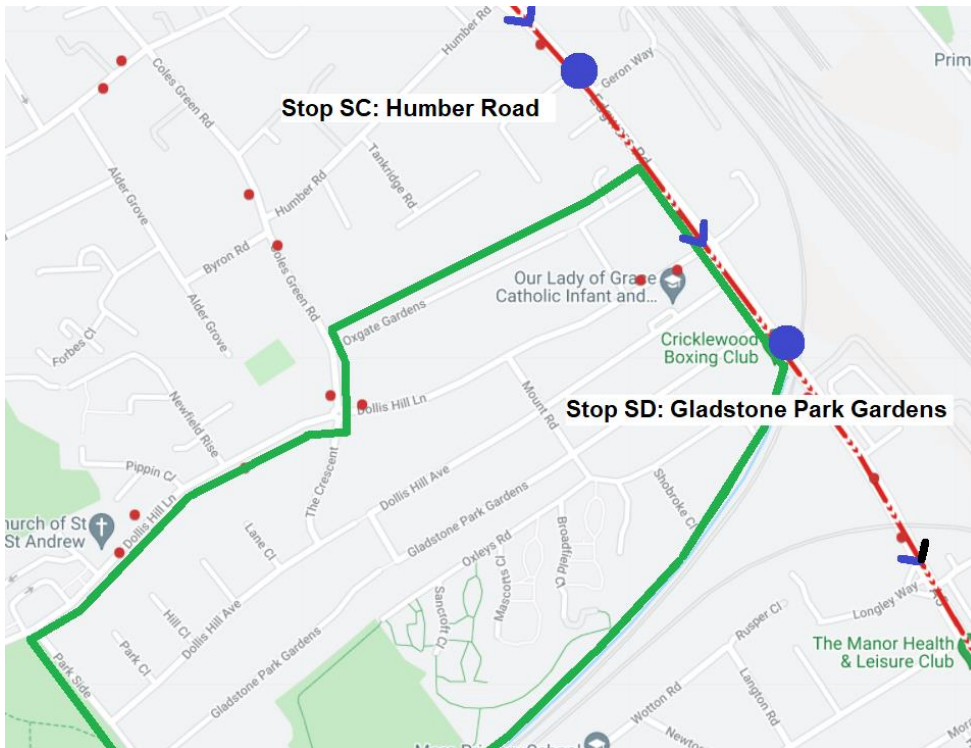


Fig. 3.5: Routes 32 & 266 south bound

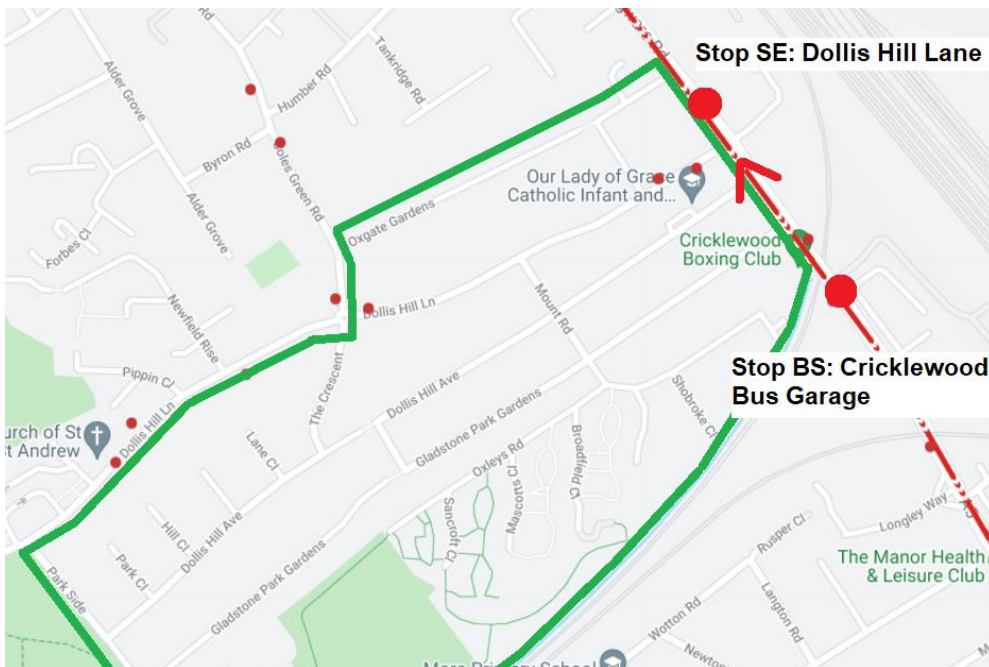


Fig 3.6: Routes 32 & 266 north bound

3.5 Journey times have been taken for periods corresponding to when the sets of traffic data were collected i.e., September 2020, February 2021 and May 2021. To give baseline periods for before the measures were implemented and pre-Covid effects on traffic flows, journey time data has also been shown for September 2019, February 2020 and May 2020. Journey times have been considered comparing similar months (to account for seasonal differences in traffic flows) for the mid-week morning peak period between 7 and 10am. The results are set out in Table 3.1, 3.2 and 3.3 (journey times are represented as decimals minutes - i.e., a journey time of 5.8 minutes equates to 5 minutes and 48 seconds).

3.6 Route 232

Route	Direction	Journey Times						%age Change Sep 2019 to May 2021
		Sep-19	Feb-20	May-20	Sep-20	Feb-21	May-21	
232	East & North bound	3.06	3.30	2.70	3.03	2.70	2.98	-2.6%
	West & South bound	1.88	2.00	1.60	1.90	1.83	1.87	-0.5%

Table 3.1: Route 232 Total Average Journey Times

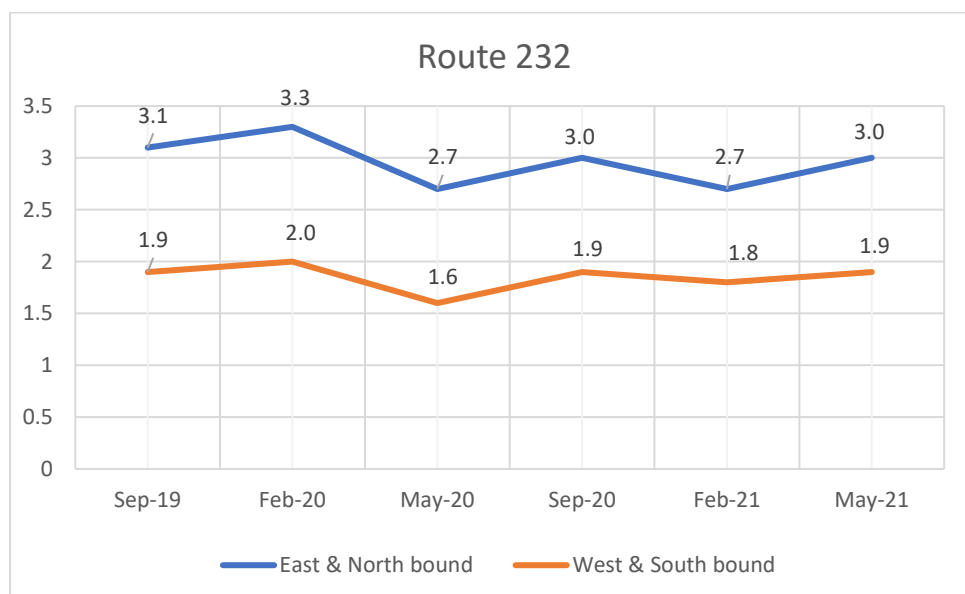


Fig 3.7: Route 232 Total Average Journey Times

3.6.1 Table 3.1 and Fig 3.7 shows the total average journey times for both direction of travel for the 232 service.

3.6.2 For the east & north route (i.e., Brook Road to Humber Road) show fairly consistent journey times between September 2019 and May 2021. Comparing the latest journey times in May 2021 to those in September 2019 show a decrease in journey times of -2.6% equating to approx. 6 seconds.

3.7.4 For the west & south bound route (i.e., Humber Road to Parkside) show fairly consistent journey times between September 2019 and May 2021. Comparing the latest journey times in May 2021 to those in September 2019 shows a negligible decrease in journey times of -0.5% equating to approx. 0.5 seconds.

3.7 Route 245 & 332

Route	Direction	Journey Times						%age Change Sep 2019 to May 2021
		Sep-19	Feb-20	May-20	Sep-20	Feb-21	May-21	
245 / 332	East & South bound	4.90	4.40	2.80	5.09	3.87	4.69	-4.3%
	West & North bound	3.50	3.60	2.90	3.58	N/A	3.07	-12.3%

Table 3.2: Route 245 / 332 Total Average Journey Times

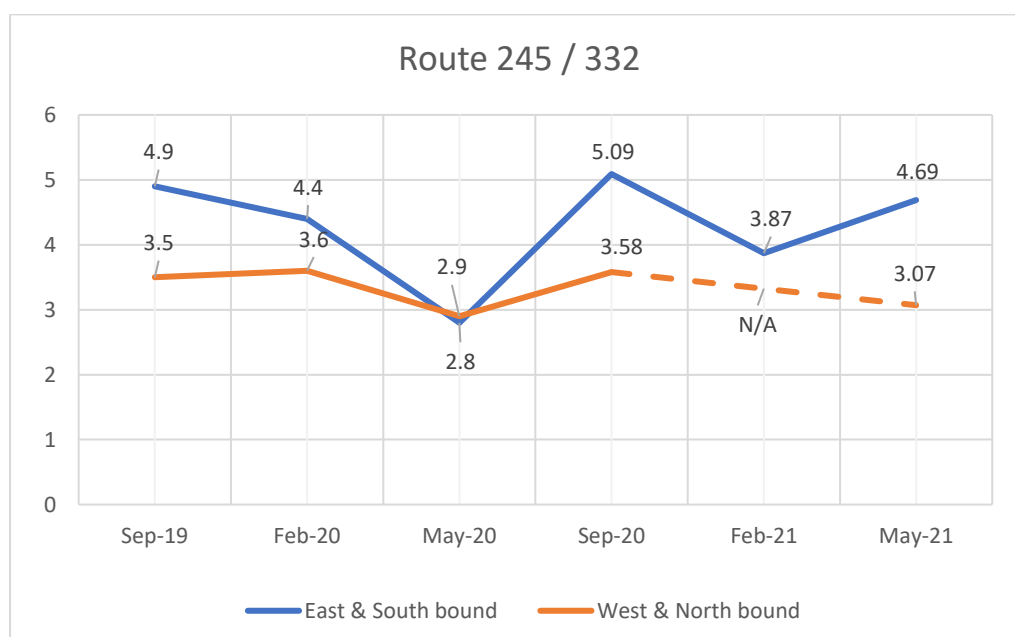


Fig 3.8: Routes 245 & 332 Total Average Journey Times

- 3.7.1 Table 3.2 and Fig 3.8 show the total average journey times for both direction of travel for the 245 / 332 services. It should be noted that the iBus data did not contain figures for February 2021 in the west / south bound directions. This is shown as N/A in Table 3.2 and indicated by a dashed line in Fig. 3.8.
- 3.7.2 For the east & south route (i.e., Humber Road to Gladstone Park Gardens) show a number of fluctuations between September 2019 and May 2021, particularly in May 2020 where the slowest journey times were seen. This is before traffic surveys were undertaken for the monitoring of the Dollis Hill HN and therefore the cause for this is unknown.
- 3.7.3 Comparing the latest journey times in May 2021 to those in September 2019 shows a decrease in journey times of -4.3% for the east / south bound route equating to approx. 13 seconds.
- 3.7.4 For the west & north bound route (i.e., Cricklewood bus garage to Humber Road) show fairly consistent journey times between September 2019 and May 2021. Comparing the latest journey times in May 2021 to those in September 2019 shows a decrease in journey times of -12.3% for the west / north bound route equating to approx. 26 seconds.

3.8 Route 32 & 266

Route	Direction	Journey Times						%age Change Sep 2019 to May 2021
		Sep-19	Feb-20	May-20	Sep-20	Feb-21	May-21	
245 / 332	North bound	1.20	1.30	1.00	1.17	1.32	1.31	+9.2%
	South bound	2.50	3.30	1.40	3.37	2.00	3.07	+22.8%

Table 3.3: Route 32 / 266 Total Average Journey Times

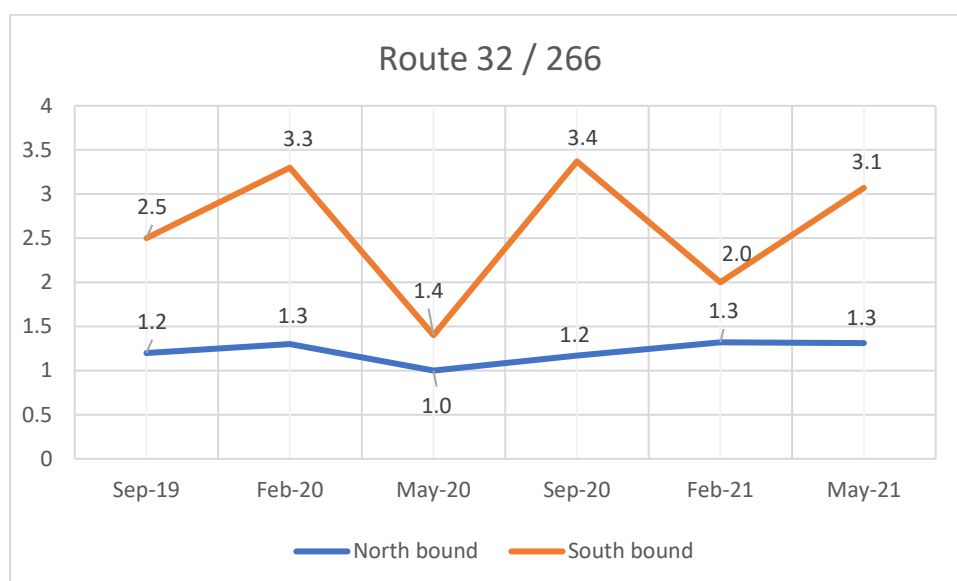


Fig 3.9: Routes 32 & 266 Total Average Journey Times

- 3.8.1 Table 3.3 and Fig 3.9 show the total average journey times for both direction of travel for the 32 / 266 services.
- 3.8.2 For the south bound route (i.e., Humber Road to Gladstone Park Gardens) show a number of fluctuations between September 2019 and May 2021, particularly in May 2020 where the fastest journey times were seen. This is before traffic surveys were undertaken for the monitoring of the Dollis Hill HN and therefore the cause for this is unknown although is shortly after the first Covid19 lockdown commenced and therefore lower traffic levels may have had an influence.
- 3.8.3 Comparing the latest journey times in May 2021 to those in September 2019 for the south bound route shows an increase in journey times of +22.8% for equating to approx. 34 seconds.
- 3.8.4 For the north bound route (i.e., Cricklewood bus garage to Dollis Hill Lane) show fairly consistent journey times between September 2019 and May 2021. Comparing the latest journey times in May 2021 to those in September 2019 shows a small increase in journey times of +9.2% equating to approx. 11 seconds.

4. COLLISION DATA ANALYSIS

- 4.1 Collision data has been gathered from TfL's online Road Danger Reduction Dashboard for the latest available three-year period on that site (01/01/2017 to 31/03/2021) for the HN boundary and internal roads for before and after implementation.
- 4.2 In the 'before' implementation period, as shown on Table 4.1 below, a total of 23 collisions were recorded resulting in 27 personal injuries. On the boundary roads 17 collisions were recorded resulting in 21 personal injuries being sustained. The HN internal roads show 6 collisions resulting in 6 personal injuries being sustained.
- 4.3 The majority of the collisions, 13 (57%), occurred on Edgware Road, all recorded as slight. These resulted in 15 personal injuries being sustained.
- 4.4 Table 4.1 details the collisions recorded on each road and the monthly collision rates which shows the total number of collisions divided by the 'before' implementation period which covers a period of 44 months. For example, records show Dollis Hill Lane experienced 4 collisions in the 44-month period therefore the monthly collision rate is 0.091 (4/44).

Before Implementation	Serious	Slight	Total	Personal Injuries	Collision Rate (collisions / month)
HN Boundary Roads (ATCs)					
Dollis Hill Lane	0	4	4	6	0.091
Edgware Road	0	13	13	15	0.295
Coles Green Road	0	0	0	0	0
TOTAL	0	17	17	21	0.386
HN Internal Roads					
Gladstone Park Gardens	0	0	0	0	0
Dollis Hill Avenue	0	2	2	2	0.045
Oxleys Road	0	0	0	0	0

Mount Road	0	2	2	2	0.045
Pinemartin Close	0	0	0	0	0
The Crescent	0	0	0	0	0
Sancroft Close	0	0	0	0	0
Mascotts Close	0	1	1	1	0.023
Broadfield Close	0	0	0	0	0
Coppermead Close	0	0	0	0	0
Shobroke Close	0	0	0	0	0
Park Close	0	0	0	0	0
Hill Close	0	0	0	0	0
St Andrew's Close	0	0	0	0	0
Lane Close	0	0	0	0	0
Oxgate Gardens	1	0	1	1	0.023
Conway Road	0	0	0	0	0
Park Side	0	0	0	0	0
TOTAL	1	5	6	6	0.136

Table 4.1: Collision & Casualty Data – Before HN Implementation

- 4.5 In the 'after' implementation period, as shown on Table 4.2 below, a total of 3 collisions were recorded resulting in 3 personal injuries. On the HN boundary roads 2 collisions were recorded resulting in 2 personal injuries being sustained. The HN internal roads show 1 collision resulting in 1 personal injury being sustained. All the collisions in the 'after' period were slight injuries.
- 4.6 Table 4.2 details the collisions recorded on each road and the monthly collision rates, the 'after' period comprising 7 months.
- 4.7 The total 'after' collision rates for all the boundary roads is 0.286 collisions / month compared to 0.386 in the 'before' period, which equates to a reduction of approximately 1.2 collisions annually.

- 4.8 For internal roads the total monthly collision rates in the 'after' period is 0.142 compared to 0.136 in the 'before' period. This equates to an increase of approximately 0.07 collisions annually.
- 4.9 TfL have indicated that they have provisional data up to the end of July 2012 although this is not currently available on the online dashboard.

After Implementation	Serious	Slight	Total	Personal Injuries	Collision Rate (collisions / month)
HN Boundary Roads (ATCs)					
Dollis Hill Lane	0	1	1	1	0.143
Edgware Road	0	1	1	1	0.143
Coles Green Road	0	0	0	0	0
TOTAL	0	2	2	2	0.286
HN Internal Roads					
Gladstone Park Gardens	0	0	0	0	0
Dollis Hill Avenue	0	1	1	1	0.143
Oxleys Road	0	0	0	0	0
Mount Road	0	0	0	0	0
Pinemartin Close	0	0	0	0	0
The Crescent	0	0	0	0	0
Sancroft Close	0	0	0	0	0
Mascotts Close	0	0	0	0	0
Broadfield Close	0	0	0	0	0
Coppermead Close	0	0	0	0	0
Shobroke Close	0	0	0	0	0
Park Close	0	0	0	0	0
Hill Close	0	0	0	0	0
St Andrew's Close	0	0	0	0	0
Lane Close	0	0	0	0	0

Oxgate Gardens	0	0	0	0	0
Conway Road	0	0	0	0	0
Park Side	0	0	0	0	0
TOTAL	0	1	1	1	0.143

Table 4.2: Collision & Casualty Data – After HN Implementation

5. Air Quality Monitoring

- 5.1 As part of the monitoring of the Dollis Hill HN air quality tests were undertaken at four locations using diffusion tubes to measure nitrogen dioxide (NO₂). These sites are on Dollis Hill Lane (at the junction with Edgware Road), Gladstone Park Gardens, Dollis Hill Lane (at Our Lady of Grace RC Junior School) and Dollis Hill Avenue.
- 5.2 The Department for Environment Food and Rural Affairs (DEFRA) state that diffusion tubes are a useful low-cost method for indicative monitoring of ambient NO₂ concentrations, but they are affected by several sources of interference, such as weather changes and fluctuations in background pollution, which can cause substantial under or overestimation (often referred to as "bias").
- 5.3 Any such bias is a problem in any situation where diffusion tube results are to be compared with air quality objectives. As a result, local authorities using NO₂ diffusion tubes are required to quantify the bias of their diffusion tube measurements and apply an appropriate bias adjustment factor to the annual mean as necessary.
- 5.4 Once the results have been subject to this process that they can then be compared to UK national air quality objectives of the annual mean concentration of NO₂ not exceeding 40 µg m⁻³, and the 1-hour mean to not exceeding 200 µg m⁻³.
- 5.5 The data supplied for the review of the HN monitoring, which covers the period between November 2020 and July 2021, indicates that the diffusion tube results have not been adjusted at this stage. Nonetheless, while the results might not be comparable with air quality objectives, they may give an indication of local trends over the course of the monitoring period.
- 5.6 Levels of NO₂ before the HN was introduced are shown on the LB Brent's website regarding the Preston Park scheme and are included in Table 5.1. These 'before' figures are taken from the London Atmospheric Emissions Inventory 2016 which provides modelled annual mean concentrations for NO₂. 2016 is the most recent year for which this data is available.

- 5.7 The results of the air quality testing at the four sites mentioned above are shown in Table 5.1 below. To repeat the statement above, it must be stressed that these are the 'raw' unadjusted figures.
- 5.8 The results indicate that while levels have fluctuated over the nine months there appears to have been an overall reduction in the levels of NO₂ recorded at each of the locations.

Monthly Nitrogen Dioxide Diffusion Tube results RAW DATA (µg/m ³)										
Air Pollution Test Location	'before' (2016)	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Apr 21	May 21	June 21	July 21
Dollis Hill Lane (junction with Edgware Rd)	35.3	tube missing	35.01	41.73	32.98	30.36	23.36	21.92	17.63	21.51
Gladstone Park Gardens	36.86	67.23	33.40	42.80	33.00	30.57	23.37	20.10	19.62	21.45
Dollis Hill Lane (Our Lady of Grace RC Junior School)	40.12	49.10	tube missing	39.07	37.79	39.43	31.41	26.21	27.50	29.75
Dollis Hill Avenue	38.22	38.76	30.89	35.54	31.92	27.69	-	21.44	21.15	22.83

Table 5.1: NO₂ Monitoring Results (Unadjusted)

6. Consultation Summary

- 6.1 An online consultation exercise was undertaken for residents both within and outside of the zone to submit their comments about the scheme and to indicate whether they supported the restrictions or not. In total (i.e., from residents inside and outside the HN) 328 responses were received, of which 41 (12.5%) indicated support for the scheme and 287 (87.5%) did not support the scheme.
- 6.2 The consultation material was delivered to the 1,193 properties within the HN and 177 (15%) responses were received. Of these 17 (10%) supported the proposal and 160 (90%) did not. Responses from roads where modal filters were installed (Dollis Hill Avenue, Gladstone Park Gardens and Oxgate Gardens) a total of 122 responses were received. Of these 15 (12%) supported the scheme and 107 (88%) did not. Tables 6.1, 6.2 and 6.3 below shows these response rates on a 'road by road' basis.
- 6.2 Numerous comments were received (many residents made comments about several subjects) and the most common were those regarding concerns about increased congestion (83 of the 213 against the scheme, 39%), increased congestion and poorer air pollution (45, 21.1%) and those listed as 'general comment' (37, 17.4%). A further repeated comment was about the lack of consultation with residents (17, 8%).
- 6.3 Those regarding congestion were typically about displacement of traffic on to other local roads, particularly Dollis Hill Lane, resulting in longer queues and increased trip times.
- 6.4 Comments listed as 'general' were typically about parking pressures, particularly resulting from school parking and staff from Cricklewood Bus Garage parking in local roads, that the restrictions would increase exclusion and that the scheme is not needed.
- 6.5 Several respondents said that more traffic is needed to increase economic activity. One respondent suggested that those roads benefitting from the restrictions should be made private and those residents responsible for the maintenance of the road.

6.6 Following introduction of the HN and School Street measures a petition was presented to the Council requesting removal of the HN scheme in the Dollis Hill area (along with the scheme in the Olive Road area). The petition was signed by 230 signatures. The petition raised numerous concerns about the schemes and called for their removal.

Road Name	Yes	No	% Yes	% No
Aberdeen Road	0	3	0	100
Ainsworth Close	0	1	0	100
Alder Grove	0	4	0	100
All Souls Avenue	1	0	100	0
Armstrong Road	1	0	100	0
Aylesbury Street	1	0	100	0
Balnacraig Ave	0	2	0	100
Bermans Way	0	1	0	100
Birchen Grove	0	1	0	100
Bouverie Road	1	0	100	0
Brook Road	0	2	0	100
Campbell Gordon Way	0	2	0	100
Chandos Road	0	1	0	100
Chichele Road	1	0	100	0
Chiltern Gardens	1	0	100	0
Chipstead Gardens	0	4	0	100
Coles Green Road	0	3	0	100
Colwyn Road	0	4	0	100
Cooper Road	2	0	100	0
Cooper Mead Close	0	1	0	100
Crest Road	0	1	0	100
Cullingworth Road	0	1	0	100
Dawpool Road	0	1	0	100
Dewsbury Road	0	2	0	100
Dollis Hill Avenue	1	21	5	95
Dollis Hill Lane	1	28	3	97
Edgware Road	0	2	0	100
Ellesmere Road	1	4	20	80
Fleetwood Road	0	4	0	100
Flowers Close	0	2	0	100
Fordwych Road	1	0	100	0
Gay Close	0	1	0	100

Road Name	Yes	No	% Yes	% No
Longstone Avenue	0	1	0	100
Lydford Road	0	1	0	100
Mascotts Close	0	4	0	100
Maytree Close	0	1	0	100
Melrose Avenue	0	1	0	100
Midwood Close	0	2	0	100
Mora Road	1	1	50	50
Mulgrave Road	0	1	0	100
Neasden Lane Nrth	1	0	100	0
Newton Road	0	1	0	100
Normanby Road	2	1	67	33
Northview Crescent	0	1	0	100
Oman Avenue	1	1	50	50
Oxgate Gardens	6	14	30	70
Paddock Road	0	2	0	100
Park Close	1	3	25	75
Parkside	0	4	0	100
Pine Road	0	1	0	100
Pinemartin Close	0	1	0	100
Prout Grove	0	1	0	100
Randall Avenue	0	5	0	100
Review Road	0	3	0	100
Riffel Road	0	1	0	100
Rose Glen	0	1	0	100
Rosecroft Gardens	0	3	0	100
Shepherds Walk	0	1	0	100
Sherrick Green Road	0	2	0	100
Shobroke Close	0	1	0	100
Sneyd Road	0	1	0	100
Southview Avenue	0	1	0	100
St Michaels Road	0	1	0	100
St Paul Avenue	0	1	0	100

Geary Road	0	4	0	100	Stag Lane	1	0	100	0
Gladstone Park Gardens	8	72	10	90	Tanfield Avenue	0	4	0	100
Greencrest Place	0	1	0	100	Tankridge Road	0	2	0	100
Greenfield Gardens	0	1	0	100	The Crescent	0	3	0	100
Griffin Close	0	1	0	100	Tracey Avenue	0	2	0	100
Hamilton Road	1	1	50	50	Villiers Road	0	1	0	100
Harp Island	0	1	0	100	Vincent Gardens	0	5	0	100
Hawarden Hill	1	0	100	0	Warren Road	1	0	100	0
Holm Lodge Street	0	1	0	100	Westview Close	2	0	100	0
Homestead Park	0	1	0	100	Woodbridge Close	0	1	0	100
Humber Road	0	3	0	100	Woodland Close	0	1	0	100
Iverson Road	1	0	100	0	Wren Avenue	0	2	0	100
Larch Road	0	1	0	100	Young Court	1	0	100	0
Lechmere Road	0	1	0	100	No Address Given	0	16	0	100
Lennox Gardens	1	3	25	75	TOTAL	41	287	13%	87%

Table 6.1: Consultation Responses by Road – ALL RESPONSES

Road Name	Yes	No	% Yes	% No
Campbell Gordon Way	0	2	0	100
Colwyn Road	0	4	0	100
Copper Mead Close	0	1	0	100
Dollis Hill Avenue	1	21	5	95
Dollis Hill Lane	1	28	3	97
Edgware Road	0	2	0	100
Gladstone Park Gardens	8	72	10	90
Mascotts Close	0	4	0	100
Oxgate Gardens	6	14	30	70
Park Close	1	3	25	75
Parkside	0	4	0	100
Pinemartin Close	0	1	0	100
Shobroke Close	0	1	0	100
The Crescent	0	3	0	100
TOTAL	17	160	10%	90%

Table 6.2: Consultation Responses by Road – ROADS WITHIN HN

Road Name	Yes	No	% Yes	% No
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Dollis Hill Avenue	1	21	5	95
Gladstone Park Gardens	8	72	10	90
Oxgate Gardens	6	14	30	70
TOTAL	15	107	12%	88%

Table 6.3: Consultation Responses by Road – ROADS WITH MODAL FILTERS

7. EQUALITIES MONITORING

- 7.1 Respondents to the online consultation were invited to answer a series of equalities questions to indicate whether the responses were typically representative of the local community.
- 7.2 In relation to the Stonebridge & Harlesden areas the responses were broadly representative of the local community. The results are included in Appendix A.

8 SUMMARY AND CONCLUSION

- 8.1 For the boundary road (i.e., Dollis Hill Lane), the traffic surveys indicate reductions in traffic volumes and speeds during the first monitoring exercise (February 2021) across all time periods, compared to September 2020. However, consideration needs to be given to the possible effects of typical seasonal variations in February along with reduced flows due to Covid restrictions at that time. In the second monitoring period (May 2021) there was still a general reduction in traffic flows and speeds, except for the morning peak period which saw a 32% increase.
- 8.2 However, the iBus bus journey time data indicates that, other than on the 32 and 266 (which run on Edgware Road in relation to the HN), journey times have improved. The 245 and 332 show an improvement of 12.3%, equating to around 26 seconds.
- 8.3 The 32 and 266 services showed increased journey times, particularly in the northbound direction with a 22.8% increase equating to approximately 34 seconds longer.
- 8.4 Collision data on Dollis Hill Lane shows ‘collisions / month’ reduced by 0.1, comparing the period before the scheme went live (44 months) to the period after implementation (7 months) for which data is available. The

- 8.5 HN Internal roads showed that flows were reduced on Oxgate Gardens and Park Side but increased on Dollis Hill Avenue and Gladstone Park Gardens, although the traffic flows on the two latter roads are quite low, approximately 30% of the two former roads. Dollis Hill Avenue and Gladstone Park gardens may therefore be more susceptible to fairly minor changes in traffic flows.
- 8.6 Collision data on those internal roads indicates a small increase in the collisions / month figure of 0.007 over the 7-month period compared to the 6 collisions in the 'before' period (44 months). This relates to one collision recorded during that time and is therefore difficult to identify trends
- 8.7 The results of air quality testing, albeit un-adjusted, show improvements across all four test sites since introduction of the restrictions.
- 8.8 Overall, despite the apparent increase in traffic volume in the morning peak, the data considered for evaluation would suggest that there has been limited effect of the scheme on the boundary road as bus journey times have largely improved and there is no increase in collisions.
- 8.9 Despite this the vast majority of residents (90%) have indicated that they do not support the restrictions because of concerns about additional congestion, longer journeys, inconvenience, impact on air pollution and lack of consultation.
- 8.10 The lack of enforcement of the restrictions may have led to general flouting of the modal filters and therefore the objectives of providing generally lower traffic levels were not realised and consequently those who may have cycled or walked more were not encouraged to do so.
- 8.11 Similar types of schemes have been introduced across many parts of London, particularly to provide safer conditions for increased levels of cycling and walking during recovery from the Covid19 pandemic. It is recognised that a significant proportion of such schemes in London have not been supported by residents, or other roads users, but some schemes have been successful. It is recommended that consideration is given to undertaking further engagement with residents on a scheme incorporating enforcement (ideally using CCTV camera

enforcement) so that the anticipated lower traffic volumes can be realised and more active travel options adopted by residents.

APPENDIX A: EQUALITIES MONITORING RESPONSES

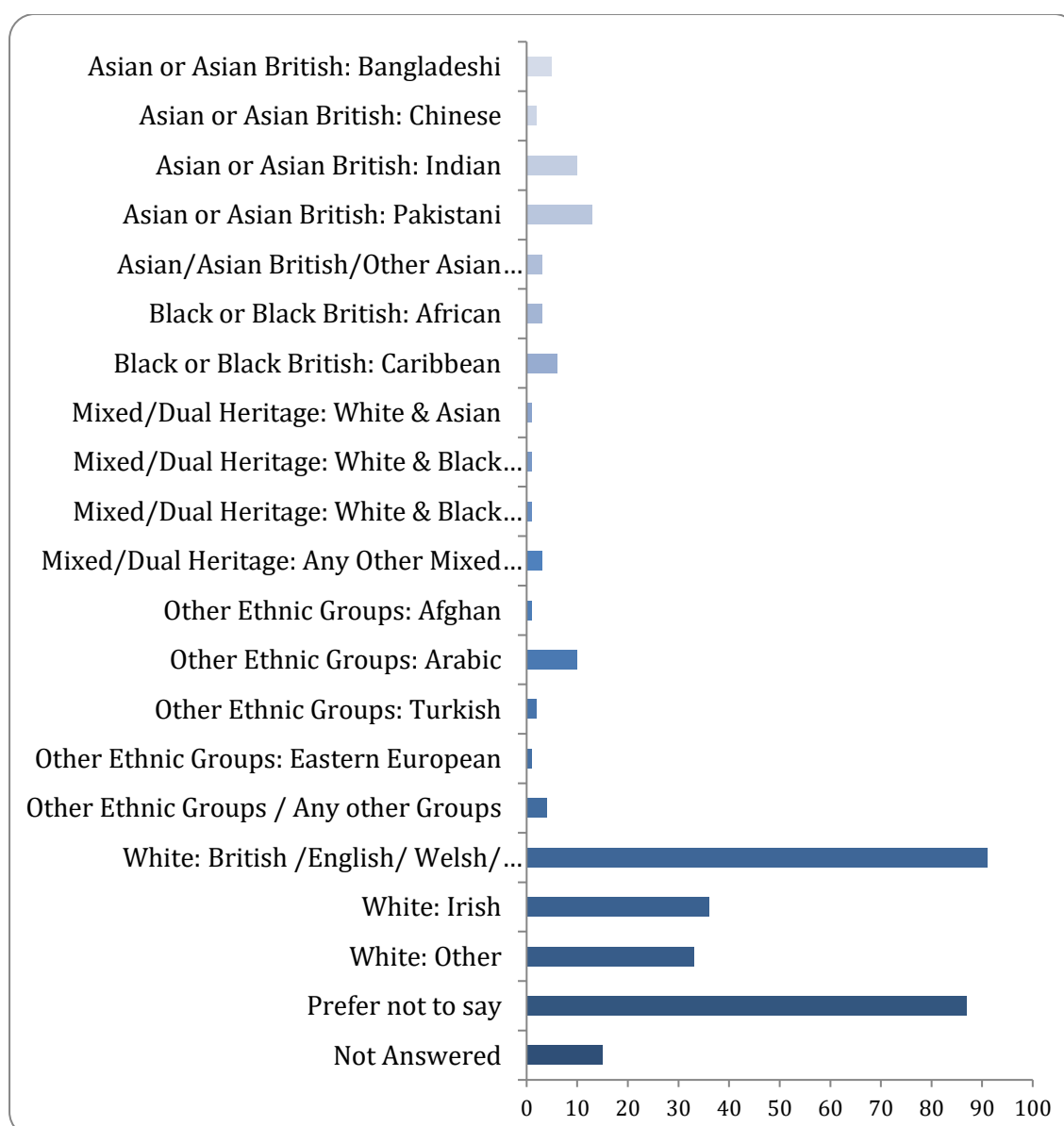
Dollis Hill Area - Healthy Neighbourhood

Responses to this survey: **328**

7: Please state your ethnicity:

Ethnicity

There were 313 responses to this part of the question.



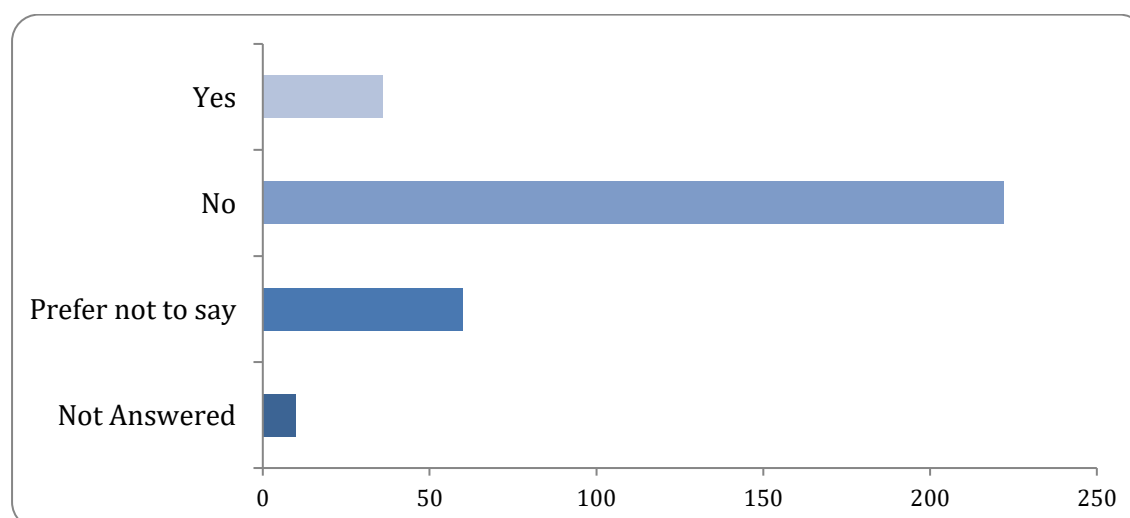
Option	Total	Percent
Asian or Asian British: Bangladeshi	5	1.52%
Asian or Asian British: Chinese	2	0.61%

Asian or Asian British: Indian	10	3.05%
Asian or Asian British: Pakistani	13	3.96%
Asian/Asian British/Other Asian Background	3	0.91%
Black or Black British: African	3	0.91%
Black or Black British: Caribbean	6	1.83%
Black or Black British: Somali	0	0.00%
Black/Black British/ Other Black Background	0	0.00%
Mixed/Dual Heritage: White & Asian	1	0.30%
Mixed/Dual Heritage: White & Black African	1	0.30%
Mixed/Dual Heritage: White & Black Caribbean	1	0.30%
Mixed/Dual Heritage: Any Other Mixed Background	3	0.91%
Other Ethnic Groups: Afghan	1	0.30%
Other Ethnic Groups: Arabic	10	3.05%
Other Ethnic Groups: Turkish	2	0.61%
Other Ethnic Groups: Eastern European	1	0.30%
Other Ethnic Groups / Any other Groups	4	1.22%
White: British /English/ Welsh/ Scottish/ Northern Irish	91	27.74%
White: Irish	36	10.98%
White: Traveller of Irish Heritage	0	0.00%
White: Gypsy/Roma	0	0.00%
White: Other	33	10.06%
Prefer not to say	87	26.52%
Not Answered	15	4.57%

8: Do you consider yourself to have a disability?

Disability

There were 318 responses to this part of the question.

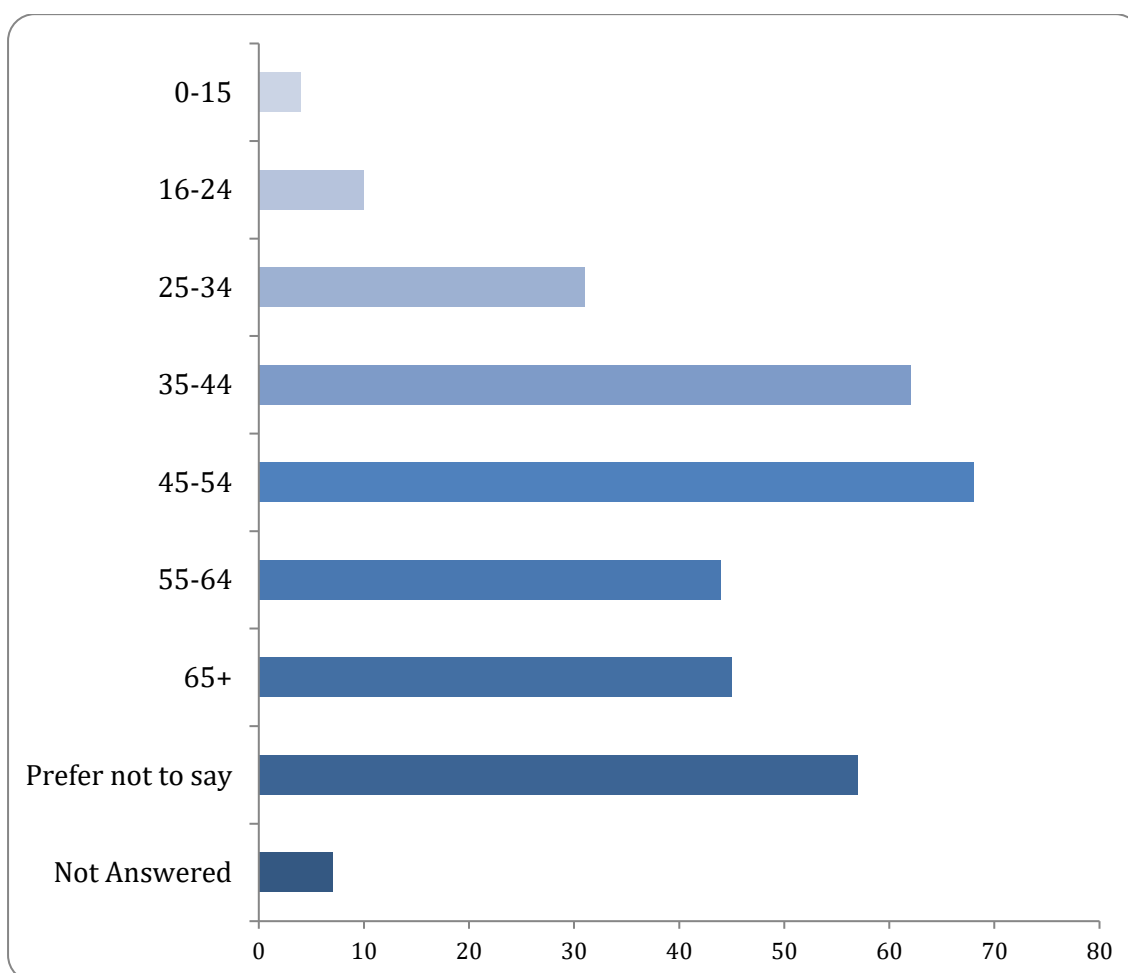


Option	Total	Percent
Yes	36	10.98%
No	222	67.68%
Prefer not to say	60	18.29%
Not Answered	10	3.05%

9: What is your age?

Age

There were 321 responses to this part of the question.



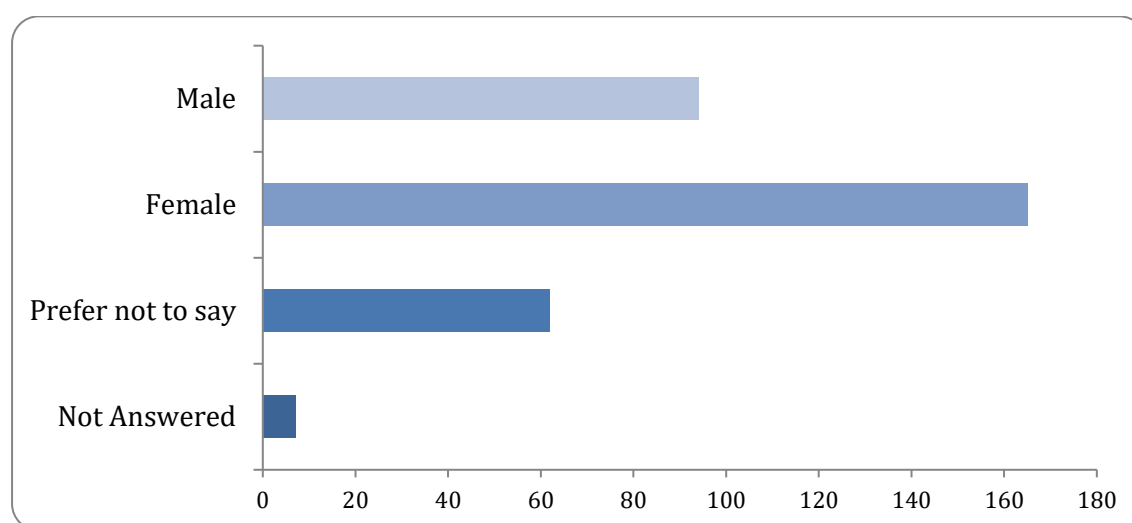
Option	Total	Percent
0-15	4	1.22%
16-24	10	3.05%
25-34	31	9.45%
35-44	62	18.90%

45-54	68	20.73%
55-64	44	13.41%
65+	45	13.72%
Prefer not to say	57	17.38%
Not Answered	7	2.13%

10: Please indicate your sex:

Gender

There were 321 responses to this part of the question.

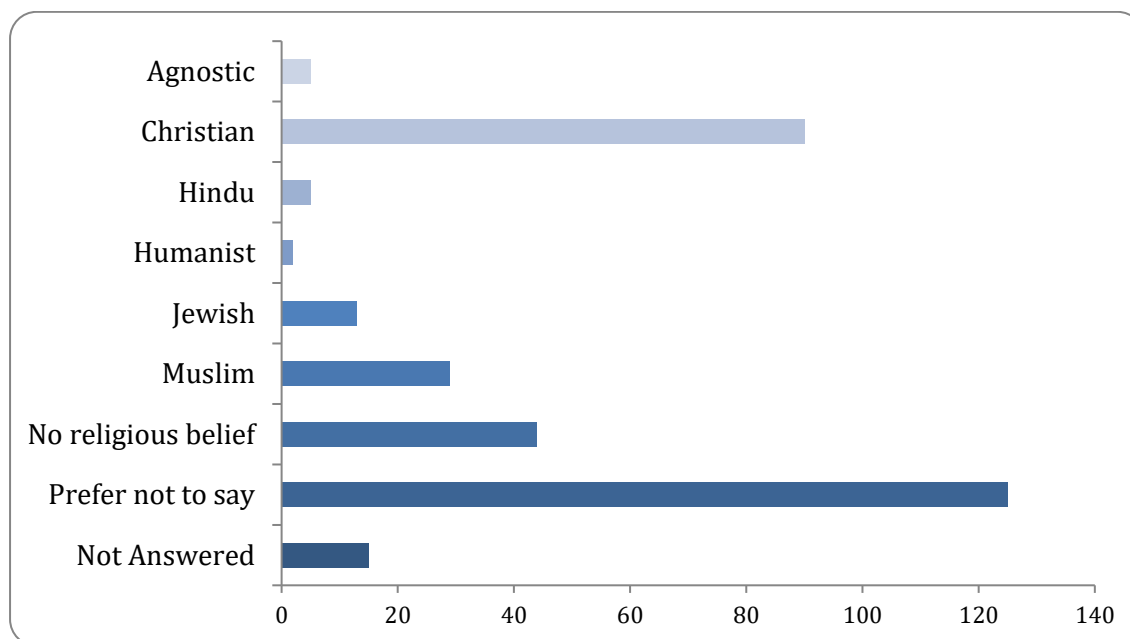


Option	Total	Percent
Male	94	28.66%
Female	165	50.30%
Prefer not to say	62	18.90%
Not Answered	7	2.13%

11: What is your religion/belief?

Religion

There were 313 responses to this part of the question.

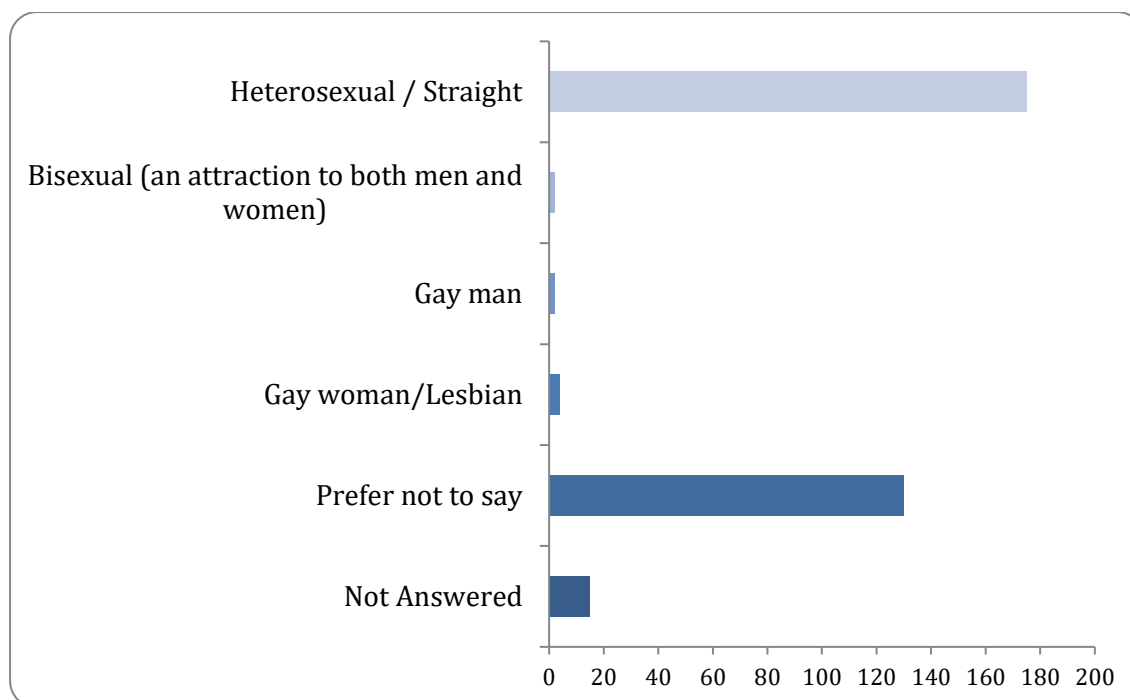


Option	Total	Percent
Agnostic	5	1.52%
Buddhist	0	0.00%
Christian	90	27.44%
Hindu	5	1.52%
Humanist	2	0.61%
Jewish	13	3.96%
Muslim	29	8.84%
Sikh	0	0.00%
No religious belief	44	13.41%
Prefer not to say	125	38.11%
Not Answered	15	4.57%

12: What is your sexual orientation?

Sexuality

There were 313 responses to this part of the question.



Option	Total	Percent
Heterosexual / Straight	175	53.35%
Bisexual (an attraction to both men and women)	2	0.61%
Gay man	2	0.61%
Gay woman/Lesbian	4	1.22%
Prefer not to say	130	39.63%
Not Answered	15	4.57%

Quality

It is the policy of Project Centre to supply Services that meet or exceed our clients' expectations of Quality and Service. To this end, the Company's Quality Management System (QMS) has been structured to encompass all aspects of the Company's activities including such areas as Sales, Design and Client Service.

By adopting our QMS on all aspects of the Company, Project Centre aims to achieve the following objectives:

- Ensure a clear understanding of customer requirements;
- Ensure projects are completed to programme and within budget;
- Improve productivity by having consistent procedures;
- Increase flexibility of staff and systems through the adoption of a common approach to staff appraisal and training;
- Continually improve the standard of service we provide internally and externally;
- Achieve continuous and appropriate improvement in all aspects of the company;

Our Quality Management Manual is supported by detailed operational documentation. These relate to codes of practice, technical specifications, work instructions, Key Performance Indicators, and other relevant documentation to form a working set of documents governing the required work practices throughout the Company.

All employees are trained to understand and discharge their individual responsibilities to ensure the effective operation of the Quality Management System.



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