



Monitoring Report: Red Lion Street and Dane Street Area Safe and Healthy Streets Scheme

Measures were installed in summer 2020 on Red Lion Street and Dane Street to create a Safe & Healthy Streets scheme - as part of the Borough's COVID-19 Emergency response.

From engagement with Ward Councillors and residents, rat-running was identified as an issue between Theobalds Road and Procter Street/ High Holborn. The level of through traffic was also identified as an increasing problem. Suggestions to manage the issue were collated on the Making Travel Safer in Camden Commonplace¹.

To address this concern, traffic restriction measures were introduced under an Experimental Traffic Order (ETO) in June 2020. The changes made as part of the scheme are as follows:

- Installing droppable fixed and removable bollards and “Motor Vehicles Prohibited” signage in two locations: (1) between the two existing parking bays on Dane Street and (2) at the junction between Red Lion Street and Princeton Street.
- Modifying Dane Street to two-way, but with no access through the bollards (except cycles, emergency services and refuse vehicles)
- Removal of 1 business parking bay and post on Red Lion Street
- Installing temporary signage stating ‘Red Lion Street closed ahead for motor vehicles’ at the junction of Red Lion Street and Theobalds Road and at the junction of High Holborn and Red Lion Street



¹ <https://safetravelcamden.commonplace.is/>





- Installing temporary signage stating “No access to High Holborn for motor vehicles” at the junction of Bedford Row and Princeton Street
- Installing “Motor Vehicles Prohibited” signage on Red Lion Street to the south of the zebra crossing.




The measures aim to reduce the amount of motor vehicles on residential streets, and to make it safer and easier for people to walk and cycle in and around the area.

To help monitor the impact of the scheme, traffic volume data ‘**Before**-scheme and ‘**After**-scheme traffic data has been compared – as well as before and after emergency response times and air quality levels.

Summary

This monitoring report sets out data and other information gathered during the trial period of the Red Lion and Dane Street Safe & Healthy Streets scheme. It has been gathered and analysed to help assess the impact of the scheme.

A review of ‘Before’ and ‘After’ scheme data for the Red Lion Street and Dane Street Safe & Healthy Streets scheme indicates the following:

-  Motor vehicle traffic was lower on weekdays and Saturdays at all six sites where pre- and post- scheme data is available; this includes Red Lion Street and boundary roads.
-  A **23% reduction** in Lime hire bike usage was recorded between July-March 2020 in the study area when compared to July-March 2019. However, between January-May 2019 and January-May 2021, Lime hire bike usage has **increased** by **377%**. In May 2021, Lime also recorded the highest number of e-bike rides ever within the Red Lion Street and Dane Street Safe & Healthy Streets scheme. Overall cycle levels recorded are lower than prior to the pandemic which is explained in the report.
- NO₂** An average **decrease** in Nitrogen Oxide (NO₂) of **29%** was recorded at the A40 monitoring station, located near the scheme boundary, when comparing the data for **July 2019-January 2020** (Before-scheme) and **July 2020-January 2021** period (After-scheme).
-  No impact on emergency response times has been identified from the introduction of the Safe & Healthy Streets scheme.

In summary, motor vehicle levels are lower on all residential roads within the Red Lion Street and Dane Street Safe & Healthy Streets scheme following the introduction of the scheme; as well as boundary or nearby roads monitored. Data gathered in regard to emergency response times also indicates no negative impacts at this stage of the trial.



Motor Vehicle Data

To establish changes in local traffic flows '**Before**-scheme' traffic counts have been compared against '**After**-scheme' traffic counts for key links within the Red Lion Street and Dane Street Safe & Healthy Streets scheme. The traffic flow data was collected for six sites '**Before**-scheme' and nine sites '**After**-scheme' as shown on the map below.

Red Lion Street and Dane Street Safe & Healthy Streets Scheme Traffic Count Sites



'**Before**-scheme' data for count sites 1, 2 and 3 was collected using Automatic Traffic Counters² (ATCs) in November 2018; for count site 4 was collected in April 2019 in the form of a junction turning count; and, for count sites 5 and 6 was collected in March 2019, using ATCs. '**After**-scheme' data for count sites 1 to 9 was collected in **December 2020** through ATCs. 16-hour traffic counts (between 06:00-22:00) were analysed for each available vehicle class and categorised to comprise pedal cycles, light vehicles (motorcycles, cars, Light Goods Vehicles) and Heavy-Duty Vehicles (Heavy Goods Vehicles and buses).

² Automatic Traffic Counter – Typically pneumatic tubing that runs across the road, which records vehicle volumes and classification (by axle base separation) when wheels pass over the tube.



The **'Before-scheme'** and **'After-scheme'** traffic counts have been adjusted to account for seasonality and for changes in travel patterns due to COVID-19. An adjustment factor for motorised vehicles has been derived from continuous 2019-2020 Inner-London vehicle count data. Data collected in 2018 has also been normalised to a 2019 baseline to allow for like-for-like comparison. The adjusted and unadjusted average weekday and weekend flows are shown in the tables below. No **'Before-scheme'** data was available for count sites 7 to 9, consequently this is not shown in the tables below. No Before- or After-scheme Saturday vehicle flow data was available for count site 9, so this is not included in the tables below. Please see Appendix A for more information on the methodology used and Appendix B for a breakdown of the traffic data.

Traffic flows are lower in the **'After-scheme'** data compared to the **'Before-scheme'** data both in the unadjusted and adjusted scenarios for all count sites where pre- and post-scheme data is available. This applies to both the weekday and Saturday analysis. The greatest reduction in traffic flows are observed within the Safe & Healthy Streets scheme on Red Lion Street between Princeton Street and Sandland Street: from 2,699 vehicles to 250 vehicles on a weekday (adjusted scenario) and from 1,723 vehicles to 232 vehicles on a Saturday (adjusted scenario).

Red Lion Street and Dane Street Safe & Healthy Streets Scheme- Weekday Average Traffic Flows (06:00-22:00)

Site ID	Road Name	Between	Unadjusted			Adjusted		
			Before	After	% Change	Before	After	% Change
1	Guildford Place	B502 and Long Yard	5,508	2,140	-61%	5,457	2,464	-55%
2	Lamb's Conduit St	Dombey and Theobalds Road	2,037	592	-71%	2,018	681	-66%
3	Red Lion St	Princeton St and Sandland St	2,725	218	-92%	2,699	250	-91%
4	Red Lion St	Sandland St and A40	2,366	1,113	-53%	2,395	1,282	-46%
5	Great Ormond St	Barbon Close and Orde Hall St	14,821	1,765	-88%	14,647	1,968	-87%
6	Grays Inn Rd	Verulam St and A40	10,367	4,181	-60%	10,245	4,661	-55%
7	Bedford Row	Princeton St and Sandland St	-	1,212	N/A	-	1,396	N/A
8	Jockey's Fields	Princeton St and Theobalds Row	-	97	N/A	-	112	N/A
9	Bedford Row	Theobalds Row and Princeton St	-	1,314	N/A	-	1,513	N/A



Red Lion Street and Dane Street Safe & Healthy Streets scheme– Saturday Average Traffic Flows (06:00-22:00)

Site ID	Road Name	Between	Unadjusted			Adjusted		
			Before	After	% Change	Before	After	% Change
1	Guildford Place	B502 and Long Yard	3,530	1,196	-66%	3,525	1,356	-62%
2	Lamb's Conduit St	Dombey and Theobalds Road	733	428	-42%	732	485	-34%
3	Red Lion St	Princeton St and Sandland St	1,725	205	-88%	1,723	232	-87%
4	Red Lion St	Sandland St and A40	1,512	711	-53%	1,524	806	-47%
5	Great Ormond St	Barbon Close and Orde Hall St	10,957	1,068	-90%	10,809	1,204	-89%
6	Grays Inn Rd	Verulam St and A40	8,247	2,987	-64%	8,136	3,367	-59%
7	Bedford Row	Princeton St and Sandland St	-	677	N/A	-	767	N/A
8	Jockey's Fields	Princeton St and Theobalds Row	-	46	N/A	-	52	N/A

Combining the data for the two count sites (3 and 4) on Red Lion Street highlights that overall traffic levels on the street were recorded as 70% lower on a weekday and 68% lower on a Saturday in the adjusted scenario (see table below). These traffic flows can be explained by the implementation of the Safe & Healthy Streets scheme which limit motor vehicles on Red Lion Street.

Total Red Lion Street Traffic Flows (Sites 3 and 4) (06:00-22:00)

Day	Unadjusted			Adjusted		
	Before	After	% Change	Before	After	% Change
Weekday	5,090	1,331	-74%	5,156	1,532	-70%
Saturday	3,237	916	-72%	3,296	1,038	-68%



Cycling Data

Cycle Count Survey Data

Data on cycle flows was only available at count site 4 where it was collected as part of the **'Before-scheme'** and **'After-scheme'** traffic count data surveys in the Red Lion and Dane Street Safe & Healthy Streets scheme area. Cycling data has not been adjusted for annual or seasonal variations due to the unavailability of continuous cycle data between 2019 and 2020 from which to set a baseline.

The monitoring results presented in the tables below indicate that cycle flows have decreased both on weekdays and Saturdays in December 2020 compared to April 2019. These results might indicate lower numbers of cyclists because the **'After-scheme'** data was collected in December, when cycle flows are often significantly lower due to seasonal variations in cycle flows. In addition the north-south corridor on which this scheme is located was, prior to the pandemic, a useful "commuter corridor" for cycling which may also indicate why (alongside seasonality) weekday flows are lower in the after counts, compared to "before" data, than the Saturday counts.

Red Lion Street and Dane Street Safe & Healthy Streets Scheme- Weekday Average Cycle Flows (06:00-22:00)

Site ID	Road Name	Between	Before	After	Difference
4	Red Lion St	Sandland St and A40	998	360	-64%

Red Lion Street and Dane Street Safe & Healthy Streets scheme- Saturday Average Cycle Flows (06:00-22:00)

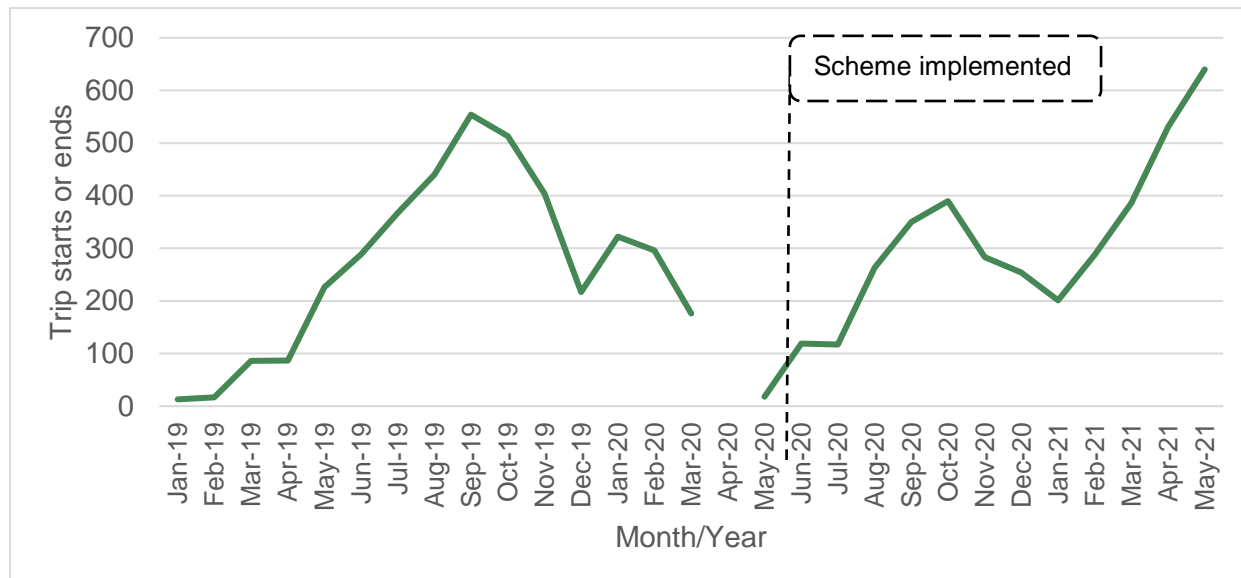
Site ID	Road Name	Between	Before	After	Difference
4	Red Lion St	Sandland St and A40	224	184	-18%

Lime Hire Bikes - Bicycle Trip Start and End Data

Monitoring of trip starts and ends in the Red Lion Street and Dane Street Safe & Healthy Streets scheme by Lime (bike rental operator) over 2019,2020 and 2021 indicate increased usage of Lime bicycles from June 2020 onwards (after the scheme was implemented) in the scheme area. The graph overleaf illustrates the absolute number of trip starts or ends in the Red Lion Street and Dane Street Safe and Healthy Streets Scheme from 2019 to the most recently available data in 2021. No data was available for April 2020 due to a national lockdown.



Trip Starts or Ends in Red Lion Street and Dane Street Safe & Healthy Streets scheme 2019-2021 (Lime cycles)



N.B. Data was not available for April 2020 from Lime

Comparison of data for equivalent periods comprising **July 2019-March 2020 (Before-scheme)** and **July 2020-March 2021 (After-scheme)** shows that Lime bike usage (trip starts or ends) has decreased from 3,289 to 2,532 trip starts or ends in the scheme area, which is equivalent to a 23% decrease.

However, following the easing of lockdown restrictions in 2020 and a move into the summer months, Lime bike usage has steadily increased, with a sharp increase in Lime bike usage in 2021. Comparing the periods between **January-May 2019** and **January-May 2021**, Lime bike usage has increased by 377% post-scheme. In May 2021, Lime bike usage was almost 3 times higher compared to May 2019. Lime also recorded the highest number of e-bike rides ever within the Red Lion Street and Dane Street Safe & Healthy Streets scheme in May 2021.

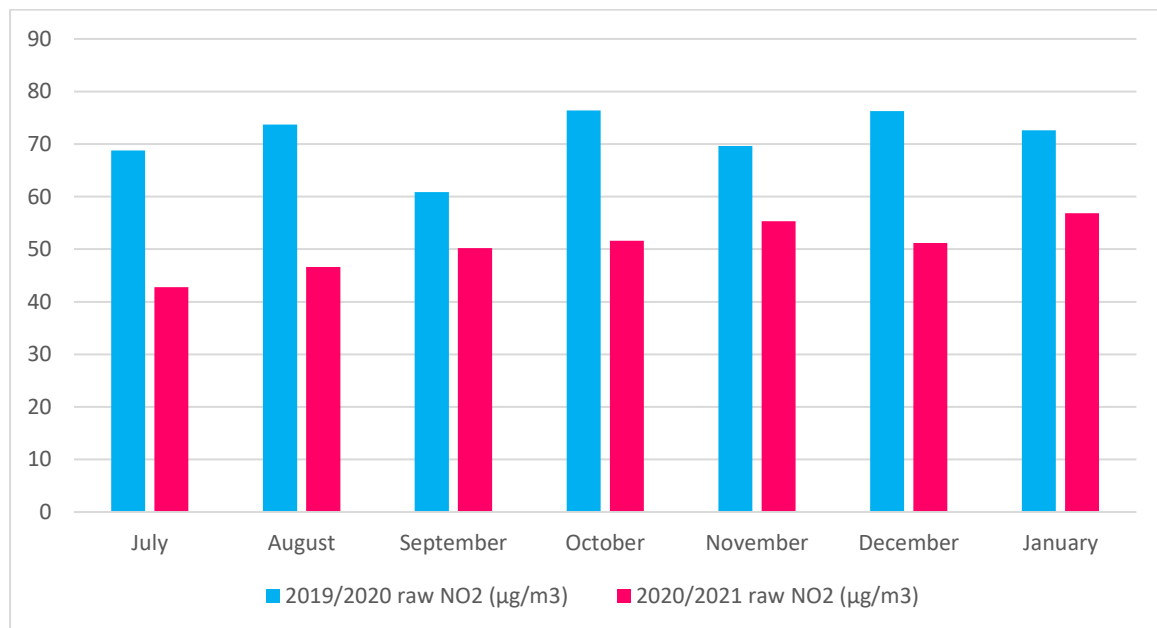
Air Quality

Air quality has been monitored on A40 near Sicilian Ave as part of the Red Lion Street and Dane Street Safe & Healthy Streets scheme. Nitrogen Oxide (NO₂) levels are monitored using a diffusion tube located just outside the scheme but near to the scheme’s boundary.



The most recent comparable data available is for **July 2020-January 2021** (after the scheme was constructed), which has been compared to an equivalent period before scheme comprising **July 2019-January 2020**. This data indicates that the site has experienced an average reduction in NO₂ of 29% when comparing **July 2020-January 2021** to **July 2019-January 2020**. This data is raw and unadjusted against the Government's bias adjustment factor.

Air Quality Monitoring (NO₂) in Red Lion Street and Dane Street Safe & Healthy Streets Scheme (A40)



The bias-adjusted and average annual mean³ NO₂ concentration for A40 for the entirety of 2020 was 64.49µg/m³, in 2019 this value was 43.26µg/m³. When compared to the legal limit for NO₂ (40µg/m³), NO₂ levels on A40 are now much closer to the compliant level, after decreasing by 33% from 2019 to 2020.

It should be noted that air pollution is caused by multiple factors and whilst traffic is an important contributor it may be difficult to single out the impact of an individual factor. See Appendix C for a breakdown of Air Quality data.

³ Annual mean figures have been 'bias adjusted' which corrects for any deviation between the NO₂ concentrations measured by diffusion tubes and the 'true' NO₂ concentration in the air as measured by a more accurate electrochemical sensor



Emergency Response Times

The London Fire Brigade (LFB) monitors the time it takes their vehicles to attend emergencies (attendance times). They use average attendance times because there are a significant number of variables that can impact attendance times – for example, responding vehicles are not always setting off from the same place.

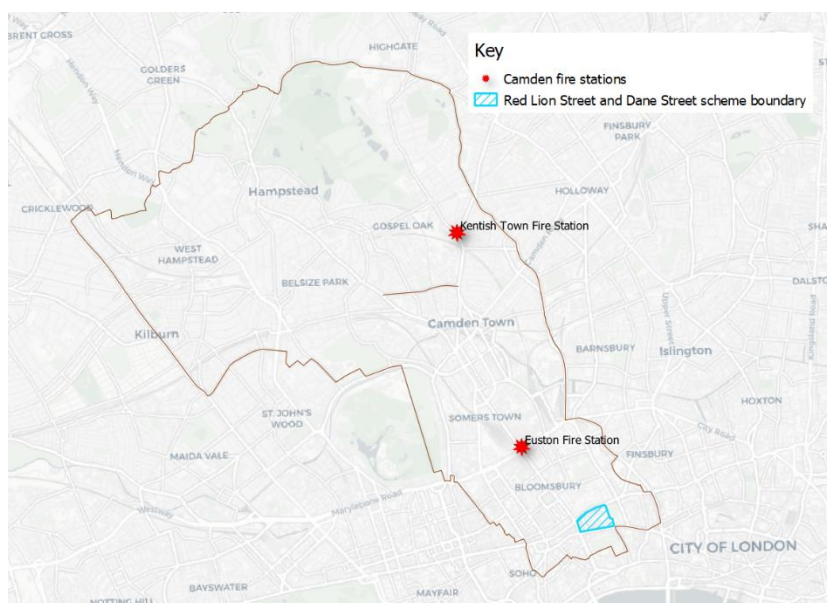
In their ‘*Incident response times*’ report published in 2020⁴, the LFB has set up their London-wide target response times (time the emergency call is answered to the arrival of a fire engine with crew at the incident scene), which for 2020 were:

- To get the first fire engine to an incident within an average of **six minutes**.
- To get a fire engine anywhere in London within **12 minutes** on 95 per cent of occasions.

In this report the LFB has also evaluated the impact of the LTNs introduced in London in response to COVID-19 on LFB’s emergency response times, and concluded that LTNs have not slowed down response times. Within their report they note:

“During the pandemic we have had more resources that are immediately available to respond and roads (during lockdown periods) have been quieter. That being the case, we haven’t yet noticed any impact on our attendance times due to the LTN schemes established in 2020”.

London Borough of Camden Fire Stations



The LFB’s Mobilisation Records⁵ have also been analysed for fire stations locations in Camden near the Red Lion Street and Dane Street Safe & Healthy Streets scheme (see map).

The graphs below compare the average response times for the closest fire station to the Safe & Healthy Streets scheme in 2019 and

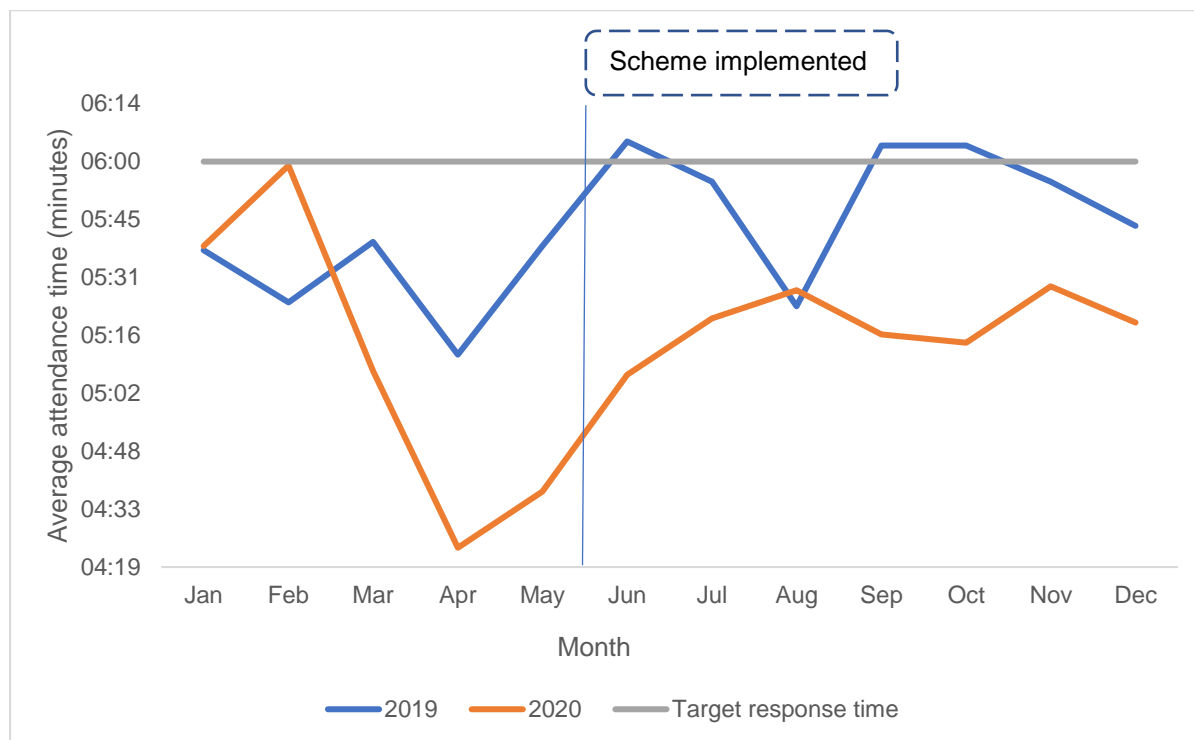
2020- Euston Fire Station. See Appendix D for a breakdown of attendance times.

⁴ <https://data.london.gov.uk/dataset/incident-response-times-fire-facts>

⁵ <https://data.london.gov.uk/dataset/london-fire-brigade-mobilisation-records>



Average attendance time from Euston Fire Station per month 2019-2020



Overall, the data indicates an 8% decrease in attendance times from Euston Fire Station between 2019 and 2020. The graph demonstrates that the LFB is consistently meeting or bettering their response time targets of 6 minutes for a first fire engine to arrive.

Camden Council continues to engage and consult with the London Ambulance Service (LAS) and Metropolitan Police Service (MPS) as part of the implementation of Safe & Healthy Streets scheme and explore the ways to determine the effects of the Safe & Healthy Streets schemes on the emergency response times.



Appendix A: Traffic Data Methodology

Traffic Count Data

To monitor and review the impacts of the scheme, traffic count data has been collected before and after the opening of the scheme as follows:

- Before-scheme:
 - Count sites 1, 2 and 3: Utilises data collected from Automatic Traffic Counters, which collected hourly traffic volumes by direction and vehicle class. The data was collected over 16 days from 7 November to 22 November 2018.
 - Count site 4: Utilises survey data from junction turning counts. This includes data on the number and type of vehicle entering and exiting the relevant junction before the scheme was constructed. The data was collected on every Tuesday, Thursday and Saturday between 23 April and 4 May 2019, which amounted to 6 days of data collection across 13 days. Traffic volumes were calculated and reported by vehicle class.
 - Count site 5: Uses data collected from Automatic Traffic Counters for 7 days from 10 March to 16 March and another 7 days from 24 March to 30 March 2019.
 - Count site 6: Uses data collected from Automatic Traffic Counters for 14 days from 3 March to 16 March 2019.
 - Count sites 7, 8 and 9: 'Before-scheme' data was unavailable
- After-scheme: Automatic Traffic Counters were used at all 9 Sites to collect data on hourly traffic volumes by direction and vehicle class after the scheme was constructed for all sites. Data was collected for 14 days between 5 December 2020 and 18 December 2020, with the average daily traffic volume calculated and reported by vehicle class for this period.

If a full day of data was unavailable from the traffic counts, then this day was excluded from the average daily calculation of traffic volumes.

Although 24-hour counts were available from Automatic Traffic Counters, the junction turning count data was only available between 06:00-22:00, so this time period has been applied to all data to allow for comparisons between 'Before-scheme' and 'After-scheme' data.

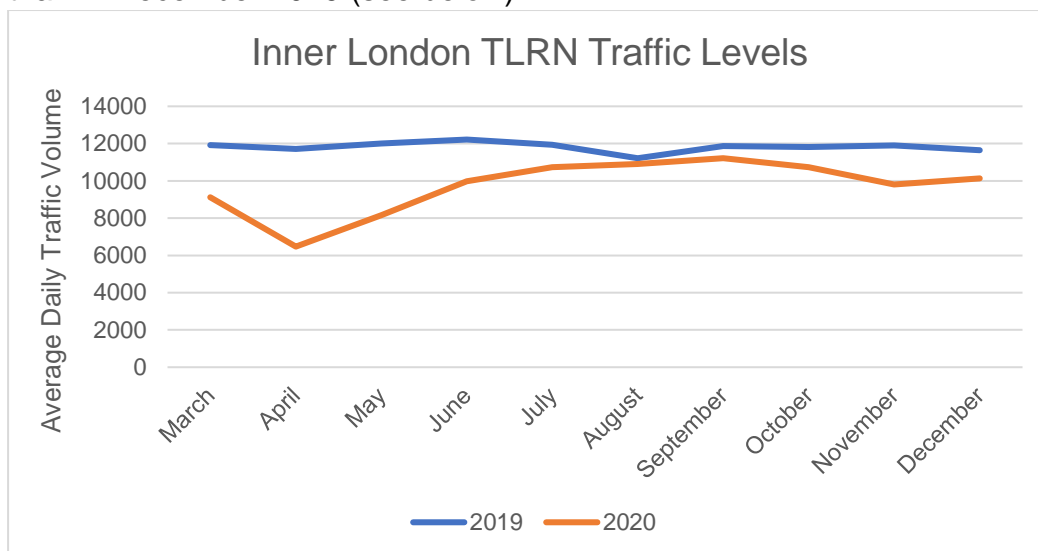
Whilst data was available from the 'After-scheme' Automatic Traffic Counters, the 'Before-scheme' junction turning counts were only available for Tuesday, Thursday and Saturday. Consequently, weekday counts for 'Before-scheme' data was an average of Tuesday and Thursday traffic counts, and 'After-scheme' data comprised a 5-day weekday average.



Traffic Count Data Adjustment

To monitor the interim effects of the scheme it has been necessary to complete 'After-scheme' traffic data collection during 2020 and at a time when travel patterns will have been affected by COVID-19 restrictions.

- 1) Data collected in 2020 has been normalised to a 2019 (pre-COVID-19) baseline using a December weekday factor (1.1281) and a December Saturday factor (1.1429). These factors are derived from continuous traffic count data provided by Transport for London for the Inner Transport for London Rd Network (TLRN) for the appropriate month. For example, traffic average daily volumes in December 2020 were 13% lower in Inner London than in December 2019 (see below).



Data collected in November 2018 has been normalised to a 2019 (pre-COVID-19) baseline using a factor (1.0002) for weekday traffic and a factor (1.0042) for Saturday traffic. The factors have been derived from continuous automatic traffic count data provided by Transport for London for nine count sites across Camden.

- 2) The data has been further adjusted to account for seasonal variations in traffic flows using factors derived from comparing average weekday volumes in December 2019 to the annual weekday average values for 2019 from the Transport for London dataset. The seasonality factor derived for a weekday in November is 0.9905 and December is 1.0206 and for a Saturday in November is 0.9944 and December is 0.9918.

The adjusted results provide an indication of the impacts of the scheme without COVID-19 in travel patterns. Both the unadjusted (raw) and adjusted traffic data are presented in the interim monitoring review for the scheme in the interests of transparency. As more data emerges, these trends will be further reviewed.

Appendix B: Traffic Data

Red Lion Street and Dane Street Safe & Healthy Streets scheme Weekday Average Raw Data (06:00-22:00)

Site ID	Road Name	Between	Direction	Before				After			
				PC*	Light**	Heavy***	Total****	PC	Light	Heavy	Total
1	Guildford Place	B502 and Long Yard	NB	N/A	1,818	62	1,880	268	1,111	98	1,209
1	Guildford Place	B502 and Long Yard	SB	N/A	3,445	184	3,628	256	868	64	931
1	Guildford Place	B502 and Long Yard	Total	N/A	5,262	246	5,508	524	1,979	161	2,140
2	Lamb's Conduit St	Dombey and Theobalds Rd	NB	N/A	1,003	13	1,016	293	306	14	319
2	Lamb's Conduit St	Dombey and Theobalds Rd	SB	N/A	999	22	1,021	269	265	8	273
2	Lamb's Conduit St	Dombey and Theobalds Rd	Total	N/A	2,002	35	2,037	562	571	21	592
3	Red Lion St	PrincetonSt and Sandland St	NB	N/A	773	21	794	235	102	4	106
3	Red Lion St	PrincetonSt and Sandland St	SB	N/A	1,895	35	1,930	216	105	7	112
3	Red Lion St	PrincetonSt and Sandland St	Total	N/A	2,668	56	2,725	450	207	11	218
4	Red Lion St	Sandland St and A40	NB	431	971	31	1,002	161	399	47	446
4	Red Lion St	Sandland St and A40	SB	567	1,308	56	1,364	199	602	65	667
4	Red Lion St	Sandland St and A40	Total	998	2,279	87	2,366	360	1,001	112	1,113
5	Great Ormond St	Barbon Close and Orde Hall St	EB	N/A	6,102	751	6,852	95	703	42	745
5	Great Ormond St	Barbon Close and Orde Hall St	WB	N/A	6,945	1,023	7,968	105	961	59	1,020
5	Great Ormond St	Barbon Close and Orde Hall St	Total	N/A	13,047	1,774	14,821	201	1,664	102	1,765
6	Grays Inn Rd	Verulam St and A40	NB	N/A	4,038	840	4,878	263	1,348	230	1,577
6	Grays Inn Rd	Verulam St and A40	SB	N/A	4,521	969	5,489	322	2,373	230	2,604
6	Grays Inn Rd	Verulam St and A40	Total	N/A	8,559	1,809	10,367	584	3,721	460	4,181
7	Bedford Row	Princeton St and Sandland St	NB	N/A	N/A	N/A	N/A	15	258	28	285
7	Bedford Row	Princeton St and Sandland St	SB	N/A	N/A	N/A	N/A	72	859	68	927
7	Bedford Row	Princeton St and Sandland St	Total	N/A	N/A	N/A	N/A	87	1,117	96	1,212
8	Jockey's Fields	Princeton St and Theobalds Row	NB	N/A	N/A	N/A	N/A	11	80	11	91
8	Jockey's Fields	Princeton St and Theobalds Row	SB	N/A	N/A	N/A	N/A	13	6	0	6
8	Jockey's Fields	Princeton St and Theobalds Row	Total	N/A	N/A	N/A	N/A	24	86	12	97
9	Bedford Row	Theobalds Row and Princeton St	NB	N/A	N/A	N/A	N/A	51	454	32	486
9	Bedford Row	Theobalds Row and Princeton St	SB	N/A	N/A	N/A	N/A	36	772	56	828
9	Bedford Row	Theobalds Row and Princeton St	Total	N/A	N/A	N/A	N/A	86	1,226	88	1,314

*PC=pedal cycle, **Light=Light vehicles including motorcycles, cars and LGVs ***Heavy=OGVs and PSVs ****Total excludes PC

Red Lion Street and Dane Street Safe & Healthy Streets scheme Weekday Average Adjusted Data (06:00-22:00)

Site ID	Road Name	Between	Direction	Before				After			
				PC*	Light**	Heavy***	Total****	PC	Light	Heavy	Total
1	Guildford Place	B502 and Long Yard	NB	N/A	1,801	62	1,862	268	1,279	113	1,392
1	Guildford Place	B502 and Long Yard	SB	N/A	3,413	182	3,594	256	999	73	1,072
1	Guildford Place	B502 and Long Yard	Total	N/A	5,213	244	5,457	524	2,278	186	2,464
2	Lamb's Conduit St	Dombey and Theobalds Rd	NB	N/A	994	13	1,007	293	352	16	367
2	Lamb's Conduit St	Dombey and Theobalds Rd	SB	N/A	990	21	1,011	269	305	9	314
2	Lamb's Conduit St	Dombey and Theobalds Rd	Total	N/A	1,984	34	2,018	562	657	24	681
3	Red Lion St	PrincetonSt and Sandland St	NB	N/A	766	21	787	235	118	4	122
3	Red Lion St	PrincetonSt and Sandland St	SB	N/A	1,878	35	1,912	216	121	8	128
3	Red Lion St	PrincetonSt and Sandland St	Total	N/A	2,643	56	2,699	450	238	12	250
4	Red Lion St	Sandland St and A40	NB	431	983	31	1,015	161	460	54	513
4	Red Lion St	Sandland St and A40	SB	567	1,325	56	1,381	199	693	75	768
4	Red Lion St	Sandland St and A40	Total	998	2,308	88	2,395	360	1,152	129	1,282
5	Great Ormond St	Barbon Close and Orde Hall St	EB	N/A	6,030	742	6,772	95	784	47	831
5	Great Ormond St	Barbon Close and Orde Hall St	WB	N/A	6,863	1,011	7,875	105	1,071	66	1,137
5	Great Ormond St	Barbon Close and Orde Hall St	Total	N/A	12,893	1,753	14,647	201	1,855	113	1,968
6	Grays Inn Rd	Verulam St and A40	NB	N/A	3,991	830	4,821	263	1,502	256	1,758
6	Grays Inn Rd	Verulam St and A40	SB	N/A	4,467	957	5,425	322	2,646	257	2,902
6	Grays Inn Rd	Verulam St and A40	Total	N/A	8,458	1,787	10,245	584	4,148	512	4,661
7	Bedford Row	Princeton St and Sandland St	NB	N/A	N/A	N/A	N/A	15	296	32	328
7	Bedford Row	Princeton St and Sandland St	SB	N/A	N/A	N/A	N/A	72	989	78	1,067
7	Bedford Row	Princeton St and Sandland St	Total	N/A	N/A	N/A	N/A	87	1,285	110	1,396
8	Jockey's Fields	Princeton St and Theobalds Row	NB	N/A	N/A	N/A	N/A	11	92	13	105
8	Jockey's Fields	Princeton St and Theobalds Row	SB	N/A	N/A	N/A	N/A	13	7	0	7
8	Jockey's Fields	Princeton St and Theobalds Row	Total	N/A	N/A	N/A	N/A	24	99	13	112
9	Bedford Row	Theobalds Row and Princeton St	NB	N/A	N/A	N/A	N/A	51	523	37	560
9	Bedford Row	Theobalds Row and Princeton St	SB	N/A	N/A	N/A	N/A	36	888	64	953
9	Bedford Row	Theobalds Row and Princeton St	Total	N/A	N/A	N/A	N/A	86	1,411	101	1,513

*PC=pedal cycle, **Light=Light vehicles including motorcycles, cars and LGVs ***Heavy=OGVs and PSVs ****Total excludes PC

Red Lion Street and Dane Street Safe & Healthy Streets scheme Saturday Average Raw Data (06:00-22:00)

Site ID	Road Name	Between	Direction	Before				After			
				PC*	Light**	Heavy***	Total****	PC	Light	Heavy	Total
1	Guildford Place	B502 and Long Yard	NB	N/A	1,111	16	1,127	179	662	40	701
1	Guildford Place	B502 and Long Yard	SB	N/A	2,285	118	2,403	148	466	30	495
1	Guildford Place	B502 and Long Yard	Total	N/A	3,396	134	3,530	327	1,127	69	1,196
2	Lamb's Conduit St	Dombey and Theobalds Rd	NB	N/A	444	11	455	175	217	8	225
2	Lamb's Conduit St	Dombey and Theobalds Rd	SB	N/A	271	7	278	170	198	6	204
2	Lamb's Conduit St	Dombey and Theobalds Rd	Total	N/A	715	18	733	344	415	14	428
3	Red Lion St	PrincetonSt and Sandland St	NB	N/A	436	8	444	120	90	6	96
3	Red Lion St	PrincetonSt and Sandland St	SB	N/A	1,273	8	1,281	141	102	8	110
3	Red Lion St	PrincetonSt and Sandland St	Total	N/A	1,709	16	1,725	261	192	14	205
4	Red Lion St	Sandland St and A40	NB	97	526	16	541	67	279	23	302
4	Red Lion St	Sandland St and A40	SB	128	951	20	971	117	388	22	410
4	Red Lion St	Sandland St and A40	Total	224	1,477	35	1,512	184	666	45	711
5	Great Ormond St	Barbon Close and Orde Hall St	EB	N/A	4,339	505	4,844	54	433	16	449
5	Great Ormond St	Barbon Close and Orde Hall St	WB	N/A	5,386	727	6,113	65	594	26	620
5	Great Ormond St	Barbon Close and Orde Hall St	Total	N/A	9,725	1,232	10,957	119	1,026	42	1,068
6	Grays Inn Rd	Verulam St and A40	NB	N/A	3,303	712	4,015	169	1,023	180	1,203
6	Grays Inn Rd	Verulam St and A40	SB	N/A	3,676	556	4,232	259	1,610	174	1,784
6	Grays Inn Rd	Verulam St and A40	Total	N/A	6,979	1,268	8,247	428	2,633	354	2,987
7	Bedford Row	Princeton St and Sandland St	NB	N/A	N/A	N/A	N/A	5	170	11	181
7	Bedford Row	Princeton St and Sandland St	SB	N/A	N/A	N/A	N/A	28	478	19	497
7	Bedford Row	Princeton St and Sandland St	Total	N/A	N/A	N/A	N/A	33	647	30	677
8	Jockey's Fields	Princeton St and Theobalds Row	NB	N/A	N/A	N/A	N/A	10	37	5	41
8	Jockey's Fields	Princeton St and Theobalds Row	SB	N/A	N/A	N/A	N/A	6	5	0	5
8	Jockey's Fields	Princeton St and Theobalds Row	Total	N/A	N/A	N/A	N/A	16	42	5	46
9	Bedford Row	Theobalds Row and Princeton St	NB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Bedford Row	Theobalds Row and Princeton St	SB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Bedford Row	Theobalds Row and Princeton St	Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*PC=pedal cycle, **Light=Light vehicles including motorcycles, cars and LGVs ***Heavy=OGVs and PSVs ****Total excludes PC

Red Lion Street and Dane Street Safe & Healthy Streets scheme Saturday Average Adjusted Data (06:00-22:00)

Site ID	Road Name	Between	Direction	Before				After			
				PC*	Light**	Heavy***	Total****	PC	Light	Heavy	Total
1	Guildford Place	B502 and Long Yard	NB	N/A	1,109	16	1,125	179	750	45	795
1	Guildford Place	B502 and Long Yard	SB	N/A	2,282	118	2,400	148	528	33	561
1	Guildford Place	B502 and Long Yard	Total	N/A	3,391	134	3,525	327	1,278	78	1,356
2	Lamb's Conduit St	Dombey and Theobalds Rd	NB	N/A	443	11	454	175	246	9	254
2	Lamb's Conduit St	Dombey and Theobalds Rd	SB	N/A	271	7	278	170	224	7	231
2	Lamb's Conduit St	Dombey and Theobalds Rd	Total	N/A	714	18	732	344	470	15	485
3	Red Lion St	PrincetonSt and Sandland St	NB	N/A	435	8	443	120	102	6	108
3	Red Lion St	PrincetonSt and Sandland St	SB	N/A	1,271	8	1,279	141	115	9	124
3	Red Lion St	PrincetonSt and Sandland St	Total	N/A	1,707	16	1,723	261	217	15	232
4	Red Lion St	Sandland St and A40	NB	97	530	16	545	67	316	26	342
4	Red Lion St	Sandland St and A40	SB	128	959	20	978	117	439	25	464
4	Red Lion St	Sandland St and A40	Total	224	1,488	35	1,524	184	755	51	806
5	Great Ormond St	Barbon Close and Orde Hall St	EB	N/A	4,280	498	4,778	54	488	18	506
5	Great Ormond St	Barbon Close and Orde Hall St	WB	N/A	5,313	717	6,030	65	669	29	698
5	Great Ormond St	Barbon Close and Orde Hall St	Total	N/A	9,593	1,215	10,809	119	1,157	47	1,204
6	Grays Inn Rd	Verulam St and A40	NB	N/A	3,258	702	3,961	169	1,153	202	1,356
6	Grays Inn Rd	Verulam St and A40	SB	N/A	3,626	548	4,175	259	1,815	196	2,011
6	Grays Inn Rd	Verulam St and A40	Total	N/A	6,885	1,251	8,136	428	2,969	399	3,367
7	Bedford Row	Princeton St and Sandland St	NB	N/A	N/A	N/A	N/A	5	192	12	205
7	Bedford Row	Princeton St and Sandland St	SB	N/A	N/A	N/A	N/A	28	541	22	563
7	Bedford Row	Princeton St and Sandland St	Total	N/A	N/A	N/A	N/A	33	733	34	767
8	Jockey's Fields	Princeton St and Theobalds Row	NB	N/A	N/A	N/A	N/A	10	41	5	46
8	Jockey's Fields	Princeton St and Theobalds Row	SB	N/A	N/A	N/A	N/A	6	6	0	6
8	Jockey's Fields	Princeton St and Theobalds Row	Total	N/A	N/A	N/A	N/A	16	47	5	52
9	Bedford Row	Theobalds Row and Princeton St	NB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Bedford Row	Theobalds Row and Princeton St	SB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Bedford Row	Theobalds Row and Princeton St	Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*PC=pedal cycle, **Light=Light vehicles including motorcycles, cars and LGVs ***Heavy=OGVs and PSVs ****Total excludes PC

Appendix C: Air Quality Data

Raw air quality data (2019/2020/2021) for Red Lion and Dane Street (A40) monitoring site

2019 raw NO ₂ (µg/m ³)		2020 raw NO ₂ (µg/m ³)		% Change
Jul-19	68.80	Jul-20	42.75	-38%
Aug-19	73.69	Aug-20	46.62	-37%
Sep-19	60.84	Sep-20	50.18	-18%
Oct-19	76.41	Oct-20	51.63	-32%
Nov-19	69.61	Nov-20	55.31	-21%
Dec-19	76.28	Dec-20	51.21	-33%
Jan-20	72.64	Jan-21	56.85	-22%

Bias-adjusted and average annual mean air quality data for Red Lion and Dane Street (A40) monitoring site

Year	Bias-adjusted average annual mean (µg/m ³)
2019	64.49
2020	43.26

Appendix D: Emergency Response Times

Euston Fire Station average response times in seconds

Month	2019	2020	% change
Jan	325	334	0%
Feb	324	342	10%
Mar	336	328	-9%
Apr	316	302	-15%
May	324	302	-18%
Jun	354	314	-16%
Jul	329	327	-10%
Aug	325	341	1%
Sep	330	320	-13%
Oct	316	342	-13%
Nov	319	323	-7%
Dec	346	329	-7%
Total	329	325	-8%