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Glossary

Below are the meanings of some words used throughout this report that you may be unfamiliar with, or which may have a specific meaning in the report context:

AM Peak – In this report, “AM peak” refers to the hours between 07h00 and 10h00.

Automatic Traffic Counters – “Automatic Traffic Counters” (ATCs) measure traffic volumes and speeds using two thin tubes that run across the street and are connected to a sensor. When wheels pass over the tubes, the pressure impact is interpreted by the sensor to identify the type of vehicle passing over, and the speed at which it passed. ATCs are considered to be approximately 98% reliable. (See Appendix 1 for more details).

Boundary roads – For the purpose of this report, the “boundary roads” of the Clerkenwell Green trial area are St. John Street to the east, Skinner Street to the north and Farringdon Lane to the west. Due to changes in nearby council transport projects, no baseline counts were taken in August 2020. Therefore, the Clerkenwell Road baseline uses turning counts from Thursday March 28th 2019, which only cover the AM and PM peak traffic volumes on this day. Clerkenwell Road is not included in the overall boundary road calculations because of the data type and collection differences from the other boundary roads. Rosebery Avenue has not been included in the overall boundary roads analysis, although counts were taken here and are presented in separate tables. Rosebery Avenue may also have been impacted by the Amwell LTN trial area, which may have impacted the results. These are explored in more detail in the results and insights sections throughout the report.

Experimental Traffic Order – An “Experimental Traffic Order” (ETO) is like a permanent Traffic Regulation Order in that it is a legal document that imposes traffic and parking restrictions. However, unlike a Traffic Regulation Order, an Experimental Traffic Order can only stay in force for a maximum of 18 months while the effects are monitored and assessed. An Experimental Traffic Order is made under Sections 9 and 10 of the Road Traffic Regulation Act 1984.

Internal Roads – These are roads which fall in between two or more boundary roads in low traffic neighbourhoods. For the purpose of this report, “internal roads” are local roads in the Clerkenwell Green trial area where the project aims to reduce the amount of traffic

through the introduction of traffic filters. These roads are generally narrower than boundary roads. We have collected traffic counts on some, but not all, of the internal roads in the Clerkenwell Green area.

Low Traffic Neighbourhood – A “low traffic neighbourhood” (LTN) is an area where a number of traffic filters are strategically placed to make it impossible or very difficult to cut through the area by motor vehicle. This stops drivers using local streets as shortcuts and makes it safer and easier to walk and cycle. In this report, the Clerkenwell Green people-friendly streets (PFS) trial refers to a low traffic neighbourhood implemented in Islington under an Experimental Traffic Order. The position of the traffic filters means that drivers (including residents, delivery workers and emergency services) are still able to reach any part of the neighbourhood.

Normalised – In this report, “normalising” means to adjust traffic count figures to take into account the impact of Covid-19 and other macro-scale factors on traffic patterns. This methodology is explained below in more detail, but in simple terms it means that the traffic count figures have been increased to project what traffic counts may have looked like if traffic levels were at 2019 levels.

Observed – In this report, “observed” means the data that was collected, which has not been adjusted to take into account the impact of Covid-19 on traffic patterns. This is the actual data that was supplied by the data collection company used.

PM Peak – In this report, “PM peak” refers to the hours between 16h00 and 19h00.

Traffic Filters - “Traffic filters” are restrictions in the street to prevent motor vehicles passing through, either by presenting a physical barrier, such as bollards or planters, or by camera enforcement. Camera enforcement is used to enable buses and emergency vehicles to access the area. People are legally able to walk, cycle and wheel though filters (and use non-motorised scooters).

Introduction – Clerkenwell Green LTN Final Report

As part of Islington Council's PFS programme and the need for an urgent transport response to COVID-19, Clerkenwell Green became the third Low Traffic Neighbourhood (LTN) trial in the borough. It was created to allow more space for people to walk and cross the road safely, cycle as part of everyday life and to use buggies or wheelchairs, thereby making the area's roads safer, cleaner and healthier for residents. Traffic filters have been installed to prevent motor vehicles from cutting through the local area. Camera enforcement is used at certain locations so that buses and emergency vehicles, as well as vehicles with exemptions, can still pass through the traffic filters.

The area had been affected by lockdown more than usual due to its proximity to Central London and a reduced number of people visiting and working in the area and in Smithfield Market. As a Central London location, Clerkenwell Green has mixed land uses with shops and offices, which makes it unique among the other PFS areas implemented in Islington to date, which tend to be more residential.

Since the scheme's inception, several monitoring reports have been produced to examine the impact of the road filters on a range of factors, including traffic volumes and speeds, air quality, bus journey times, emergency services and crime statistics.

The [Interim Report](#) was published in May 2021 and compared pre-implementation "baseline" data with data collected roughly six months after the scheme went live, and the [Pre-Consultation Report](#) was published in September 2021, comparing pre-implementation 'baseline' data with data roughly one year after the scheme went live. Following this, a public consultation was held in November and December 2021 with the scheme being made permanent on 4 March 2022. On 18 March 2022, an exemption policy for Blue Badge holders was introduced under a new Experimental Traffic Order (ETO).

Final Report

Unlike previous reports, which were aimed at determining the impact of the PFS scheme compared to a pre-implementation baseline, the purpose of this Final Report for the Clerkenwell Green LTN is to serve as a "**final check**" on the scheme roughly one-year on from the pre-consultation stage of data collection. The report will look to understand how the scheme is bedding in now with the implementation of the exemption policy for local Blue Badge holders and changes made at Skinner Street, and how it is likely to affect long-term transportation trends in the area.

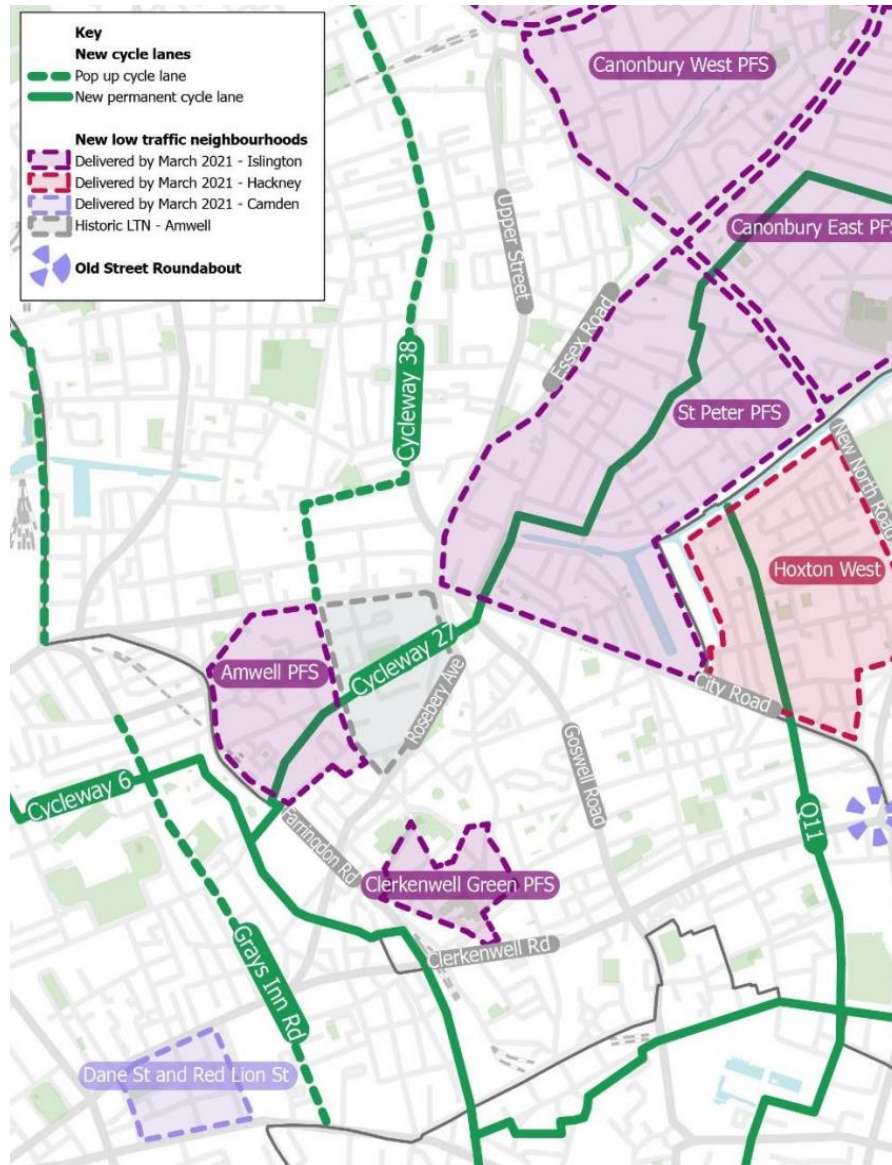
Given the above, the **body of this report will focus on changes between pre-consultation data generally collected in September 2021 and final report data collected in October 2022**, with conclusions based on this comparison. The August 2020 pre-implementation baseline (for roads that were also monitored in October 2022) is included for reference only, for the key tables showing total motorised vehicles and cycles. Full details from this phase of data collection can be found in the appendices.

This report will monitor motorised traffic on internal roads and boundary roads, cycling volumes on internal and boundary roads, and air quality across the scheme area.

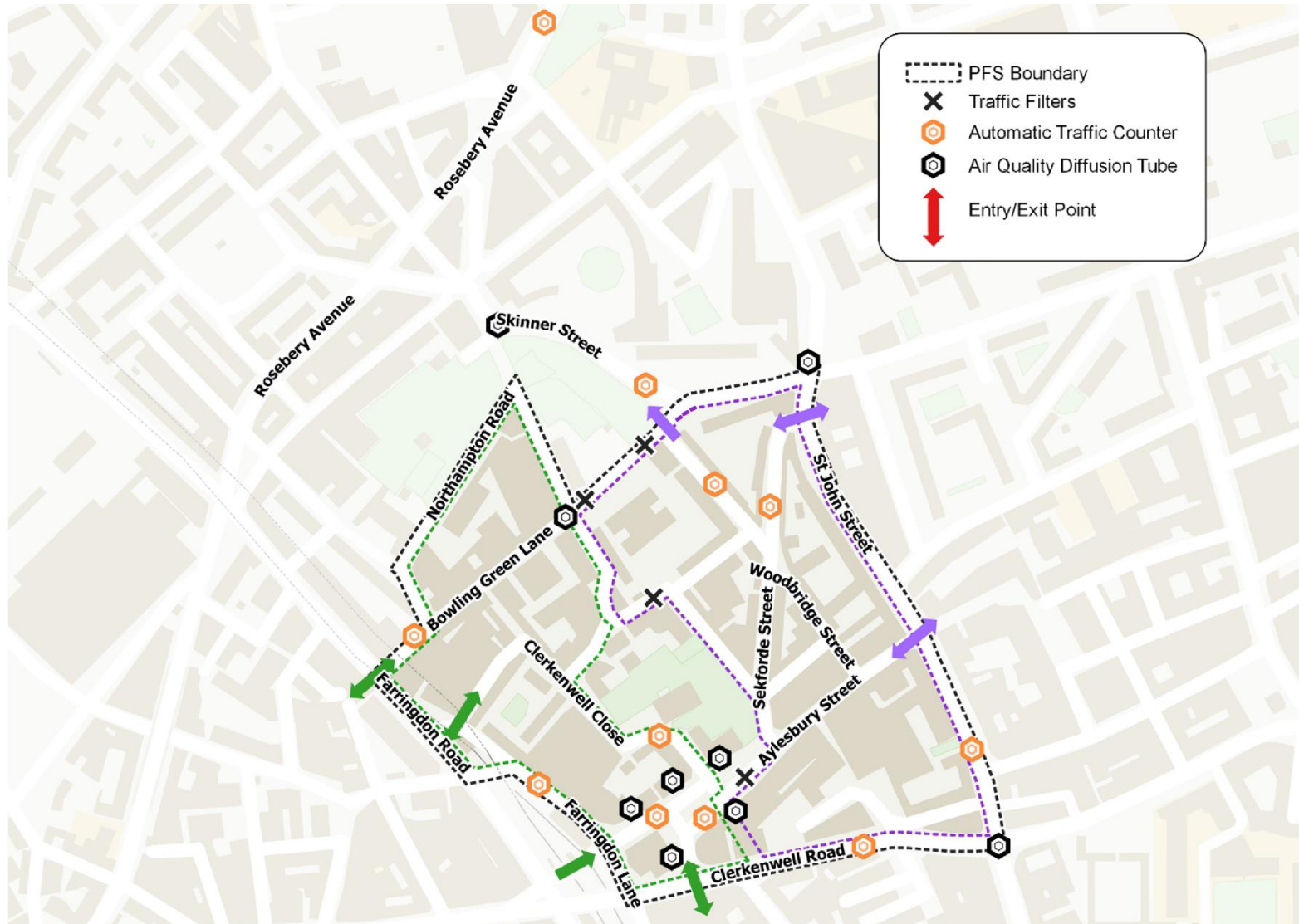
Scheme Context

Initial PFS scheme – In September 2020, traffic filters were introduced at four key locations in the Clerkenwell Green LTN. The filter locations were: Sans Walk between St. James’s Walk and Scotswood Street, Clerkenwell Green at Aylesbury Street, and both ends of Corporation Row including the southbound entry lane to Corporation Row from Skinner Street. At each end of Corporation Row there is a camera-enforced bus gate to allow access for the 812 bus service, although it is noted that this bus service was withdrawn by its operator in August 2022. The Clerkenwell Green and Sans Walk filters are enforced using bollards. Clerkenwell Green is the smallest PFS trial area implemented by the council so far.

Map 1 : Clerkenwell Green LTN in Wider Context of Nearby LTN Areas and Cycle Lanes



Map 2: Clerkenwell Green LTN and monitoring sites



Pre-Consultation Monitoring Outcomes

As noted above, all final report data is compared against pre-consultation report data from September 2021. However, it is important to note that the PFS scheme had already resulted in significant changes aligned with council policy at that point. The key findings from the pre-consultation monitoring report are therefore as follows, comparing pre-consultation stage data against baseline stage data

- The pre-consultation monitoring report showed that the Clerkenwell Green people-friendly street (PFS) trials were having the intended impacts in the area of reducing motorised traffic across internal roads by around 11% and increasing levels of cycling, making the area greener, cleaner and healthier for residents.
- Volumes of motorised vehicle traffic on the scheme's internal roads fell by 328 daily vehicles overall using normalised data (-11%). The largest decrease was on Bowling Green Lane by 529 daily vehicles (-44%). Vehicle volumes increased on Clerkenwell Green west by 114 vehicles (+15%), Woodbridge Street by 90 vehicles (+92%), Clerkenwell Close by 72 vehicles (+31%) and Sekforde Street by 34 vehicles (+16%).
- On boundary roads, normalised traffic volumes increased by 39% overall, particularly on Farringdon Lane by +55% (+1,422 daily vehicles) and St John Street by +49% (+1,351 vehicles). Volumes on Clerkenwell Road, monitoring for which could only consider AM/PM peak volumes, decreased by 13% (-941 vehicles during these periods). Volumes on Rosebery Avenue further away from the scheme area changed by less than 1%.
- On internal roads, there was limited change in the number and distribution of goods vehicles and motorcycles, but on boundary roads volumes of all these vehicles increased in line with the broader increases in traffic seen.
- In most places, there was not a meaningful change in vehicle speeds, although Bowling Green Lane saw a 12% decrease in average speeds and Clerkenwell Close saw a decrease of 17% in average speeds.
- Across all internal roads, there were considerable increases in the number of people counted cycling. The largest increase was on Bowling Green Lane, where an additional 251 cycling trips were counted each day on average. For internal roads, cycling volumes increased by 676 daily cycling trips on average (+100%). On boundary roads, cycle volumes increased by 807 daily cycling trips on average (+62), with increases seen on every monitored road (except Clerkenwell Road).
- Air quality changes in NO₂ reflected the wider pattern from across the borough, with no sites reporting levels above the legal limit.

- There were negligible changes to bus journey times across the scheme area, and general traffic journey times saw only relatively small increases (except for on Farringdon Lane and Farringdon Road, which both saw increases of about 20 seconds in travel times).

Independent Production of the Report by SYSTRA Ltd.

SYSTRA has been commissioned to prepare this report in partnership with the London Borough of Islington.

SYSTRA is a global leader in mass transportation and mobility, employing over 7,000 global employees across 80 countries. SYSTRA has the unique advantage of being not only a Transport Consultancy, but also Social and Market Research Consultancy. Their team members have an in-depth understanding of both the transport sector and of social and market research techniques, providing expert support in monitoring and evaluation both direct to clients and also in a peer review capacity. They provide a wealth of experience in conducting both qualitative and quantitative transport research with stakeholders to help understand their priorities and to inform options for future investment and policy development.

Neither SYSTRA nor LB Islington can be held accountable for errors in the data provided by third parties, where these errors have not been identified through normal checking processes.

Traffic Counts Approach

The count data presented in this report is not traffic modelling, but actual observed traffic, comparing traffic flows in September 2021 (which underpinned the Pre-Consultation report) with those in October 2022 (nearly one year since the Pre-Consultation report was published in November 2021 and after the scheme was modified and exemptions were introduced in March 2022). Data from the pre-implementation period (August 2020) has been included for context and to calculate total differences from before the scheme was implemented, but it is not the focus of the report.

The exception to this is Clerkenwell Road where, due to changes in nearby connected council traffic projects, no baseline counts were taken in August 2020. Therefore, the Clerkenwell Road baseline uses turning counts from Thursday March 28th, 2019, which only cover the AM and PM peak traffic volumes on this day. The site was included in the interim repeat counts, which used 7-day Automatic Traffic Counts (ACTs). In this report, the comparison for Clerkenwell Road extracts AM and PM peak totals from the Thursday of interim repeats, collected in March 2021. Clerkenwell Road is not included in the overall boundary road calculations because of these data type and collection differences from the other boundary roads, although it is presented separately.

There are several exceptions to when roads were monitored, generally due to vandalism or problems with survey equipment. The roads affected and relevant dates are presented in the section below.

Key Dates and Traffic Counts

Baseline (pre-implementation) counts: 17-24 August 2020; (28 March 2019, AM/PM peak)

Clerkenwell Green trial begins: 4 September 2020

Pre-consultation counts: 6 – 12 September 2021 (only AM/PM peaks used for Clerkenwell Road)

Final counts: 10 – 16 October 2022 (data was collected from weeks prior to this, but it is expected that data from those weeks would have been significantly impacted by rail strikes and thus the data was not used).

The council uses various traffic counting methods to understand traffic volumes and speeds within and around the LTN to assess if the scheme is having the desired impact and to respond (if required) with mitigating actions.

Automatic Traffic Counts (ATCs) are used at the majority of sites for the Clerkenwell Green LTN. ATCs measure motorised and cycle traffic volumes and motorised traffic speeds and classify the traffic by type. A Junction Traffic Camera (JTC) was used at St John Street between Cowcross St and Charterhouse St, however this site falls outside of the LTN and the data is not included in the analysis within this report. More information about the different types of counts and which type was used at each site is detailed in Appendix 1.

Analysis and Normalisation Methodology Overview

All counts were undertaken in full awareness of the disruption caused by the Covid-19 travel restrictions, and the need for a process to interpret the results in a way that accounts for this disruption.

Daily volumes of motorised traffic have been drawn from a range of 12 permanent traffic counters managed by Transport for London across Islington and used to establish monthly averages in 2019 and 2020. The locations of these counters are detailed in Appendix 1. The percentage difference between the same month across the two different years has been used to adjust the counts to normalise for Covid-19 disruption between the months in which counts have been taken. The methodology is set out in greater detail in Appendix 2. Drafting the baseline from TfL count locations outside of Islington and from additional years was considered and tested, but resulted in only small differences and was therefore not taken forward as the chosen methodology. With specific regard to the Clerkenwell Road baseline traffic volumes, these are not normalised as they are from 2019, before COVID-19 travel restrictions were put in place.

For context, the difference was greatest in April 2020, where motorised traffic was approximately 50% of what it had been in April 2019.

Using the months of the Clerkenwell Green counts, in September 2021 motorised traffic was approximately 4.2% lower than in September 2019 and in October 2022 motorised traffic was approximately 5.8% lower than in October 2019.

Table 1: Normalisation factors since March 2020 for traffic in Islington

| Month | Impact |
|--------------|---------------|
| Mar-20 | -27.97% |
| Apr-20 | -49.87% |
| May-20 | -38.34% |
| Jun-20 | -22.10% |
| Jul-20 | -13.46% |
| Aug-20 | -6.55% |
| Sep-20 | -6.90% |
| Oct-20 | -10.48% |
| Nov-20 | -22.13% |
| Dec-20 | -16.11% |
| Jan-21 | -25.70% |
| Feb-21 | -24.80% |
| Mar-21 | -31.28% |
| Apr-21 | -22.52% |
| May-21 | -18.68% |
| Jun-21 | -8.90% |
| Jul-21 | -6.16% |
| Aug-21 | -2.59% |
| Sep-21 | -4.17% |
| Oct-21 | -4.90% |
| Nov-21 | -5.85% |
| Dec-21 | -5.19% |
| Jan-22 | -4.79% |
| Feb-22 | -2.18% |
| Mar-22 | -16.12% |
| Apr-22 | -14.53% |
| May-22 | -12.27% |
| Jun-22 | -8.44% |
| Jul-22 | -7.08% |
| Aug-22 | -6.93% |
| Sep-22 | -6.19% |
| Oct-22 | -5.84% |

Interpreting Count Results

Unless specified otherwise, the seven-day daily average has been used and discussed in traffic volumes analysis in this report. Full data and flow profiles are provided in the Appendices.

Raw data has been analysed and compared to give the observed results. The observed results have then undergone the normalisation process described in the previous section to give the normalised results. Both the normalised results and the observed results can be found in the results tables in this report and in the appendices. The figures given for changes in volumes of traffic in this report are normalised, and percentages have been drawn from the differences between normalised results.

A negative number or percentage indicates a decrease between the two counts, while a positive number or percentage indicates an increase.

Please note that traffic flows fluctuate daily (generally up to 10%). As such, changes within -10% to +10% are considered insignificant (i.e. no or negligible change) and are not colour-coded. In contrast, changes of greater than 10% in a direction aligning with scheme goals (reduced traffic/pollution levels/speeds, and increased cycling) are highlighted in green, whilst changes of greater than 10% in the opposite direction are highlighted in red.

In addition, it must be noted that as vehicles travelling through the LTN are likely to go through multiple counter sites, it is almost certain that the number of vehicles counted in the area is higher than the actual number of trips.

External Factors

It is important to consider all these results in the context of other external factors which could be impacting on the data. Whilst broader trends occurring over longer timescales and larger geographies are likely addressed through normalisation, more local or short-term impacts may also be present. It is not possible to adjust for these in calculations. There are five main external factors which could be influencing results, as follows:

Nearby Low Traffic Neighbourhoods – As can be seen in Map 1, the Clerkenwell Green area is in close proximity to the Amwell LTN, and shares Rosebery Avenue as a boundary Road, with Skinner Street and St. John Street also nearby. It is therefore not possible to separate out the impact the Amwell LTN may also be having on Rosebery Avenue, St. John Street and Skinner Street.

Weather – Weather can have a significant impact on travel choices, especially cycling, and air pollution.

During the month the pre-consultation counts were taken in September 2021, the mean temperature at London Heathrow was 22.3°C with lows of 13.3°C, with 52.4mm of rain throughout the month.

The final traffic counts were taken between 10th – 16th October 2022. At Heathrow, highs for the month averaged around 18.3°C and lows averaged 10.4°C. 81.4mm of rainfall was recorded during the month.

Clerkenwell Green location and character – Clerkenwell Green is located in Central London and has a high density of mixed land uses with shops and offices, which makes it unique among the other PFS areas implemented in Islington to date, which tend to be more residential.

Covid-19 Impacts – During the pre-consultation data collection period, formal restrictions around Covid-19 were in the process of being lifted. Most rules affecting outdoor social contact had been removed, two households or six people were allowed to meet indoors, indoor hospitality services were provided and hotels had been opened on 17th May. However, during the monitoring period, not all restrictions had been officially lifted, and face masks were still mandatory in certain settings.

In comparison, by October 2022 all Covid restrictions had been removed for several months under the government’s “living with Covid” plan released at the end of February, and tests were no longer free for citizens. The virus was still in active circulation in the UK, but symptoms tended to be fairly mild and advice was generally to avoid coming to work or leaving the house until symptoms abated.

Through both monitored periods, working from home was a significant driver of how much people travelled, with a larger proportion of people returning to offices at least part-time during the final counts compared to the pre-consultation ones.

Cost of Living Crisis – In October 2022, during the final counts, rising inflation had significantly increased the price of petrol and other critical items, with the cost of driving and taking public transportation rapidly increasing compared to previous years and the affordability of travel decreasing. This may have reduced the number of discretionary journeys taken by paid modes (both public and private), with some level of increase in walking and cycling likely.

ULEZ Extension – On October 2021, directly after the pre-consultation counts were taken, the ULEZ (Ultra Low Emission Zone) was extended to the North and South Circular Roads, encompassing the entirety of the Borough of Islington (previously, only areas south of City Road were subject to ULEZ levies).

In July 2022 Transport for London published the [*Expanded Ultra Low Emission Zone – Six Month Report Including Low Emission Zone – One Year Report*](#). The report estimates that the new ULEZ reduced traffic by 21,000 vehicles in the zone on an average day, a reduction of 2 per cent of traffic flow compared to the weeks before the expanded ULEZ was implemented. Whilst it is expected that this broad change in cost of driving in the borough has been reflected in normalised data via TfL ATCs, it is possible that more localised effects exist.

Analysis of Vehicle Volumes

All Motorised Vehicle Volumes (7-Day Daily Average)

This section outlines the changes in observed and normalised traffic volumes for all motorised vehicles, including cars (both private cars and taxis/company-owned cars) and goods vehicles ranging from delivery vans to large articulated lorries. The total number of such motorised vehicles counted in the monitored week has been summed and divided by seven to create a daily average. The numbers presented have been rounded to the nearest whole number and raw/percentage changes calculated accordingly. It is noted that the number of cycles counted is not included in this analysis.

Tables 2 and 3 on the overleaf focus on changes in motorised vehicle volumes between the pre-consultation data collection period in September 2021 and the final data collection period in October 2022. For this overall summary, a comparison against the initial baseline is also provided for context. It is important that percentage change figures are considered in the context of raw changes, as a large percentage change could indicate a relatively minor change in actual vehicles counted on a particularly quiet road. Conversely, a busy road could see a small percentage change even if there the number of vehicles counted is quite different between the two monitored periods. Further context for each site can be found in Appendix 5.

Table 2: Motorised Traffic Volumes on Internal Roads

| | Pre-Consultation Observed: Sep-21 | Pre-Consultation Normalised: Sep-21 | Final Observed: Oct-22 | Final Normalised: Oct-22 | Difference final Observed vs. Pre-Consultation | Difference final Normalised vs. Pre-consultation | Difference final Observed vs. Pre-Consultation (%) | Difference final Normalised vs. Pre-Consultation (%) | Difference final Normalised vs. Baseline (Aug-20) | Difference final Normalised vs. Baseline (Aug-20) (%) |
|--------------------------------|--|--|-------------------------------|---------------------------------|---|---|---|---|--|--|
| Clerkenwell Green south | 379 | 396 | 503 | 533 | 124 | 137 | 32% | 35% | 27 | 5% |
| Clerkenwell Green west | 851 | 888 | 1,185 | 1,258 | 334 | 370 | 39% | 42% | 484 | 63% |
| Bowling Green Lane | 652 | 681 | 622 | 661 | -30 | -20 | -5% | -3% | -548 | 45% |
| Clerkenwell Close | 293 | 306 | 307 | 325 | 14 | 19 | 4% | 6% | 91 | 39% |
| Sekforde Street | 238 | 249 | 299 | 318 | 61 | 69 | 26% | 28% | 104 | 49% |
| Woodbridge Street | 179 | 187 | 224 | 240 | 45 | 53 | 25% | 29% | 143 | 147% |
| Total Internal | 2,592 | 2,707 | 3,140 | 3,335 | 548 | 628 | 21% | 23% | 301 | 10% |

Table 3: Motorised Traffic Volumes on Boundary Roads

| | Pre-Consultation Observed: Sep-21 | Pre-Consultation Normalised: Sep-21 | Final Observed: Oct-22 | Final Normalised: Oct-22 | Difference final Observed vs. Pre-Consultation | Difference final Normalised vs. Pre-consultation | Difference final Observed vs. Pre-Consultation (%) | Difference final Normalised vs. Pre-Consultation (%) | Difference final Normalised vs. Baseline (Aug-20) | Difference final Normalised vs. Baseline (Aug-20) (%) |
|--------------------------|-----------------------------------|-------------------------------------|------------------------|--------------------------|--|--|--|--|---|---|
| St John Street | 4,083 | 4,262 | 4,347 | 4,616 | 264 | 354 | 6% | 8% | 1,829 | 66% |
| Farringdon Lane | 3,881 | 4,050 | 4,850 | 5,150 | 969 | 1,100 | 25% | 27% | 2,546 | 98% |
| Skinner Street | 4,436 | 4,629 | 5,286 | 5,612 | 850 | 983 | 19% | 21% | 1,767 | 46% |
| Total Boundary | 12,400 | 12,941 | 14,483 | 15,378 | 2,083 | 2,437 | 17% | 19% | 6,142 | 67% |
| Clerkenwell Road* | 6,077 | 6,341 | 5,386 | 5,720 | -691 | -621 | 11% | -10% | -1,541 | 21% |
| Rosebery Avenue** | 9,237 | 9,639 | 8,726 | 9,268 | -511 | -371 | -6% | -4% | -381 | -4% |

* As set out under the "Traffic counts approach" section, Clerkenwell Road uses only AM/PM peak traffic volumes to represent the overall daily traffic, as this was the only detail available peak traffic on one day for this site's original 2019 baseline count. This limited analysis, providing total AM/PM peak flows for a surveyed Thursday was continued for all other periods to provide consistency.

** The data for Rosebery Avenue is presented in a separate table and is not included in the overall boundary roads average. This is because the location on Rosebery Avenue where traffic counts took place is not actually on the boundary of Clerkenwell Green PFS area, as set out in the "Traffic Counts Approach" section.

Insights: All Motorised Vehicle Volumes

In Clerkenwell Green, the volume of motorised traffic has risen between the pre-consultation and final monitoring periods. On internal roads, total normalised traffic volumes increased by 629 daily vehicles, representing a 23% increase. On boundary roads, for locations in which full-week data collection had been completed, traffic volumes increased by nearly 2,400 daily vehicles, representing a 19% increase.

On internal roads, the largest increase in vehicle numbers was on Clerkenwell Green's western side (eastbound), which saw an additional 370 vehicles counted (+42%) since the pre-consultation stage. The westbound Clerkenwell Green site also saw an increase of over 100 vehicles (+137 daily vehicles, +35%). Sekforde Street and Woodbridge Street saw smaller nominal increases of 69 and 54 daily vehicles, respectively (+28% and +29%). Since the 2020 baseline, a 10% increase in traffic levels has been seen on internal roads, with the westbound Clerkenwell Green site contributing most to this change.

For boundary roads, motorised vehicles counted increased by around 1,000 per day on both Farringdon Lane (+1,100) and Skinner Street (+983), increases of +27% and +21% respectively. The St John Street site saw a smaller increase of 354 daily vehicles, or an 8% increase. Clerkenwell Road, for which data could only be reliably sourced and adequately compared for Thursday AM/PM peaks, saw a 10% decrease in motorised vehicles counted for those periods. Rosebery Avenue, which is not a boundary road but may have been impacted by the scheme, saw a drop of 371 daily vehicles (-4%). Since the 2020 baseline, there has been an over 67% increase in boundary road sites, with the largest change seen on Farringdon Road (+2,546 daily vehicles or +98%).

Whilst the above numbers are normalised, they may still be reflective of an above-borough average (and therefore above-normalisation) increase in commercial activity specific to the Clerkenwell area that has not been captured across the wider borough monitoring methodology – this is particularly possible in light of significantly busier offices in central London in 2022 vs. 2021. In addition, considering traffic patterns and counter locations, it is also possible that vehicles are using Clerkenwell Green as a shortcut (avoiding the lights) between Clerkenwell Road and Farringdon Lane – as all of these locations (minus Clerkenwell Road, which doesn't have full-week counts) showed comparatively large increases in traffic volumes. It is unlikely that the Blue Badge exemption policy for the LTN has played a significant role in these changes given that exemptions have been granted to 21 Blue Badge holders that are residents within the scheme area.

Goods Vehicles Volumes (5-Day Average)

This section outlines the changes in normalised traffic volumes for Light Goods Vehicles and Heavy Goods Vehicles.

LGV stands for Light Goods Vehicle. This is defined, for the purposes of this report (and differs from previous reports), as a rigid two-axle van, such as the type of van commonly used for deliveries. HGV stands for Heavy Goods Vehicle, which is a goods vehicle larger than the type of van described above.

The results shown are for 5-day average weekday volumes, excluding weekends. This is because goods vehicle traffic is generally lower at weekends, therefore the weekday data gives a better impression of the effects on goods vehicle traffic. Similarly, the % numbers given are percentages of total motorised traffic, rather than all vehicles counted. Changes in the proportion of LGV/HGV compared to total motorised traffic (or “dominance” of such vehicles) is presented as a percentage point difference.

Table 4: Goods Vehicles Volumes on Internal Roads (Normalised)

| | LGV #: Sep-21 | LGV Prop: Sep-21 | LGV #: Oct-22 | LGV Prop: Oct-22 | LGV Change in Proportion | HGV #: Sep-21 | HGV Prop: Sep-21 | HGV #: Oct-22 | HGV Prop: Oct-22 | HGV Change in Proportion |
|------------------------------------|--------------------------|---------------------------------|--------------------------|---------------------------------|---|--------------------------|---------------------------------|--------------------------|---------------------------------|---|
| Clerkenwell Green south | 76 | 17% | 93 | 15% | -2% | 13 | 3% | 25 | 4% | 1% |
| Clerkenwell Green west site | 125 | 12% | 111 | 8% | -4% | 43 | 4% | 142 | 10% | 6% |
| Bowling Green Lane | 120 | 16% | 114 | 15% | -1% | 23 | 3% | 52 | 7% | 4% |
| Clerkenwell Close | 64 | 19% | 51 | 13% | -6% | 7 | 2% | 34 | 9% | 7% |
| Sekforde Street | 61 | 22% | 22 | 6% | 16% | 2 | 1% | 26 | 7% | 6% |
| Woodbridge Street | 39 | 19% | 45 | 17% | -2% | 3 | 1% | 2 | 1% | 0% |
| Total/Average Internal | 485 | 16% | 436 | 13% | -3% | 91 | 3% | 281 | 8% | 5% |

Table 5: Goods Vehicles Volumes on Boundary Roads (Normalised)

| | LGV #: Sep-21 | LGV Prop: Sep-21 | LGV #: Oct-22 | LGV Prop: Oct-22 | LGV Change in Proportion | HGV #: Sep-21 | HGV Prop: Sep-21 | HGV #: Oct-22 | HGV Prop: Oct-22 | HGV Change in Proportion |
|--------------------------|--------------------------|---------------------------------|--------------------------|---------------------------------|---|--------------------------|---------------------------------|--------------------------|---------------------------------|---|
| St John Street | 785 | 16% | 684 | 13% | -3% | 150 | 3% | 236 | 4% | 1% |
| Farringdon Lane | 429 | 10% | 682 | 13% | 3% | 437 | 10% | 373 | 7% | -3% |
| Skinner Street | 836 | 16% | 905 | 14% | -2% | 83 | 2% | 86 | 1% | -1% |
| Total Boundary | 2,050 | 15% | 2,271 | 13% | -2% | 670 | 7% | 695 | 5% | -2% |
| Clerkenwell Road* | 497 | 8% | 513 | 9% | 1% | 351 | 6% | 325 | 6% | 0% |
| Rosebery Avenue** | 1,348 | 14% | 1,249 | 13% | -1% | 549 | 6% | 538 | 6% | 0% |

* As set out under the "Traffic counts approach" section, Clerkenwell Road uses only AM/PM peak traffic volumes to represent the overall daily traffic, as this was the only detail available peak traffic on one day for the original 2019 baseline. This limited analysis, providing total AM/PM peak flows for a surveyed Thursday was continued for all other periods to provide consistency.

** The data for Rosebery Avenue is presented in a separate table and is not included in the overall boundary roads average. This is because the location on Rosebery Avenue where traffic counts took place is not actually on the boundary of Clerkenwell Green PFS area, as set out in the "Traffic Counts Approach" section.

Insights: Goods Vehicles Volumes

Overall, on internal roads, there has been limited change in the proportion of LGVs, the number of which has fallen both as a total number of vehicles counted and as a proportion of total traffic, despite an overall increase in motorised vehicles. For HGVs, however, there has been more than a tripling of their number, making up a 5-percentage point increase in proportion of total motorised traffic, perhaps due to increased post-Covid construction activity in the area.

The only notable change for LGVs was seen on Sekforde Street, where LGV numbers dropped by two-thirds, with an associated drop in their proportion of total motorised traffic from 22% to 6%. For HGVs, the increases were spread across most roads, with an increase from 43 to 143 daily vehicles at Clerkenwell Green's western, eastbound site and similar doubling of HGV numbers on Bowling Green Lane. Smaller nominal increases in HGV numbers were also seen on Clerkenwell Close, Sekforde Street and the southern Clerkenwell Green site.

On boundary roads, changes were more limited, with a total 11% increase in LGVs (a smaller percentage change than for overall motorised vehicles and thus yielding a drop in proportion of total motorised traffic) and 4% increase for HGVs. For Clerkenwell Road and Rosebery Avenue, which were assessed separately, similar trends seem to have held, although with a slight drop in total HGVs on Clerkenwell Road and slight drop in LGVs on Rosebery Avenue.

Motorcycle Volumes (7-Day Average)

Motorcycle volumes are considered separately from other vehicles as they are occasionally able to travel through neighbourhood blocks using filters and streets in manners that cars and lorries cannot (for example by illegally using cycle filters). Similarly, on average, they create more noise than general traffic and are therefore of particular concern during the overnight period, especially as a result of the significant increase in their prevalence following Covid-19 and the spike in deliveries made by motorcycle in London.

Motorcycles are distinguished from pedal cycles in ATC counters by the weight and spacing of the vehicle tyres.

Table 6: Motorcycle Flows on Internal Roads (Normalised)

| | Motorcycle #: Sep-21 | Motorcycle Prop.: Sep-21 | Motorcycle #: Oct-22 | Motorcycle Prop.: Oct-22 | Motorcycle Change in Proportion |
|--------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|--|
| Clerkenwell Green south | 44 | 11% | 77 | 14% | 3% |
| Clerkenwell Green west | 75 | 8% | 92 | 7% | -1% |
| Bowling Green Lane | 64 | 9% | 68 | 10% | 1% |
| Clerkenwell Close | 25 | 8% | 24 | 7% | -1% |
| Sekforde Street | 25 | 10% | 46 | 14% | 4% |
| Woodbridge Street | 24 | 13% | 38 | 16% | 3% |
| Total/Average Internal | 257 | 9% | 345 | 11% | 2% |

Table 7: Motorcycle Flows on Boundary Roads (Normalised)

| | Motorcycle #: Sep-21 | Motorcycle Prop.: Sep-21 | Motorcycle #: Oct- 22 | Motorcycle Prop.: Oct-22 | Motorcycle Change in Proportion |
|--------------------------|---------------------------------|-------------------------------------|----------------------------------|-------------------------------------|--|
| St John Street | 356 | 8% | 414 | 9% | 1% |
| Farringdon Lane | 344 | 8% | 329 | 6% | -2% |
| Skinner Street | 380 | 8% | 420 | 7% | -1% |
| Total Boundary | 1,080 | 8% | 1,163 | 8% | 0% |
| Clerkenwell Road* | 381 | 6% | 323 | 6% | 0% |
| Rosebery Avenue** | 676 | 7% | 658 | 7% | 0% |

* As set out under the "Traffic counts approach" section, Clerkenwell Road uses only AM/PM peak traffic volumes to represent the overall daily traffic, as this was the only detail available peak traffic on one day for the original 2019 baseline. This limited analysis, providing total AM/PM peak flows for a surveyed Thursday was continued for all other periods to provide consistency.

** The data for Rosebery Avenue is presented in a separate table and is not included in the overall boundary roads average. This is because the location on Rosebery Avenue where traffic counts took place is not actually on the boundary of Clerkenwell Green PFS area, as set out in the "Traffic Counts Approach" section.

Insights: Motorcycle Volumes

On internal roads, motorcycle volumes increased broadly in line with general trends of increased motorised traffic, although daily volumes remained under 100 normalised motorcycles counted per day. On Sekforde Street, Woodbridge Street and Clerkenwell Green south), there was a slight increase in the proportion of motorcycles compared to other motorised vehicles.

There was no notable change in motorcycle numbers or dominance on boundary roads, with motorcycles maintaining roughly the same mode share in all measured locations, with perhaps a slight decrease in prominence on Farringdon Lane.

Cycle Volumes (7-Day Average)

We have not normalised cycling figures for Covid-19 due to the lack of an available source that provides continuous month-to-month cycling levels encompassing all types of cycling trips (commute and leisure), and is at a local enough geographic scale to form a meaningful and robust benchmark.

Unlike motorised traffic trends, cycling levels are significantly impacted by seasonal weather change including temperature and rainfall; for example, there is normally much more cycling participation in July than in February, and there are similarly significantly more cycle trips completed in July than February. There are several interlinked factors when it comes to the impact seasonal weather variation has on cycling levels, while weather can still vary within a season, a month or even a day. As an indication of the impact weather can have, one 2011 study found a doubling in temperature could lead up to a 50% increase in cycling levels, before having a negative impact if too high (Study by [Miranda-Moreno and Nosal, 2011](#)).

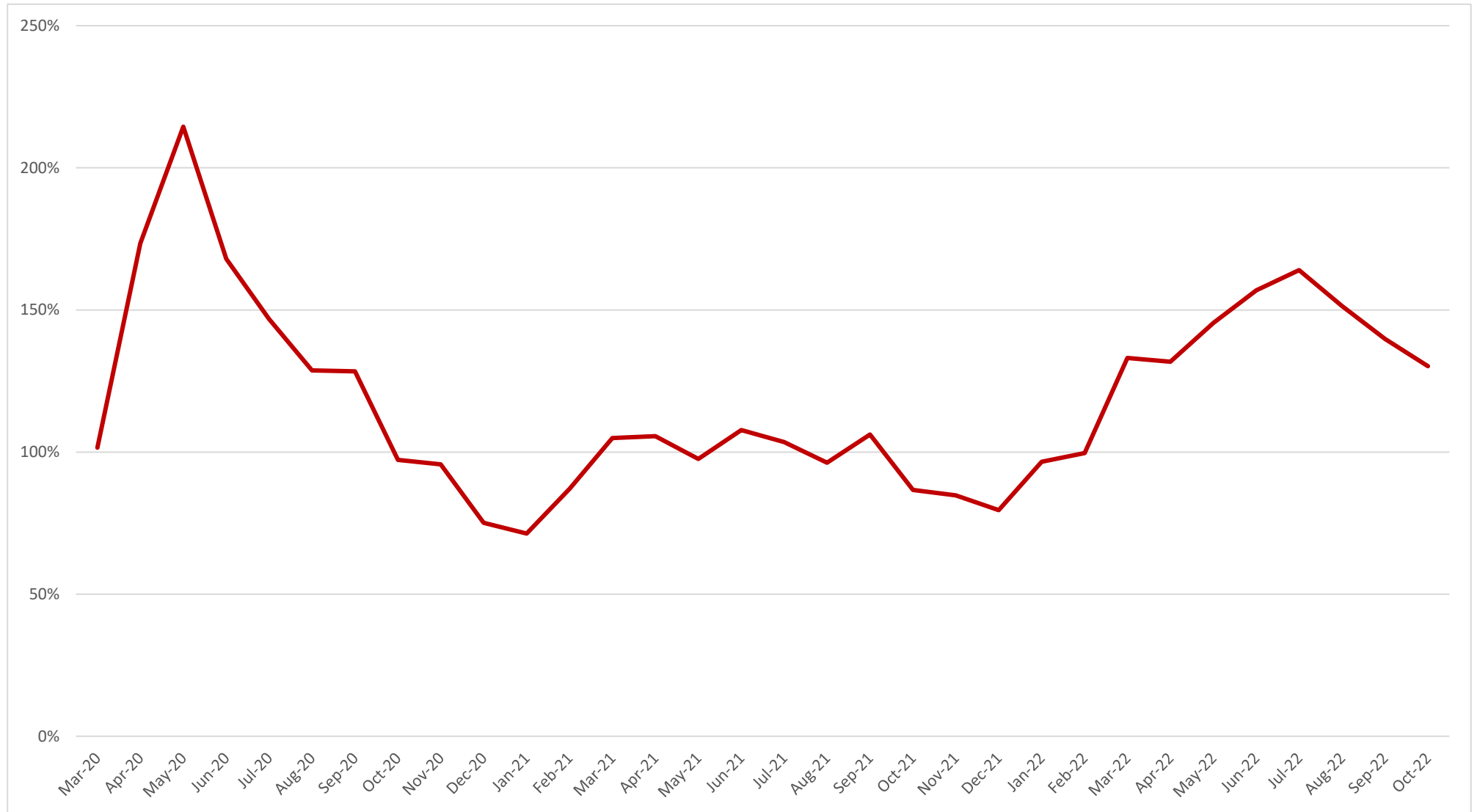
During September 2021, when pre-consultation counts were taken, the average daily high temperature for London (Heathrow) was 22°C, with an average low of 13°C, with broadly average rainfall for the season. In comparison, in the month of the final counts (i.e. October 2022), the average high was 18°C, with a low of 10°C, and 55% more rainfall than in the pre-consultation counts.

Considering these caveats, it is also important to note that government regulations and guidance surrounding Covid-19, as well as the impact of the cost-of-living crisis in 2022, have significantly impacted wider cycling trends since March 2020 (data from [DfT's Official Statistics, 2021](#)). Graph 5 on the overleaf page shows, on a national basis, the number of cycle trips completed as compared to the same month pre-pandemic (i.e. October 2022 compared to September 2019), indicating that whilst the first few months of the pandemic (i.e. early summer 2020) saw very high levels of cycling, levels since then have been driven by a range of factors (for example lower flows in the largely rainy summer of 2021 and higher flows in the hot and dry summer of 2022 during the cost of living crisis).

Route choices made by people cycling will also be impacted by the availability of nearby protected cycle infrastructure and Low Traffic Neighbourhoods – for example, Cycleway 6, which was opened in 2018, runs north-south nearby the scheme area.

Following Graph 1 outlining nationwide cycling trends, the Clerkenwell Green map and table outline changes in cycling volumes across the scheme area between pre-consultation and final counts, with comparison against baseline provided for context.

Graph 1: National Cycling Levels - % of Comparison Month in 2019*



*For example, October 2022 cycling levels are ~130% of the October 2019 average.

Table 8: Cycle Volumes on Internal Roads

| | Pre-Consultation Observed : Sep-21 | Final Observed : Oct-22 | Difference final vs. Pre-Consultation | Difference final vs. Pre-Consultation (%) | Difference final vs. Baseline (Aug-20) | Difference final vs. Baseline (Aug-20) (%) |
|------------------------------------|---|------------------------------------|--|--|---|---|
| Clerkenwell Green south | 357 | 581 | 224 | 63% | 429 | 282% |
| Clerkenwell Green west | 230 | 307 | 77 | 33% | 171 | 126% |
| Bowling Green Lane | 493 | 651 | 158 | 32% | 409 | 169% |
| Clerkenwell Close | 117 | 132 | 15 | 13% | 79 | 149% |
| Sekforde Street | 101 | 171 | 70 | 69% | 108 | 171% |
| Woodbridge Street | 54 | 69 | 15 | 28% | 36 | 109% |
| Total Internal | 1,352 | 1,911 | 559 | 41% | 1,232 | 181% |

Table 9: Cycle Volumes on Boundary/Other External Roads

| | Pre-Consultation Observed : Sep-21 | Final Observed : Oct-22 | Difference final vs. Pre-Consultation | Difference final vs. Pre-Consultation (%) | Difference final vs. Baseline (Aug-20) | Difference final vs. Baseline (Aug-20) (%) |
|--------------------------|------------------------------------|-------------------------|---------------------------------------|---|--|--|
| St John Street | 1,016 | 1,295 | 279 | 27% | 659 | 104% |
| Farringdon Lane | 483 | 557 | 74 | 15% | 327 | 142% |
| Skinner Street | 651 | 748 | 97 | 15% | 319 | 74% |
| Total Boundary | 2,150 | 2,600 | 450 | 21% | 1,305 | 101% |
| Clerkenwell Road* | 1,292 | 1,129 | -163 | 13% | 183 | 19% |
| Rosebery Avenue** | 2,025 | 2,540 | 515 | 25% | 910 | 56% |

* As set out under the “Traffic counts approach” section, Clerkenwell Road uses only AM/PM peak traffic volumes to represent the overall daily flows, as this was the only detail available peak flows on one day for the original 2019 baseline. This limited analysis, providing total AM/PM peak flows for a surveyed Thursday was continued for all other periods to provide consistency.

** The data for Rosebery Avenue is presented in a separate table and is not included in the overall boundary roads average. This is because the location on Rosebery Avenue where traffic counts took place is not actually on the boundary of Clerkenwell Green PFS area, as set out in the “Traffic Counts Approach” section.

Insights: Cycling Volumes

Across internal roads measured during the same period (September 2021 to October 2022), the number of cycles counted increased by 41%, with an additional 559 new people cycling in the final counts. All internal roads had double-digit percentage increases, with the largest increases taking place on Clerkenwell Green south , of 63% (+224 daily people cycling) and on Bowling Green Lane of 32% (+158 daily people cycling).

On boundary roads with full week counts, cycling volumes increased by 21% or 515 daily cycles in the final counts. The largest increase was on St John Street by 27% (+279 daily people cycling). For the peak periods measured on Clerkenwell Road, there was an overall decrease in cycling trips measured – a drop of 13% (-163 daily people cycling). However, it is likely these are cycle trips rerouting onto new cycling infrastructure rather than a problem with this road itself given the drop in motorised vehicles counted here.

Analysis of Vehicle Speeds

Speeding is a major contributing factor to road danger, so reducing speeding is vital to making roads safer for all.

Traffic counters measure motorised traffic speeds as well as volumes. Details about the dates and locations of the traffic volume and speed monitoring are in Appendix 5. The speed limit is 20mph on all monitored roads.

Speed monitoring results have not been normalised as they are not considered to have been impacted by Covid-19 in the same way and to the same extent as traffic volumes, though speeds may settle into new patterns post-Covid-19. The results presented here are seven-day averages. The 85th percentile is used in transport monitoring to gauge changes in speeds and speeding behaviour. It is the speed at or below which 85% of traffic will be travelling along a street (and therefore 15% of traffic will be travelling faster than this speed). Cycles and their speeds have been removed from calculations relating to vehicle speeds as including such counts would skew averages down.

Map 5: Average vehicle speeds in mph

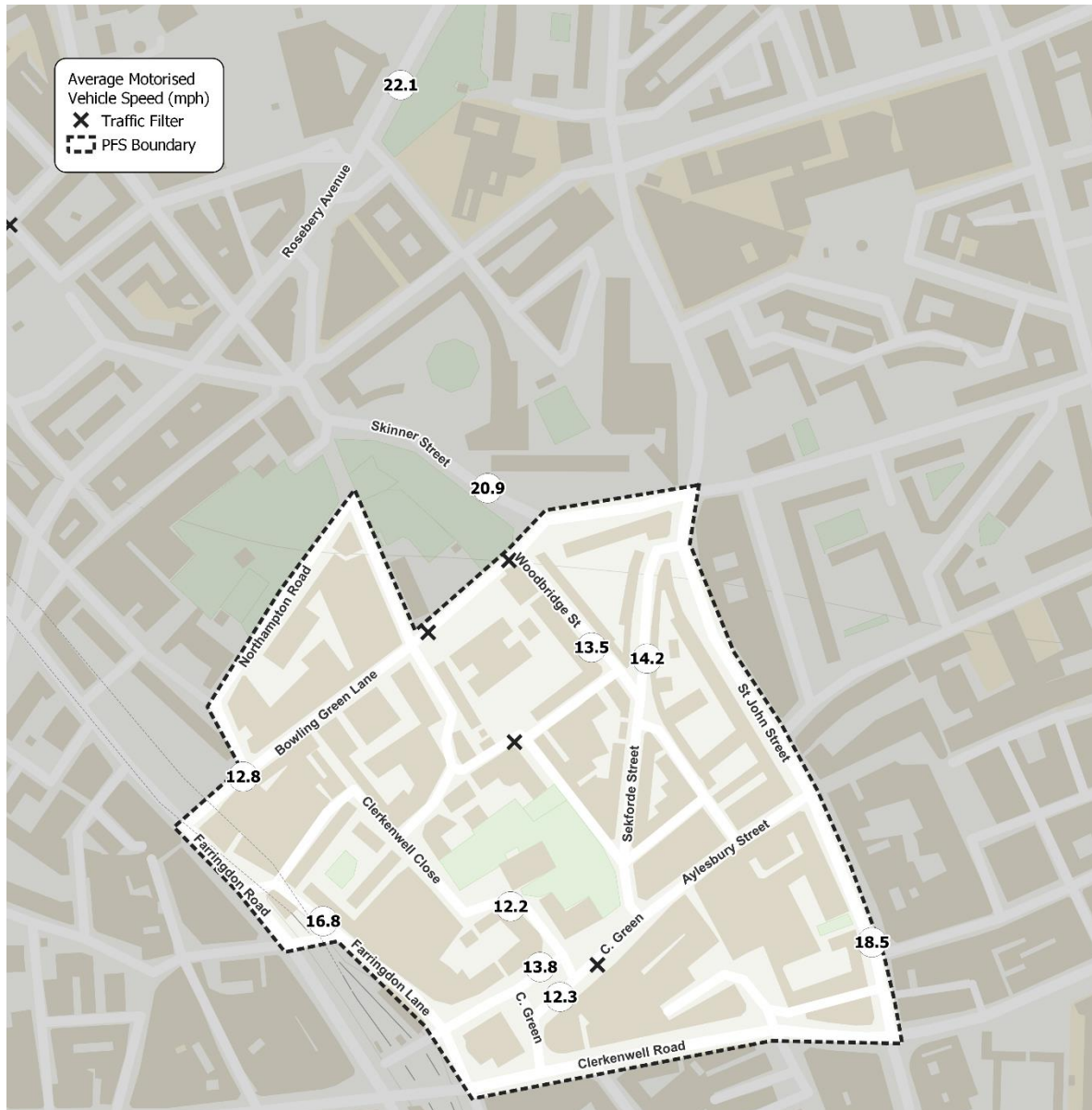


Table 10: Difference in Vehicle Speeds on Internal Roads

| | Average Speed - Final (mph) | Average Speed - Diff. vs. Pre-Con (mph) | Average Speed - Diff. vs. Pre-Con (%) | Average Speed - Diff. vs. Baseline (mph) | Average Speed - Diff. vs. Baseline (%) | 85 th Percentile Speed - Final (mph) | 85 th Percentile Speed - Diff. vs. Pre-Con (mph) | 85 th Percentile Speed - Diff. vs. Pre-Con (%) | 85 th Percentile Speed - Diff. vs. Baseline (mph) | 85 th Percentile Speed - Diff. vs. Baseline (%) | % Speeding (above Posted Speed Limit) - Final (%) | % Speeding (above Posted Speed Limit) - Diff vs. Pre-Con (% pt.) | % Speeding (above Posted Speed Limit) - Diff vs. Baseline (% pt.) |
|--------------------------------|-----------------------------|---|---------------------------------------|--|--|---|---|---|--|--|---|--|---|
| Clerkenwell Green south | 12.3 | -0.2 | -2% | 0.0 | 0% | 14.9 | -0.4 | -3% | -0.3 | -2% | 1% | -1% | 0% |
| Clerkenwell Green west | 13.8 | -0.3 | -2% | -0.6 | -4% | 16.5 | -0.3 | -2% | -0.7 | -4% | 2% | -1% | -1% |
| Bowling Green Lane | 12.8 | -0.5 | -4% | -2.3 | 15% | 16.0 | -0.2 | -1% | -2.0 | 11% | 2% | 0% | -3% |
| Clerkenwell Close | 12.2 | -0.3 | -2% | -0.7 | -5% | 14.7 | -0.9 | -6% | -1.2 | -8% | 2% | 0% | 0% |
| Sekforde Street | 14.2 | -1.3 | -8% | -1.8 | 11% | 18.0 | -1.3 | -7% | -2.3 | 11% | 7% | -5% | -9% |
| Woodbridge Street | 13.5 | -0.3 | -2% | 0.6 | 5% | 17.4 | -0.2 | -1% | 0.3 | 2% | 5% | -2% | -1% |
| Weighted Average | 13.2 | -0.4 | -3% | -1.1 | -7% | 16.2 | -0.4 | -2% | -1.1 | -6% | 3% | -1% | -2% |

Table 11: Difference in Vehicle Speeds on Boundary Roads

| | Average Speed - Final (mph) | Average Speed - Diff. vs. Pre-Con (mph) | Average Speed - Diff. vs. Pre-Con (%) | Average Speed - Diff. vs. Baseline (mph) | Average Speed - Diff. vs. Baseline (%) | 85 th Percentile Speed - Final (mph) | 85 th Percentile Speed - Diff. vs. Pre-Con (mph) | 85 th Percentile Speed - Diff. vs. Pre-Con (%) | 85 th Percentile Speed - Diff. vs. Baseline (mph) | 85 th Percentile Speed - Diff. vs. Baseline (%) | % Speeding (above Posted Speed Limit) - Final (%) | % Speeding (above Posted Speed Limit) - Diff vs. Pre-Con (% pt.) | % Speeding (above Posted Speed Limit) - Diff vs. Baseline (% pt.) |
|-------------------------|-----------------------------|---|---------------------------------------|--|--|---|---|---|--|--|---|--|---|
| St John Street | 18.5 | -0.6 | -3% | -0.5 | -3% | 23.0 | -0.5 | -2% | -0.5 | -2% | 35% | -6% | -4% |
| Farringdon Lane | 16.8 | -1.0 | -6% | -0.5 | -3% | 20.4 | -1.1 | -5% | -0.8 | -4% | 17% | -8% | -6% |
| Skinner Street | 20.9 | -0.9 | -4% | -0.9 | -4% | 24.7 | -1.0 | -4% | -1.1 | -4% | 57% | -9% | -10% |
| Weighted Average | 18.8 | -0.9 | -4% | -0.9 | -4% | 22.7 | -0.9 | -4% | -1.1 | -4% | 37% | -8% | -9% |
| Rosebery Avenue* | 22.1 | -0.4 | -2% | -0.3 | -1% | 26.6 | -0.5 | -2% | -0.3 | -1% | 65% | -4% | -3% |

* The data for Rosebery Avenue is presented in a separate table and is not included in the overall boundary roads average. This is because the location on Rosebery Avenue where traffic counts took place is not actually on the boundary of Clerkenwell Green PFS area, as set out in the "Traffic Counts Approach" section.

**Data for Clerkenwell Road is not included for speeds, as peak hour speeds would not be comparable to those speeds presented for other roads.

Insights: Vehicle Speeds

On internal roads the weighted average speed fell slightly, by 0.4mph, between the pre-consultation and final monitoring periods. The 85th percentile speed also fell by the same 0.4mph, with an overall 1 percentage point reduction in the percentage of vehicles speeding.

For boundary rounds, the weighted average and 85th percentile speeds both fell 0.9mph (4% in both cases) between the pre-consultation and final monitoring periods. The average percentage of vehicles speeding dropped by 8 percentage points. Of the boundary roads monitored, the largest changes in speeds were still only around 1mph. Since the 2020 baseline, there were also no changes of over 10% across all metrics considered.

Between the pre-consultation and final consultation periods, there was no change of 10% or more across any speed metric. The largest changes were on Sekforde Street, where average and 85th percentile speeds fell by 1.3mph – whilst the percentage of vehicles speeding also fell by 5 percentage points. Since the 2020 baseline, Sekforde Street saw an overall 11% reduction in average and 85th percentile speeds (-1.8mph average, -2.3mph 85th percentile). In the same time frame (since the baseline), Bowling Green Lane also saw a notable drop of 15% in average speeds (-2.3mph) and -11% in 85th percentile speed (-2.0mph).

It is noted from iBus data provided by TfL that bus performance on boundary roads has generally been stable throughout the monitoring period, with bus speeds generally staying within one standard deviation of the mean, indicating no concern with deterioration in performance. There has been an increase in bus journey times northbound on St. John's Street in the most recent week of data, but TfL believe this is related to faulty detection rather than related to traffic conditions.

Air Quality

Air quality refers to the air around us, how clean it is and how many pollutants (harmful chemicals or substances) it contains. The more pollutants the air contains the more air pollution there is and the worse the air quality is. Poor air quality is a concern as air pollution can impact health. The two main pollutants of concern that we monitor are:

- **Particulate matter of 10µm or less in size (PM10)** – tiny bits of solid material made of a range of substances suspended in the air.
- **Nitrogen dioxide (NO₂)** – one of a group of gases called nitrogen oxides.

There are three types of monitors in use, which will give slightly different data:

- **Automatic monitors:** monitor NO₂ and PM10 24 hours a day at two locations in the borough. These are our most accurate monitors.
- **Diffusion tubes:** provide monthly readings of NO₂. While not as accurate as the automatic monitors, they can be more widely deployed to provide trends over a larger area and time period and are a nationally approved monitoring technique. These tubes measure the air's concentration of nitrogen dioxide (NO₂), a toxic gas that can be very harmful to health. The tubes are replaced and analysed on a monthly basis. Research suggests that at urban roadside locations in the UK up to 80 per cent of the nitrogen dioxide measured comes from road transport.
- **Sensors:** these sensors can monitor a range of pollutants in a continuous manner like the automatic monitors, however they can have more uncertainty with regard to accuracy and these monitors have not gone through the same quality control process as our other monitors. There are also limited numbers of these monitors in the borough.

Islington's air quality sites are classified based on their location using [Defra guidance](#), but are referred to in these PFS monitoring reports using PFS terminology. This has required the addition of a further category, as will now be explained. According to Defra, "Roadside sites" are those within one to five metres of a busy road. In the PFS monitoring reports, roadside monitoring equates to boundary road sites. According to Defra, "Urban background sites" are those in an urban location but more distanced from traffic sources. For the PFS monitoring we have further split the urban background results into sites on internal roadsides and sites away from

roads. These categorisations apply to the LTN and borough wide.

The long-term sites in Islington consist of nine roadside diffusion tubes, ten background urban diffusion tubes, one automatic main road site and one automatic background urban site. One of the main road diffusion tubes was moved in 2019 and is therefore not being included in PFS monitoring using this time period. More details of these sites can be viewed in our annual report.

The air quality monitoring sites in Clerkenwell Green are listed in Appendix 3, with details about type and if they have been added as part of the PFS programme or were pre-existing. The long-term sites that are being used for comparison work in this final Clerkenwell Green report consist of three boundary road diffusion tubes and six internal road diffusion tubes. There were no non-street diffusion tubes for this area.

Methodology

Time period of study

Air quality varies naturally over time due to a variety of factors, including seasonal variations, weather and other non-transport factors. It is therefore important to look at trends over a longer period of time, for at least a year, to identify real changes in air quality due to this scheme. However, as there has not been a full year's worth of data between the pre-consultation report and final report (data is only available to July 2022 due to a lag in the review time for this), data from the ten month period between October 2021 and July 2022 has been compared against data from the same nine month period from the previous year (i.e. October 2020 and July 2021), after the scheme was implemented but before the pre-consultation counts were taken. The pollution levels in these periods, particularly Pre-Consultation, are likely to have been impacted by Covid-19. [Studies](#) into the impacts of lockdown on air pollution, by Defra, for example, show lower than average levels of the pollutant NO₂ during the first lockdown.

The ultimate goal of our air quality strategy is to reduce air pollution as much as possible, and certainly to within legal limits. As such, the newer sites will be used to monitor if air quality is at legal levels in and of itself.

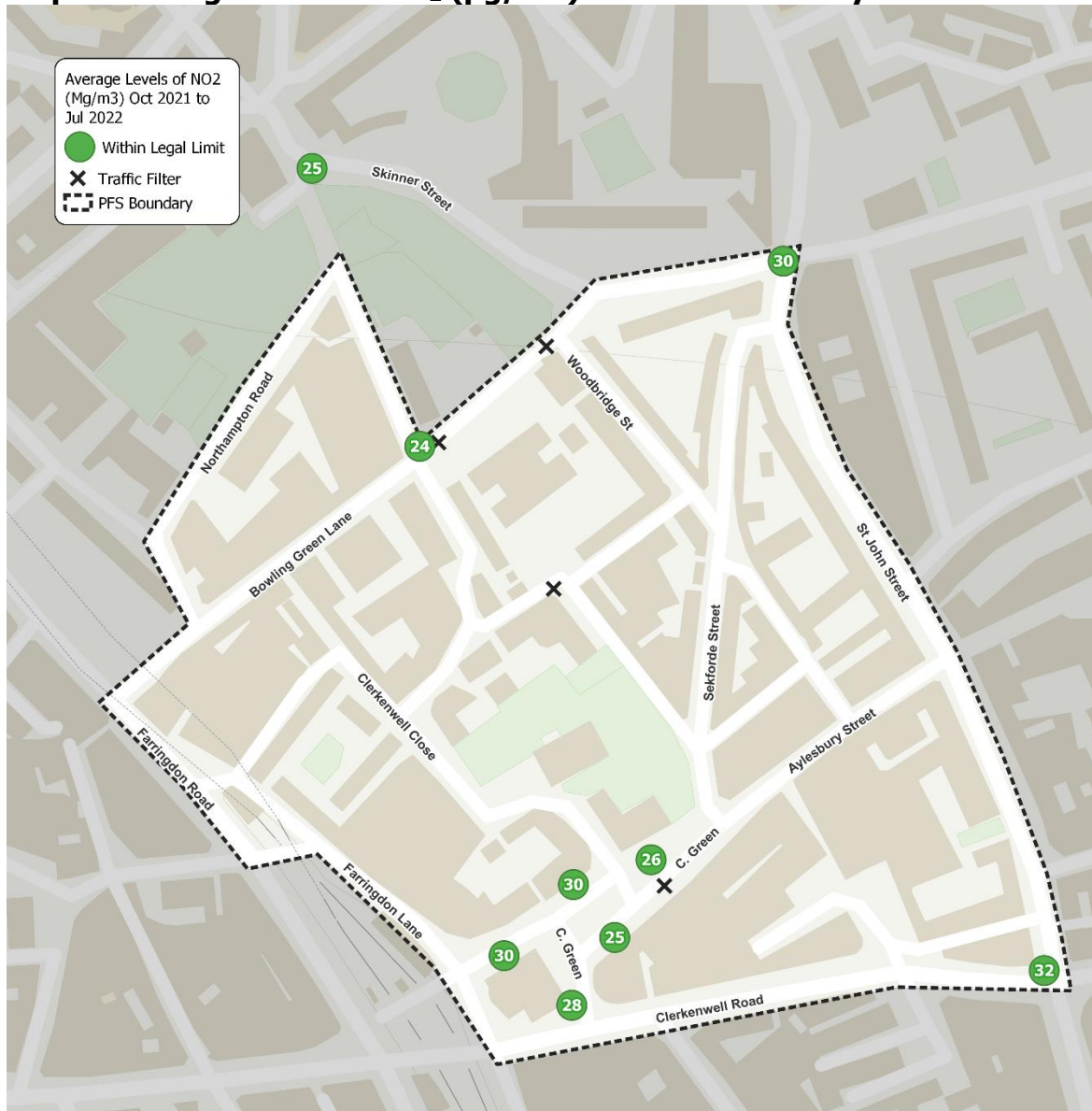
Results: Air Quality Diffusion Tubes

The results shown in this section use NO₂ data from diffusion tubes only. It was therefore not possible to provide results for PM10 for Clerkenwell Green.

Please note, the values in this section show the average results for all monitors in each category where the data is available, with figures rounded to the nearest whole number, so the differences may look different to what is expected from the NO₂ values given.

To improve accuracy levels of diffusion tubes it is necessary to bias correct the results based upon local or national collocation studies with the more accurate reference monitors. It is also necessary to calculate the data capture, and if this is less than 75%, the results should be annualised. More information on this process can be found in the council's annual air quality report. The results from 2022 have yet to be published as they require a full years' data, so the 2022 data presented here is in "raw" format and may change once the bias adjustment values are made available.

Map 3: Average levels of NO₂ (µg/m³) October 2021-July 2022



Map 4: Percentage change in NO₂ (µg/m³) between October 2020-July 2021 and October 2021-July 2022

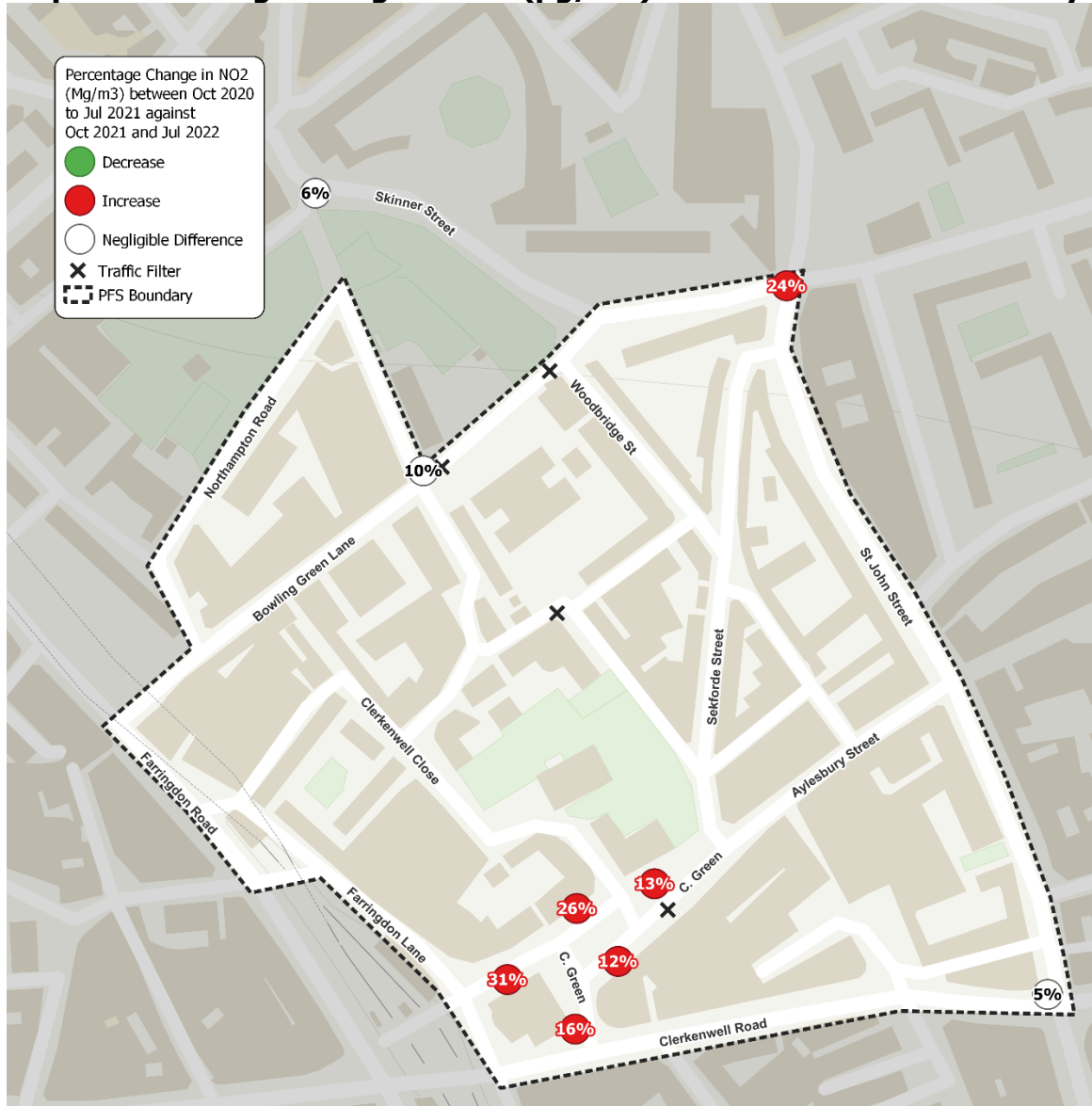


Table 12: (Boundary roads) NO₂ levels in Clerkenwell Green and borough long-term diffusion tube sites

| | Sep '20 – Jul '21 NO ₂ (µg/m ³) | Sep '21 – Jul '22 NO ₂ (µg/m ³) | Change in NO ₂ (µg/m ³) | Change in NO ₂ (% change) |
|--------------------------------------|---|---|--|---|
| Clerkenwell Green | 26 | 29 | 3 | 11% |
| Whole borough long term sites | 31 | 34 | 3 | 10% |

Table 12 provides average NO₂ levels for the three boundary road sites for Clerkenwell Green, as well as seven boundary roads spread across the remainder of the borough. In both cases, there was a roughly 10-11% increase in the levels of NO₂. Note that changes in NO₂ are based on rounded numbers and % changes are not.

Table 13: (Internal roads) NO₂ levels in Clerkenwell Green and borough long term diffusion tube sites

| | Sep '20 – Jul '21 NO ₂ (µg/m ³) | Sep '21 – Jul '22 NO ₂ (µg/m ³) | Change in NO ₂ (µg/m ³) | Change in NO ₂ (% change) |
|--------------------------------------|---|---|--|---|
| Clerkenwell Green | 23 | 27 | 4 | 18% |
| Whole borough long term sites | 21 | 24 | 3 | 13% |

For internal roads, six from Clerkenwell Green and six from the wider borough have been included in the averages in Table 13. In both cases, there have been moderate increases in NO₂ levels – of 18% for the scheme area and 13% in the background.

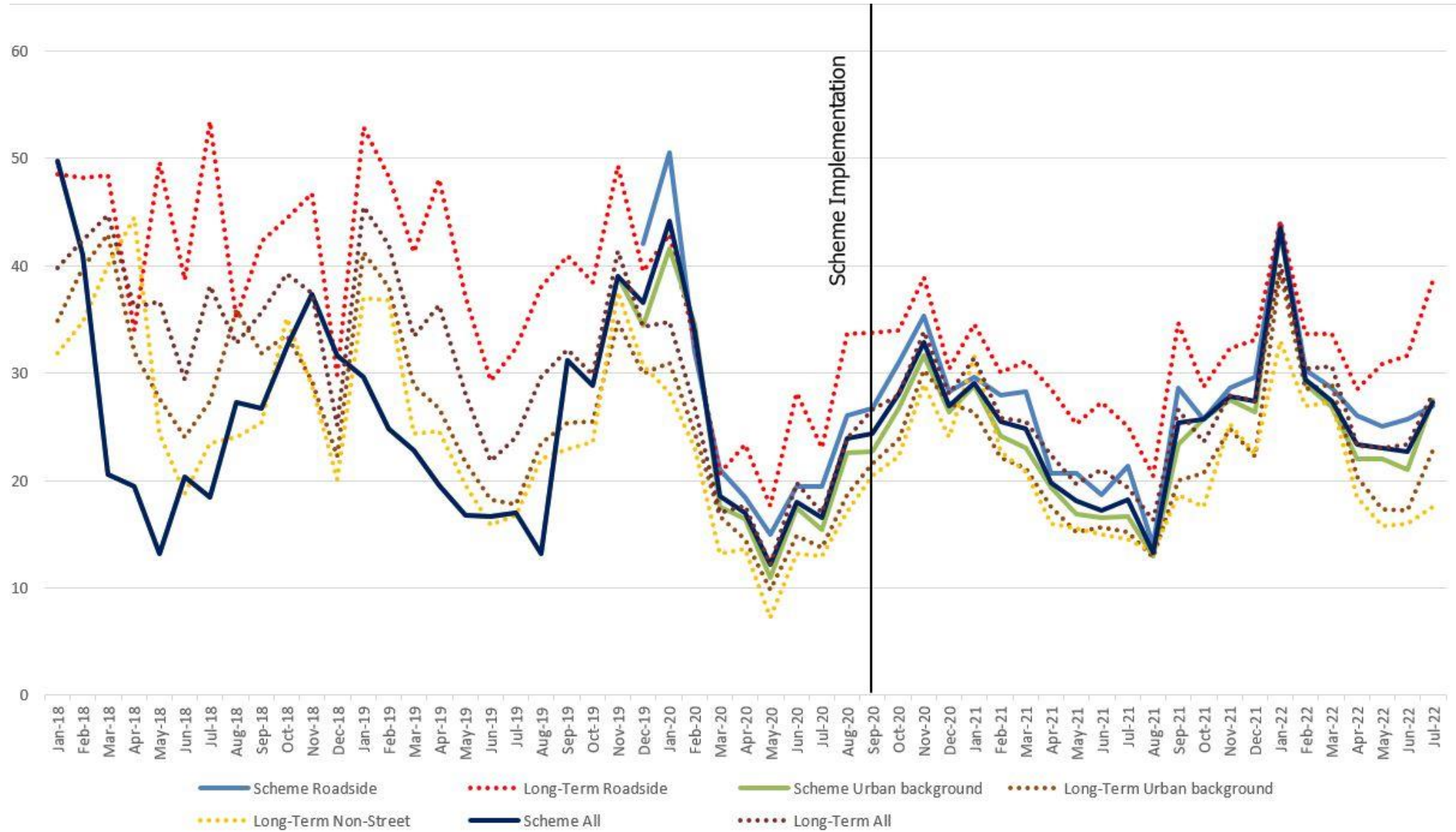
Table 14: (Overall) NO₂ levels in Clerkenwell Green and borough long term diffusion tube sites

| | Sep '20 – Jul '21 NO ₂ (µg/m ³) | Sep '21 – Jul '22 NO ₂ (µg/m ³) | Change in NO ₂ (µg/m ³) | Change in NO ₂ (% change) |
|--|---|---|--|---|
| Clerkenwell Green | 24 | 28 | 4 | 15% |
| Whole borough long term sites | 26 | 28 | 2 | 9% |

Taking the average of all sites for Clerkenwell Green and the wider Borough, there has been a 15% overall increase in scheme sites and a more limited 9% increase in whole borough sites, the latter of which is lower largely due to non-street sites, none of which exist in the scheme area.

Graph 2 compares the trends in NO₂ levels in Clerkenwell Green LTN across Boundary roads, Internal roads and Non-Street sites from January 2018 through to March 2022.

Graph 2: Average NO₂ levels in Clerkenwell Green LTN compared to long-term borough-wide sites from diffusion tubes



Insights: Air Quality

The results in Tables 12 to 14 and Graph 2, show that there has generally been a moderate increase in the concentration of NO₂ between the two periods assessed, both within Clerkenwell Green and across the borough at large.

As Graph 2 shows, despite the significant seasonality of pollution levels (higher in winter and lower in summer), the borough-wide trend of NO₂ shows a general decrease between 2018 and 2022 whilst this decrease is less prominent for data for Clerkenwell Green. It is noted that whilst in 2020 reduced traffic levels during Covid-19 would have played a notable role in delivering this decrease, motorised traffic levels were almost the same as pre-Covid levels in early 2022, yet pollution levels had not risen to pre-Covid levels.

In summary these results show:

- Overall changes in levels of NO₂ in Clerkenwell Green are slightly higher than those across the wider borough, although in 2018/2019 were lower than those seen elsewhere in the borough, indicating that there was less scope for improvement in such a city-centre location – particularly since the area was in the existing ULEZ (the remainder of the borough joined this area in October 2021).
- NO₂ levels in Clerkenwell Green have been within the annual objective level of 40µg/m³ at all sites since people-friendly streets started, including on boundary roads.
- These results generally suggest that the scheme itself has not had a significant impact on air quality to date.

Concluding Remarks

As previously noted, the goal of this report has been to assess how the scheme has been bedding in since the changes made in March 2022 – serving as a “final check” to compare pre-consultation and final data, and particularly to understand whether exemptions for Blue Badge holders have impacted the scheme’s success.

The changes that have been seen in the Clerkenwell Green scheme area should be taken in the context that this city centre LTN is very different than other schemes, which are much more residential in nature. Clerkenwell Green is situated in an area where general activity levels were significantly higher in the final monitoring period than in the pre-consultation period, namely because people were far more likely to attend offices in 2022, as well as to go to evening/weekend events that were drawing lower levels of patronage in 2021. It is also likely that the normalisation methodology was not able to capture some of these activities, as this methodology uses trends from major streets from across the entire borough.

Notwithstanding the above, overall traffic levels for Clerkenwell Green internal and boundary roads have both increased between pre-consultation and final monitoring periods. For internal roads, normalised vehicle volumes have risen by 23%, equating to an additional 629 daily vehicles traveling on local streets, whilst on boundary roads where full-week data was available, such volumes have increased by 19% (or almost 2,500 daily vehicles). Since the 2020 baseline, almost all streets have seen increases in traffic levels, with the notable exception of Bowling Green Lane, which saw a decrease of 45% in vehicle flows (-546 daily vehicles). Some of these increases may be due to increased local business activity (restaurants, shops, bars) that was more subdued in 2021, or due to the opening of the Elizabeth Line station at Farringdon, a convenient “hop-on” point for people arriving from King’s Cross/St. Pancras.

Reviewing specific vehicle classes, the only notable percentage point change was for LGVs on Sekforde Street, which became much less prevalent (-16 percentage points as a portion of total motorised vehicles). All other changes in goods vehicles and motorcycles mostly increased broadly in line with other trends for motorised vehicles.

In terms of vehicle speeds, the overall trend has generally been towards lower speeds (across all presented metrics), although with some variation between roads. No street saw an increase in vehicle speeds, and since 2020, Bowling Green Lane and Sekforde Street both saw >10% drops in both average and 85th percentile speeds.

Despite overall increases in volumes of motorised vehicles, the volume of cycles counted has continued to rise since pre-consultation counts were taken. Between September 2021 and October 2022, cycle counts were up 41% on internal roads (+559 daily cycles) and 21% up on boundary roads (+449 daily cycles). Since the 2020 baseline, the change has been of +181% for internal roads and +101% for boundary roads.

In air quality terms, there have been increases in NO₂ levels across the scheme area, although it is noted that these levels are only slightly above the trend for the wider borough across monitored locations, and that NO₂ levels for this city centre location are still within the annual objective level of 40µg/m³ at all sites since people-friendly streets started, including on boundary roads.

Overall, the scheme has seen mixed results against the stated objectives. Cycling levels on both boundary roads and internal roads increased since pre-consultation and have more than doubled since the baseline, with vehicle speeds generally falling at least slightly for both comparisons. For air quality, although NO₂ levels have increased in the study area, these are generally still in line with levels across the wider Borough.

In contrast, it is noted that levels of motorised vehicle traffic, as calculated by the standard normalisation methodology, have increased for internal as well as boundary roads since the baseline; however, is likely that at least part of this increase is due to impacts unrelated to the scheme, for example an above-average increase in commercial activity in the scheme area not captured by the normalisation, including that related to the opening of the Elizabeth Line station at Farringdon in May 2022, which may have had an impact on road journeys on the surveyed streets.

Appendices

Appendix 1: Clerkenwell Green Traffic Count Locations and Type

Islington-commissioned traffic count sites and type

| Road Type | Type |
|---|--|
| Boundary | |
| Skinner Street | ATC |
| Rosebery Avenue | ATC |
| St John Street near Great Sutton Street | ATC |
| Farringdon Lane | ATC |
| Boundary (different baseline) | |
| Clerkenwell Road | March 2019: Manual Turning Counts (0700-1000; 1600-1900) September 2021: ATC |
| Internal | |
| Bowling Green Lane | ATC |
| Woodbridge Street | ATC |
| Sekforde Street | ATC |
| Clerkenwell Green south site | ATC |
| Clerkenwell Green west site | ATC |
| Clerkenwell Close | ATC |
| Extra Roads (not shown on map or included in analysis) | |
| St John Street south of Rosebery Ave | ATC |
| St John Street near Passing Alley | ATC |
| St John Street between Cowcross St and Charterhouse St | Camera Link (0700-1000) |
| Cowcross Street | ATC |
| Spencer Street | ATC |
| Percival Street | ATC |
| Hall Street | ATC |

TfL permanent traffic sites and coordinates (all ATCs)

| Street name | Northing | Easting |
|--------------------|-----------------|----------------|
| A1 Archway | 529219 | 187254 |
| Pentonville Road | 531004 | 183093 |
| Camden Road | 529924 | 185126 |
| Caledonian Road | 530708.1 | 183517.3 |
| Clerkenwell Road | 531863 | 182129 |
| City Road | 532762 | 182386 |
| Old Street | 532668 | 182448 |
| St John Street | 531460 | 183048 |
| A1 Upper Street | 531650 | 184311 |
| Holloway Road | 531239 | 185120 |
| Canonbury Road | 531885.4 | 184353.7 |
| Southgate Road | 532956 | 184553 |

TfL also has a counter on Essex Road, which has not been included in the normalisation methodology because of incomplete data that has not been processed.

ATCs measure traffic volumes and speeds using two thin tubes that run across the street and are connected to a sensor. When wheels pass over the tubes, the pressure impact is interpreted by the sensor to identify the type of vehicle passing over, and the speed with which it passed. Inaccuracies can arise when, for example, two vehicles pass at the same time they may be counted as one, or if a car and bicycle pass at the same time, it may be read as one car. However, the same method was used before and after and the method is considered a good industry standard. They are used as a standard in monitoring transport schemes.

Radar counts monitor speeds and vehicle volumes to a less specific categorisation using a radar sensor and do not include cycles. The suppliers state their accuracy rate is 98%.

Appendix 2: Traffic Count Normalisation Methodologies

To calculate the normalised percentage differences, the September 2021 traffic count volumes have been **divided** by 0.9583 and the October 2022 traffic counts by 0.9416 to give normalised volumes. In other words, in order to account for the fact that there was (generally) less traffic on Islington streets from January 2020 onwards, we have provided adjusted figures that provide an estimate for what the traffic would have been if there had not been disruptions from broad events such as Covid-19 or the cost-of-living crisis. This allows us to analyse the impacts of the LTN scheme rather than the impacts of current events / central government policy.

To calculate the percentage change, the difference between the two has been taken and divided by the normalised baseline volume to arrive at a normalised percentage change.

The normalisation figure for each month is reached by calculating the daily average percentage difference between the 'baseline' month (pre-Covid-19 impact) and the corresponding 'impacted' month (i.e. September 2021 and October 2022) across all the permanent TfL counter sites around Islington, and taking an average difference for the whole month.

Appendix 3: Air Quality Monitoring

We have been monitoring air quality since 2000 and have 21 long term monitoring sites across the borough. We also have additional monitoring in place for specific projects and have been monitoring air quality outside every school in the borough since 2018. As such, there is significant long-term air quality data collection across the borough, which will be used in the normalisation process. It also means there is existing air quality monitoring within the Clerkenwell Green trial area, though some monitoring equipment has been added to expand the air quality monitoring in and around an area.

The air quality monitoring sites in the Clerkenwell Green area are listed below, with details about type and if they have been added as part of the PFS programme, or were pre-existing.

Clerkenwell Green air quality monitoring sites type, period of installation and additional Rosebery Avenue monitor

| Locations | PFS road type | Monitoring type | Installation | Site Type by DEFRA classification* |
|---|----------------------|------------------------|------------------------------------|---|
| Clerkenwell Road/St John Street (OC3) | Boundary | Diffusion tube | Pre-existing (since December 2019) | Roadside |
| St John Street (OC2) | Boundary | Diffusion tube | Pre-existing (since December 2019) | Roadside |
| Skinner Street/Rosoman Place (PF7) | Boundary | Diffusion tube | New (since August 2020) | Roadside |
| Clerkenwell Green (C1-5) | Internal | Diffusion tube | Pre-existing (since 2018) | Background urban |
| Northampton Road/Corporation Row (PF8) | Internal | Diffusion tube | New (since August 2020) | Background urban |

Islington's air quality team classify sites using [Defra guidance](#) based on their location. Roadside sites are those within one to five metres of a busy road, while urban background sites are those in an urban location but more distanced from sources and therefore more representative of wider background conditions.

Data quality control

As a council we are legally obliged to monitor air quality and report on this every year. To ensure data is as accurate as possible we follow national guidance for monitoring air quality, in terms of deployment and results analysis. For example: use of accredited monitors, personnel and laboratories or correction of diffusion tube data based on annual comparisons to automatic monitors. More information on this process can be found in our [annual reports](#).

The data used in this analysis will follow these rules as much as possible, especially with regards to monitor deployment. However, it will not have fully gone through this process, especially with regards to normal end of year analysis processes for 2022, and should therefore be treated as provisional.

The 2018-2021 data in this report has been adjusted using a correction factor. Adjusting data in this way is standard practice in making air quality data as accurate as possible, more information on this process can be found in our annual air quality [reports](#) The data for 2022 is still raw as a bias correction factor has not yet been calculated. For time periods where less than 75% of data was captured the data has been “annualised”, meaning it has been adjusted by comparing it to monitors that had data for the whole period. More information can be found on this process in the annual air quality report.

Insights background

Pollution levels are impacted by a range of local and wider sources. For example, the [source apportionment study](#) conducted for Islington in 2015 found only 3% of London’s NO₂ emissions came from inside Islington. Therefore, it can be very hard to pick up on local changes caused by schemes such as people-friendly streets.

Pollution also varies significantly over time due to a range of external factors (such as weather) for which this study has not corrected. Therefore, ideally, a longer period of study would be required to analyse these results more fully. This would also allow further quality control of data that has not been possible with these results. There is also further uncertainty in recent results and whether these will represent longer term trends due to Covid-19. Studies of the first lockdown in March, for example by the [Greater London Authority](#), show a decrease in overall motorised traffic and NO₂ levels but no consistent change in PM due to weather impacts.

Appendix 4: SYSTRA Statement

SYSTRA has been commissioned to prepare this report in partnership with the London Borough of Islington.

SYSTRA is a global leader in mass transportation and mobility, employing over 7,000 global employees across 80 countries. SYSTRA has the unique advantage of being not only a Transport Consultancy, but also Social and Market Research Consultancy. Their team members have an in-depth understanding of both the transport sector and of social and market research techniques, providing expert support in monitoring and evaluation both direct to clients and also in a peer review capacity. They provide a wealth of experience in conducting both qualitative and quantitative transport research with stakeholders to help understand their priorities and to inform options for future investment and policy development.

Neither SYSTRA nor LB Islington can be held accountable for errors in the data provided by third parties, where these errors have not been identified through normal checking processes.

Appendix 5: Individual Site Volumes & Speeds

The following section provides detail for each monitored site including a breakdown of flows and speeds by monitoring period and by vehicle class.

It should be noted that the data presented in this appendix is drawn directly from raw data provided to LB Islington and SYSTRA, rather than summary reports produced by the relevant survey companies. Using the raw data has allowed a further set of checks to be conducted on the data to ensure there are no gaps or anomalies in the datasets (which often happens if vehicles park on the traffic counter, or in the case of a local traffic collision). As such, in several cases, missing data has been infilled with data from a similar period to ensure that blank periods do not cause misrepresentations in the data – therefore, it is likely there are some deviations from that data which was presented in previous reports.

It is noted that a range of additional sites further away from the scheme area were also monitored with regards to vehicle flows – these are presented in the appendix only. Conversely, as Clerkenwell Road only presents data for AM/PM peaks, this data is not included in the appendix as all comparable data is in the report body above.