Contents

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:

85th Percentile Speed – The 85th percentile is used in transport monitoring to gauge changes in speeds and speeding behaviour. It is the speed at which 85% of traffic will be travelling at, or below, along a street (15% of traffic will be travelling faster than this speed). For example, if the 85th percentile speed is 20mph, then 85% of vehicles will be travelling at 20mph or less.

AM peak – In this report "AM peak" refers to the hours between 07:00h and 10:00h.

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 extremely reliable. (See Appendix 1 for more details).

Boundary Roads – For the purpose of this report, the "boundary roads" of the Amwell trial area are Claremont Square/Amwell Street to the east, Rosebery Avenue (A401) to the south, King's Cross Road/Farringdon Road (A201) to the west and Pentonville Road (A501) to the north. It is noted that the data collection site referred to in the report as Rosebery Avenue (Southern Site) is the site located on the cell boundary, whilst another site labelled Rosebery Avenue (Northern Site) lies beyond this boundary and is reported on separately. Whilst Rosebery Avenue south forms the southern low traffic neighbourhood (LTN) boundary, it should be noted that the traffic filter in the one-way Margery Street to its north did not became operational until 27 September 2021. These roads may also have been affected by the redevelopment project at Old Street Roundabout, which may have impacted some of the traffic flows. 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 Amwell 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 Amwell area. In addition to the original PFS traffic filters, the Margery Street traffic filter has become operational in September 2021.

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 an 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 Amwell people-friendly streets (PFS) trial refers to an LTN implemented in Islington under an Experimental Traffic Order. The position of the traffic filters means that drivers (including residents, deliveries 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 on traffic patterns. This methodology is explained later in the report in more detail, but in simple terms it means that the traffic count figures have been increased to project what the traffic counts after March 2020 may have looked like if traffic levels were at 2019/early 2020 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.

Patched Sites/Data – When counting equipment is damaged, leading to a loss of data for certain time periods, this data is patched. This means that periods of missing data are backfilled using data from the same day either a week before or after when the counts were taking to ensure that the data is representative of that day. If this data is not available, another day of the same type, either weekday or weekend-day, is used.

PM peak – In this report "PM peak" refers to the hours between 16:00h and 19:00h.

Radar Traffic Counters – Radar counts monitor speeds and vehicle volumes to a less specific categorisation using a radar sensor. These radar counts classify pedal cycles and motorcycles in the same class (<5.6m). As such, for radar assessed sites, the motorised traffic volumes do not include motorcycles, and pedal cycle volumes are unavailable. Radars measure traffic volumes and speed using high frequency radar signals to measure one or two lanes of traffic. Manufacturers consider the method to be 98% accurate (with 95% confidence) at measuring traffic volumes with speed considered to be around +/- 2mph or 3% whichever is greater with 95%

confidence. Radars detect vehicle lengths (+/- 40cm or 5%, whichever is greater, with 95% confidence) so assumptions need to be made with regards to vehicle classes. Inaccuracies in the data can occur due to vehicles following closely resulting in larger lengths being detected. Radars are widely used for monitoring traffic schemes due to their discrete nature. Being less detectable by drivers, radar surveys are less likely to change speeding behaviours. Radars are used to monitor traffic on TfL managed roads, on the strategic road network.

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 the filter (and use non-motorised scooters).

Introduction – Amwell LTN Final Report

As part of Islington Council's PFS programme and the need for an urgent transport response to COVID-19, the Amwell LTN became the fourth PFS trial area in the borough. The LTN has been created with the aim of allowing 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 cleaner, greener and healthier for residents.

Since the scheme's inception, monitoring reports have been produced at different intervals 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 Pre-Consultation monitoring report was published in December 2021, comparing pre-implementation "baseline" data with data roughly one year after the scheme went live. Following this, a public consultation was held between 15 December 2021 and 30 January 2022. In April 2022, exemptions for Blue Badge holders were implemented in the Amwell LTN.

Final Report

Unlike previous reports, which were aimed at determining the impact of the LTN scheme compared to a pre-implementation baseline, the purpose of this Final Report for the Amwell LTN is to serve as a **"final check"** on the scheme since the pre-consultation stage of data collection, prior to a decision on whether to make the scheme permanent. The report will look to understand how the scheme is bedding in following the implementation of the exemption policy for local Blue Badge holders and the changes made at filters, 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 October 2021 (referred to as the "pre-consultation traffic counts") and final report data collected mostly in May 2023 (referred to as the "final traffic counts'")**, with conclusions largely focused on this comparison. The September 2020 pre-implementation baseline (for roads that were also monitored in May 2023) is included for reference, for the key tables showing total motorised vehicles and cycles, as well as for vehicle speeds. Full details from this phase of data collection can be found in the appendices.

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

Scheme Context

Initial PFS Scheme - In November 2020, traffic filters at three of four planned locations in the Amwell LTN became operational. The filter locations were: on Great Percy Street, between the junctions with Cumberland Gardens, and Holford Street, on Lloyd Square (south side), and on Lloyd Square (north side). The traffic filters (with the exception of that at Lloyd Square's north side) were camera-enforced to allow emergency vehicle access, and local buses in the case of the Great Percy Street filter. Lloyd Square (north side) was a physical filter using a lockable bollard, to allow access for the London Fire Brigade.

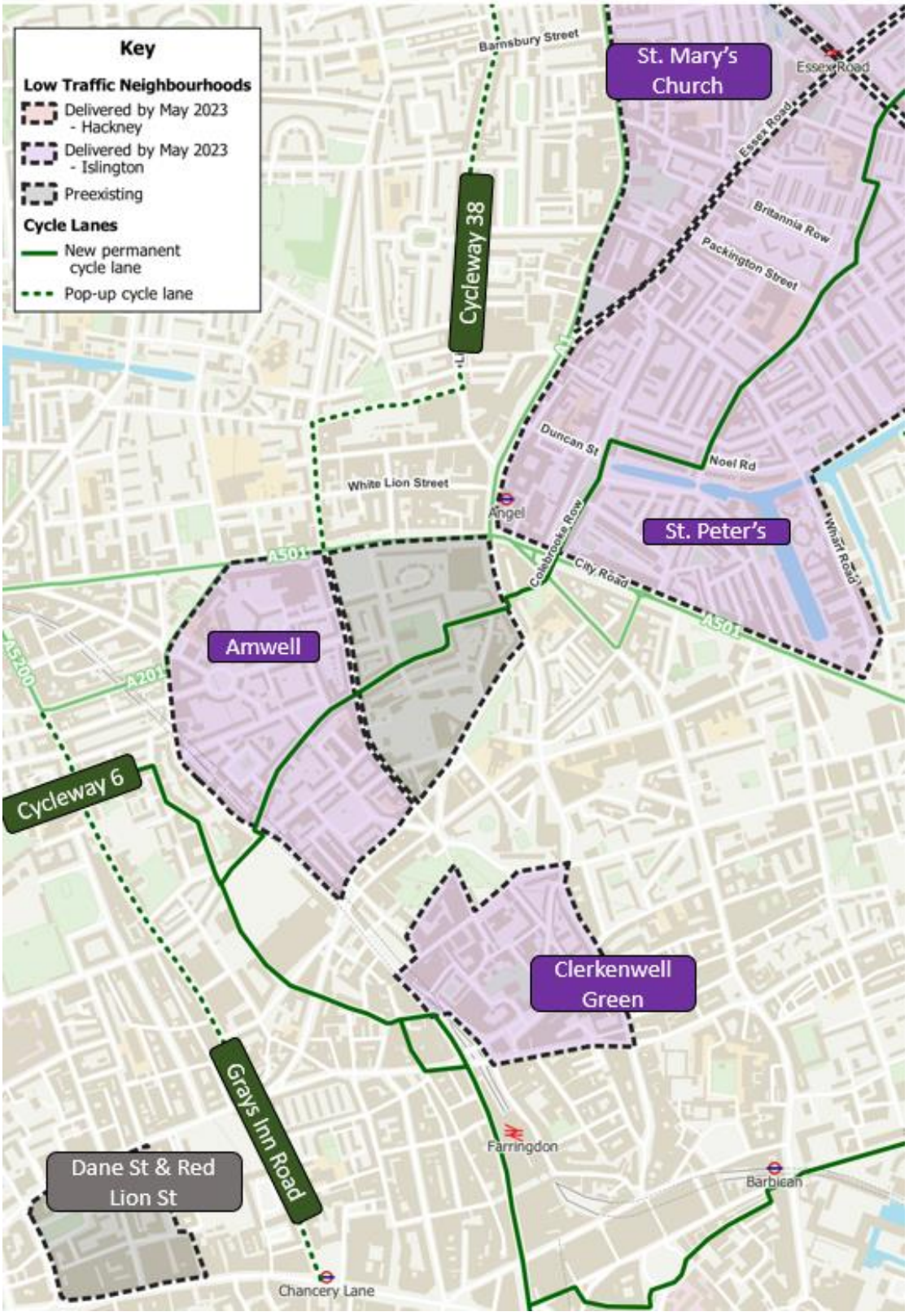
Other changes introduced to the area as part of the Amwell LTN included: removal of existing width restriction on Great Percy Street to allow delivery vehicles access to service the area; removal of existing width restriction on Lloyd Baker Street to allow delivery vehicles access to service the area; and change to two-way traffic flow of the section of Lloyd Baker Street between Lloyd Square's western arm and Amwell Street.

Margery Street filter activation - The fourth filter on Margery Street, located west of the junction with Wilmington Street, was activated on 27 September 2021. The filter is at the existing pedestrian zebra crossing on Margery Street with a forced left turn into Wilmington Street, maintaining access for local residents living or parking west of the traffic filter on Margery Street, visitors, taxis and deliveries and a through route for emergency services.

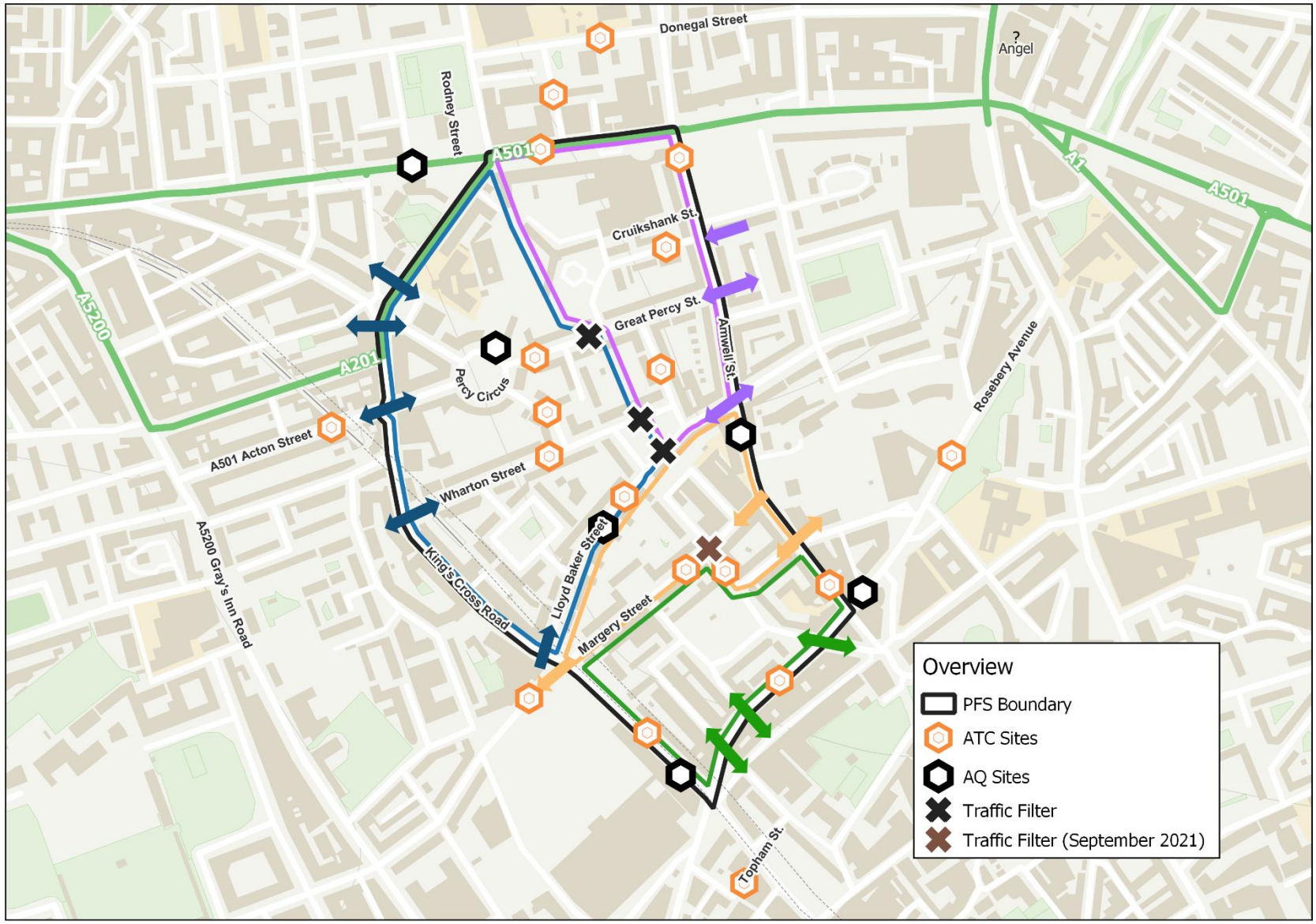
Continuation of the trial- In April 2022, the Amwell LTN trial was restarted under a new ETO to enable Blue Badge holders with an AMW permit to pass through the camera enforced filters. Due to repeated unauthorised removal of the lockable bollard at the Lloyd Square (north side) filter, it was changed to a camera enforced filter as part of the new trial. It subsequently transpired that installing a camera post was not feasible due to physical constraints encountered at a number of potential sites identified.

The locations of these filters and the boundary roads make Amwell one of the smaller LTNs implemented by the council under the people-friendly streets programme.

Map 1 : Amwell LTN in Wider Context of Nearby LTNs and Cycle Lanes



Map 2: Amwell LTN Measures and Monitoring Sites



Pre-Consultation Monitoring Outcomes

As noted above, all final report data is compared against pre-consultation report data from October 2021. However, it is important to note that the Amwell LTN had already resulted in changes at the pre-consultation data collection point. These are summarised below:

- The pre-consultation monitoring report showed a reduction in motorised traffic and speeding across internal roads (during comparable periods), thereby making local roads safer, cleaner, and healthier for residents.

- On internal roads, a considerable decrease in traffic levels was seen on Great Percy Street (-80% or 709 fewer vehicles per day), Lloyd Baker Street (-71% or 839 fewer vehicles per day) and Margery Street (-63% or 773 fewer vehicles per day). In contrast, more moderate increases were seen on Prideaux Place (+97% or +204 daily vehicles) and Wharton Street (+17% or +84 daily vehicles). This may be partially due to the unauthorised removal of the traffic bollard from the traffic filter at Lloyd Square (north side). Cycling levels on internal roads have increased significantly, most notably on Margery Street, which is part of the Cycleway 27.

- On the boundary roads, changes were generally moderate, with an overall 5% negligible increase in flows. Farringdon Road did see a 30% increase in daily vehicles (+2,490 per day), whilst Rosebery Avenue (Southern Site) saw a 5% decrease in flows (-794 per day). There were also decreases in flows on Claremont Street and Amwell Street, although it is noted that these counts may have been impacted by emergency utilities works in the area. This potentially points to a redistribution of traffic on the north-south boundary roads of the LTN, contributing to the increase on Farringdon Road while the works were ongoing.

- There was no significant impact on anti-social behaviour and crime rates and London Fire Brigade response times.

- The trial did not have an adverse impact on air quality to date, as nitrogen dioxide levels rose slightly, but remained below the national annual objective and slightly better than borough trends following the lifting of COVID-19 measures and ensuing increase in activity.

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 October 2021 (which underpinned the Pre-Consultation report) with those in May 2023.

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.

Pre-consultation counts were taken roughly one year after implementation, in October 2021. These can be found in the LB Islington report *Amwell People-Friendly Streets Trial – Pre-Consultation Monitoring Report*, as can data for the pre-implementation baseline counts.

Completed Dates of Traffic Counts

Baseline ("before") counts: 14 – 21 September 2020

Amwell trial becomes operational: 23 November 2020

Pre-Consultation ("after") counts: 2 – 8 October 2021, (with some sites patched with data from 9 – 10 October 2021).

Final counts: 12 – 18 May 2023 (Original counts), 26 May – 1 June (Re-counts for five sites, bank holiday patched)

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 with mitigating actions, if required.

Automatic Traffic Counts (ATCs) are used at most of the sites monitored for the Amwell LTN. ATCs measure motorised and cycle traffic volumes and motorised traffic speeds and classify the traffic by type. Transport for London (TfL) requires the use of radar counts on the Transport for London Road Network (TLRN), which measure motorised traffic volumes and speeds. Radar counts have been used at four sites on the Transport for London Road Network (Farringdon Road and Pentonville Road in Islington, and Acton Street and Swinton Street in Camden). Radar counts monitor speeds and vehicle volumes to a less specific categorisation than ATCs using a radar sensor. The radar counts supplied for this scheme classify pedal cycles and motorcycles in the same class. As such, for radar assessed sites, the

motorised traffic volumes do not include motorcycles, and pedal cycle volumes are unavailable.

More information about the different types of counts and which type was used at each site is detailed in Appendix 6.

Analysis and Normalisation Methodology Overview

The monitoring programme for Islington's LTN schemes was designed in full awareness of the disruption caused by the COVID-19 travel restrictions and other wide-scale traffic impacts (cost-of-living crisis, rail strikes etc.), and the need for a process to interpret the results in a way that accounts for these disruptions.

To this end, a normalisation methodology was developed to adjust traffic data to "pre-COVID" levels, which has been used to calculate **"normalised vs. normalised"** comparisons in this report. Daily volumes of motorised traffic have been drawn from a range of 12 permanent traffic counters managed by Transport for London (TfL) across Islington and used to establish monthly averages in 2019 and pre-COVID 2020[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[2]. It is noted that 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. Most narrative in this report is focused on "normalised vs. normalised" comparisons.

Using the months of the Amwell counts, in October 2021 motorised traffic was approximately 4.9% lower than in October 2019 and in May 2023 motorised traffic was approximately 16.3% lower than in May 2019.

This report also presents **"observed vs. normalised"** percentage differences. This is because normalisation was originally intended to show a picture of what traffic flows would look like without the direct impacts of Covid-19. However, by the time the final monitoring counts were taken in late May 2023, the effects of the pandemic had worked through resulting in a "new network normal". This is exemplified by Transport for London (TfL) having resumed its normal practice of re-benchmarking the road network each year from April 2023 after using the 2019-2020 baseline for the three years following the start of the Covid-19 pandemic. Against this backdrop, the normalised vs. observed comparisons attempt to remove the impact of specific Covid-19 restrictions whilst reflecting other impacts such as working from home, the cost-of-living crisis, and lower background traffic from the ultra-low emissions zone (ULEZ) or other LTNs.

Finally, an **"observed vs. observed"** metric is presented as a representation of the volume of vehicles actually counted on-street.

[1] The locations of these counters are detailed in Appendix 1.
[2] Details of methodology calculations are set out in greater detail in Appendix 2

Table 1: Normalisation factors for 2020 to 2023 traffic in Islington

Month (2020-2021)	**Impact**	**Month** (2022-2023)	**Impact**
Mar-20	-27.97%	Jan-22	-4.98%
Apr-20	-49.87%	Feb-22	-2.20%
May-20	-38.34%	Mar-22	-15.85%
Jun-20	-22.10%	Apr-22	-14.35%
Jul-20	-13.46%	May-22	-11.92%
Aug-20	-6.55%	Jun-22	-8.10%
Sep-20	-6.90%	Jul-22	-6.86%
Oct-20	-10.48%	Aug-22	-6.72%
Nov-20	-22.13%	Sep-22	-5.91%
Dec-20	-16.11%	Oct-22	-5.61%
Jan-21	-25.69%	Nov-22	-7.84%
Feb-21	-24.84%	Dec-22	-5.90%
Mar-21	-31.28%	Jan-23	-5.42%
Apr-21	-22.52%	Feb-23	-4.77%
May-21	-18.68%	Mar-23	-18.95%
Jun-21	-8.90%	Apr-23	-18.73%
Jul-21	-6.16%	May-23	-16.31%
Aug-21	-2.59%	Jun-23	-9.88%
Sep-21	-4.17%		
Oct-21	-4.90%		
Nov-21	-5.85%		
Dec-21	-6.83%		

Interpreting Count Results

Unless specified otherwise, the 7-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 that 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 seven main external factors which could be influencing results, as follows:

COVID-19 Impacts – Throughout the survey periods for the Amwell LTN, there have been a range of different impacts from COVID-19 and accompanying national and local restrictions.

Pre-consultation counts were taken in October 2021, which was between phases of the COVID pandemic (before the arrival of Omicron in the winter of the 2021) but still during a period where mask-wearing was required on public transport and many residents were working entirely from home.

In comparison, final counts were taken in May 2023, when all COVID-related measures had been removed for over a year, and most people living and working in the scheme area had established new working patterns (including hybrid work requiring no commute for many individuals).

For context, the baseline counts in September 2020 also took place between phases of the COVID pandemic, directly after August 2020 (during which the "Eat Out to Help Out" scheme was active) and before case rates increased before the lockdown of November 2020.

Clerkenwell Road Closures – Clerkenwell Road and Farringdon Lane were impacted by a range of closures between 3 April and 21 July 2023 due to Cadent Gas works. During final monitoring counts in May, the section of Clerkenwell Road between St. John Street and Goswell Road was closed to westbound traffic and the bottom of Farringdon Lane (between Clerkenwell Road and Clerkenwell Green) was closed with diversions possible via Percival Street, Skinner Street and Rosebery Avenue (the latter being a boundary road for the Amwell LTN).

Cost of Living Crisis – By May 2023, 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 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. In relation to the cost-of-living crisis, a significant number of rail strikes were held throughout 2022 and 2023 – whilst care was taken to avoid strike dates in data collection, it is possible that a general reluctance to rely on rail services may have impacted travel behaviour and mode choice. It is expected that the normalisation of data will somewhat account for these impacts.

Nearby Low Traffic Neighbourhoods –The Amwell LTN is in close proximity to the Clerkenwell Green LTN and public realm transformation project on which construction began in February 2023. It is therefore not possible to separate out the impact that the Clerkenwell Green scheme may also be having on the Amwell area, particularly on Rosebery Avenue, which lies between the two schemes. Moreover, the areas to the east of Amwell Street and the south of Margery Street are historic low traffic neighbourhoods; Cycleway 27 also runs through the Amwell LTN area along Margery Street (see Map 1 for details).

Nearby Major Traffic Projects – It transpired that during the period of the pre-consultation counts Thames Water was carrying out unexpected utilities works on Amwell Street, at the junction of Hardwick Street and Merlin Street, with temporary traffic lights in

operation. The council had programmed the counts to take place following completion of planned utilities works on Amwell Street and prior to planned utilities works on Margery Steet, however the Amwell Street works were subsequently extended into the count period at short notice following excavation at the location during the planned works.

Construction work at Charles Simmons House at the corner of Margery Street and Lloyd Baker Street during pre-consultation counts may have had a minor impact on traffic movements on streets within the Amwell LTN and surrounding roads including King's Cross Road and Farringdon Road.

In close proximity to the Amwell LTN, Transport for London (TfL) has implemented a major project at Old Street roundabout, which took place during the trial period. It is not possible to separate out or control for the impact of the Old Street roundabout works on the boundary roads from the impact of the low traffic neighbourhood.

Euston Road had lane closures during the Amwell trial period due to TfL's Streetspace cycle lanes and HS2 works – the reduced capacity may have affected traffic patterns on roads in the vicinity of the Amwell LTN, including King's Cross Road/ Farringdon Road, Gray's Inn Road and Pentonville Road which is a continuation of Euston Road and is a boundary of the Amwell LTN.

Camden Council has implemented cycle track improvements on Gray's Inn Road during the Amwell PFS trial period which are parallel to Gray's Inn Road, and which form the western boundary of the Amwell LTN. Camden monitoring from November 2021 - January 2022 (collected through 24-hour traffic sensors) showed that traffic decreased significantly on Gray's Inn Road (South) compared to 2019 levels (before the works began). It is likely that some of this traffic on Gray's Inn Road shifted to Farringdon Road, a major nearby north/south route.**Unauthorised Removal of Bollards/Lack of Filter Enforcement –** the lockable bollard on Lloyd Square (north side) had been repeatedly removed without the permission of the council and, due to a supply issue, was missing at the time of the pre-consultation traffic counts. The filter was also not actively enforced at the time of the May 2023 counts as outlined in the scheme context section. This is likely to have contributed to increased traffic levels on some internal roads including Wharton Street and Prideaux Place.

Weather – Weather can have a significant impact on travel choices, especially cycling, and air pollution. In October 2021, during the pre-consultation counts, the average high temperature was 16ºC and low was 10ºC, whilst for the final counts in May 2023 the average high temperature was slightly warmer at 18ºC with the same low of 10ºC. Both of these metrics are slightly cooler than during the September 2020 baseline, when the high temperature was 21ºC and low was 13ºC.

ULEZ Extension – On 25th 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% 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.

Data Patching

For this report, data was processed using SYSTRA's proprietary automated data processing tools, which draw together raw data from all reporting periods and apply formulae-based calculations to produce the following charts and tables and appendices. However, as it is not uncommon for there to be problems with data surveys (broken equipment, cars parked on ATC bands etc.) as well as anomalous readings from surveys resulting from one-off events (waterworks, gas leaks, accidents etc.), all data has been thoroughly checked by hand and cleaned/"patched" (i.e. blank data or significantly anomalous data has been substituted by more representative data from the site/wave in question), which is a necessary task in order to maintain comparable data.

Traffic Count Notes

As a result of the above external factors and/or the need for data patching, it was considered that several sites across both internal and external streets were not comparable with others and should therefore not form part of the internal/boundary road totals and averages. These are outlined as follows:

Amwell Street and Claremont Square – At the start of October 2021, Thames Water were carrying out works on Amwell Street to the south of the junction with Merlin Street and Hardwick Street. These works were carried out on an emergency basis, so were not accounted for when the traffic counts were scheduled. Traffic lights were in operation at the junction, which may have caused additional congestion in the area. It is likely that some traffic may have been taking alternative routes to avoid Amwell Street, resulting in reduced traffic volumes on this road at the time of the pre-consultation counts. It may also have resulted in reduced traffic where Amwell Street joins Claremont Square to the north. Due to these issues unrelated to the scheme, Amwell Street and Claremont Square have been presented separately from other boundary roads in the report.

Cruikshank Street and Topham Street – There was no data collected from these two streets at the time of the baseline counts. As

such, these streets have only used pre-consultation and final round data for comparisons.

Lloyd Street – Data from Lloyd Street was reviewed, and it was found that only two days of baseline data was of sufficient quality to use in wave-by-wave comparisons in this report. In previous reports, four days of data were used (as there was no data for Friday/Saturday/Sunday), but further investigation found both Wednesday and Thursday data to be significantly supressed as well. All waves of data therefore take averages of just Monday and Tuesday data.

Swinton Street – It is also noted that both baseline and pre-consultation data for Swinton Street, which was included in the pre-consultation report, is not considered by SYSTRA to be of sufficient quality to include in this report. In both the noted datasets, overnight data on both weekdays and weekends was not captured and could not be adequately patched due to the lack of comparable data.

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.

Table 2 on the overleaf presents the percentage change in motorised vehicle volumes between the pre-consultation data collection period in 2021 and the final data collection period in 2023. 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, which outlines the observed and normalised figures for both the pre-consultation and final counts, as well as for the baseline, as in some cases a large percentage increase in this report represents a small nominal "bounce back" of traffic compared to the baseline.

Table 2: Motorised Traffic Volumes on Internal Roads

	Baseline Observed: Sep-20	Baseline Normalised: Sep-20	Pre-Consultation Observed: Oct-21	Pre-Consultation Normalised: Oct-21	Final Observed: May-23	Final Normalised: May-23
Great Percy Street	829	891	173	181	175	209
Lloyd Baker Street	1,098	1,180	324	340	237	284
Margery Street	1,136	1,220	425	447	357	428
Prideaux Place	198	211	395	416	531	635
Wharton Street	478	514	559	590	618	739
Wilmington Street	197	211	212	222	223	265
Total Internal	**3,936**	**4,227**	**2,088**	**2,196**	**2,141**	**2,560**
Lloyd Street*	1,559	1,672	117	123	208	247
Cruikshank Street**	New Site		138	144	138	165

	Difference Final Observed vs. Pre-consultation Observed	Difference Final Normalised vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Observed (%)	Difference Final Normalised vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Baseline Observed (%)	Difference Final Normalised vs. Baseline Normalised (%)	Difference Final Observed vs. Baseline Normalised (%)
Great Percy Street	2	28	-6	1%	**15%**	-3%	**-79%**	**-77%**	**-80%**
Lloyd Baker Street	-87	-56	-103	**-27%**	**-16%**	**-30%**	**-78%**	**-76%**	**-80%**
Margery Street	-68	-19	-90	**-16%**	-4%	**-20%**	**-69%**	**-65%**	**-71%**
Prideaux Place	136	219	115	**34%**	**53%**	**28%**	**168%**	**201%**	**152%**
Wharton Street	59	149	28	**11%**	**25%**	5%	**29%**	**44%**	**20%**
Wilmington Street	11	43	1	5%	**19%**	0%	**13%**	**26%**	6%
Total Internal	**53**	**364**	**-55**	**3%**	**17%**	**-3%**	**-46%**	**-39%**	**-49%**
Lloyd Street*	91	124	85	**78%**	**101%**	**69%**	**-87%**	**-85%**	**-88%**
Cruikshank Street**	0	21	-6	0%	**15%**	-4%	New Site		

*Due to poor data in the baseline for Lloyd Street from Wednesday to Sunday, only a two-day average of Monday/Tuesday data is presented across all periods

** No baseline data collected in September 2020 for Cruikshank Street

Table 3: Motorised Traffic Volumes on Boundary Roads

	Baseline Observed: Sep-20	Baseline Normalised: Sep-20	Pre-Consultation Observed: Oct-21	Pre-Consultation Normalised: Oct-21	Final Observed: May-23	Final Normalised: May-23
Farringdon Road	7,755	8,329	10,484	11,024	13,120	15,677
Pentonville Road	24,372	26,178	25,759	27,087	28,550	34,113
Rosebery Avenue (Southern Site)	13,624	14,633	13,176	13,855	14,622	17,473
Total Boundary	**45,751**	**49,140**	**49,419**	**51,966**	**56,292**	**67,263**

	Difference Final Observed vs. Pre-consultation Observed	Difference Final Normalised vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Observed (%)	Difference Final Normalised vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Baseline Observed (%)	Difference Final Normalised vs. Baseline Normalised (%)	Difference Final Observed vs. Baseline Normalised (%)
Farringdon Road	2,636	4,653	2,096	**25%**	**42%**	**19%**	**69%**	**88%**	**58%**
Pentonville Road	2,791	7,026	1,463	**11%**	**26%**	5%	**17%**	**30%**	9%
Rosebery Avenue (Southern Site)	1,446	3,618	767	**11%**	**26%**	6%	7%	**19%**	0%
Total Boundary	**6,873**	**15,297**	**4,326**	**14%**	**29%**	**8%**	**23%**	**37%**	**15%**

Table 4: Motorised Traffic Volumes on Boundary Roads with Impacted Data

	Baseline Observed: Sep-20	Baseline Normalised: Sep-20	Pre-Consultation Observed: Oct-21	Pre-Consultation Normalised: Oct-21	Final Observed: May-23	Final Normalised: May-23
Amwell Street*	4,612	4,954	2,057	2,164	5,199	6,212
Claremont Square*	5,637	6,055	4,015	4,222	5,216	6,233

	Difference Final Observed vs. Pre-consultation Observed	Difference Final Normalised vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Observed (%)	Difference Final Normalised vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Baseline Observed (%)	Difference Final Normalised vs. Baseline Normalised (%)	Difference Final Observed vs. Baseline Normalised (%)
Amwell Street*	3,142	4,048	3,035	**153%**	**187%**	**140%**	**13%**	**25%**	5%
Claremont Square*	1,201	2,011	994	**30%**	**48%**	**24%**	-7%	3%	**-14%**

*Amwell Street and Claremont Square are shown in a separate table from other boundary roads because the sites were affected by Thames Water undertaking emergency repairs during the pre-consultation counts in October 2021. It is likely that some traffic may have been taking alternative routes to avoid Amwell Street, resulting in reduced traffic volumes on these roads during the pre-consultation counts. More information is available in the Traffic Count Notes section of this report.

Table 5: Motorised Traffic Volumes on Local Roads Beyond the Boundary

	Baseline Observed: Sep-20	Baseline Normalised: Sep-20	Pre-Consultation Observed: Oct-21	Pre-Consultation Normalised: Oct-21	Final Observed: May-23	Final Normalised: May-23
Cynthia Street	1,964	2,110	1,012	1,064	1,094	1,307
Donegal Street	2,974	3,196	3,646	3,833	3,856	4,607
Topham Street*	New Site		406	427	442	528

	Difference Final Observed vs. Pre-consultation Observed	Difference Final Normalised vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Observed (%)	Difference Final Normalised vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Baseline Observed (%)	Difference Final Normalised vs. Baseline Normalised (%)	Difference Final Observed vs. Baseline Normalised (%)
Cynthia Street	82	243	30	8%	**23%**	3%	**-44%**	**-38%**	**-48%**
Donegal Street	210	774	23	6%	**20%**	1%	**30%**	**44%**	**21%**
Topham Street*	36	101	15	9%	**24%**	4%	New Site		

*First round data for Topham Street was done so under different conditions than for other internal streets, and so has not been included in this report.

Table 6: Motorised Traffic Volumes on Main Roads Beyond the Boundary

	Baseline Observed: Sep-20	Baseline Normalised: Sep-20	Pre-Consultation Observed: Oct-21	Pre-Consultation Normalised: Oct-21	Final Observed: May-23	Final Normalised: May-23
Acton Street	6,779	7,282	8,343	8,774	7,331	8,759
Calthorpe Street	3,582	3,849	3,128	3,290	3,630	4,336
Rosebery Avenue (Northern Site)	8,903	9,563	9,262	9,740	10,223	12,215

	Difference Final Observed vs. Pre-consultation Observed	Difference Final Normalised vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Normalised	Difference Final Observed vs. Pre-consultation Observed (%)	Difference Final Normalised vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Pre-consultation Normalised (%)	Difference Final Observed vs. Baseline Observed (%)	Difference Final Normalised vs. Baseline Normalised (%)	Difference Final Observed vs. Baseline Normalised (%)
Acton Street	-1,012	-15	-1,443	**-12%**	0%	**-16%**	8%	**20%**	1%
Calthorpe Street	502	1,046	340	**16%**	**32%**	**10%**	1%	**13%**	-6%
Rosebery Avenue (Northern Site)	961	2,475	483	**10%**	**25%**	5%	**15%**	**28%**	7%

Insights: All Motorised Vehicle Volumes

Across both internal and boundary roads, a range of differences were seen between pre-consultation and final counts.

For internal roads, there was a further 17% increase in normalised vehicle counts since the pre-consultation period, equating to a further growth of 364 vehicles on the streets counted. In general, the results represent a continuation of trends seen in the pre-consultation report, with further decreases seen on many streets that had already seen decreases (e.g. Lloyd Baker Street and Margery Street), and increases continuing on those streets that had seen more traffic (e.g. Prideaux Place and Wharton Street). Prideaux Place saw the largest change, an increase of 53% or over 200 daily vehicles, whilst Lloyd Baker Street saw the largest decrease (-16% or -56 daily vehicles). For Prideaux Place, it is likely that these impacts are at least partially due to the lockable bollard not being in place during the pre-consultation and lack of enforcement at the filter during the final counts (as outlined in the scheme context section). Although the normalised vs. normalised metric shows an overall increase between these periods, other metrics (observed vs. normalised and observed vs. observed) show summed changes to be negligible (±3%).

A few additional local streets were also added during the pre-consultation round and compared during the final round of monitoring. Between these periods, normalised flows on Topham Street (local road, beyond the boundary) showed an increase of 24% (101 vehicles), with a 15% increase on Cruikshank Street. Using other normalisation metrics, neither street registered a change of more than 10%, though. Lloyd Street, for which there were only two days of reliable data covering all survey periods, saw a doubling in traffic levels between pre-consultation and final monitoring rounds – although it is noted that this is likely a small rebalancing given that flows since the September 2020 baseline were still nearly 90% down across all metrics. Indeed, despite some of the increases between the last two data collection rounds, flows since baseline across comparable roads (Table 2) were still down by at least 39% overall, although with some exceptions such as Prideaux Place that would merit further monitoring by the council.

On the three comparable boundary roads, there was a further 29% increase in normalised vehicle counts since the pre-consultation period, with every street contributing to this increase. Pentonville Road saw the largest increase in motorised vehicle numbers (+7,026 daily vehicles or 26%), with both Farringdon Road and Rosebery Avenue's southern site also increasing by over 3,000 daily vehicles. Amwell Street saw the largest percentage increase (+187% or 4,048 daily vehicles) – although for Amwell Street this is likely reflective of low counts caused by emergency utilities work in in pre-consultation stage, given that total change since baseline is a much more moderate +25%. Claremont Square, which was also likely impacted by the pre-consultation emergency works, saw a 48% increase since that stage, but very limited change since baseline (using normalised figures). Similarly, the increase at Rosebery Avenue's southern site may have been due to diverted traffic using this part of the network during closures on Farringdon Lane and Clerkenwell Road further south for Cadent Gas works at the time of the final traffic counts in May 2023.

Since the 2020 baseline, comparable boundary roads have also seen an overall increase of 37% in normalised motorised vehicle volumes. However, using the "observed vs. normalised" metric, only Farringdon Road records an increase of over 10%. It should be noted that, in general, these metrics (inclusive of Amwell Street and Claremont Square as well) may still overstate vehicle increases, because many boundary roads for the Amwell LTN are roads that would have been lightly used during COVID-19 when few people were attending offices and many hospitality/entertainment outlets in the city centre (which these roads service) were either closed or operating at a limited capacity during the baseline data collection period – this is despite applying normalisation, because it is likely that these central London locations had even lower baseline traffic levels than the rest of the borough, and normalisation is applied on a borough-wide level. It is likely that traffic volumes on Farringdon Road were also impacted by the Gray's Inn Road walking and cycling improvement scheme. Monitoring shows a significant decrease in traffic on Gray's Inn Road (southern site) between March 2019 and November 2021- January 2022, some of which could have shifted to parallel north/south route Farringdon Road.

Overall, findings across the surveyed roads generally indicate that since the pre-consultation period, internal roads have continued along their previous trends – and that in general, the Blue Badge exemption policy, which was implemented between the pre-consultation and final counts, has not materially impacted the scheme's success.

Goods Vehicles Volumes (5-Day Averages)

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 "comparative prevalence" of such vehicles) is presented as a percentage point difference.

Table 7: Goods Vehicles Volumes on Internal Roads (Normalised)

	LGV #: Oct-21	LGV Prop: Oct-21	LGV #: May-23	LGV Prop: May-23	LGV Change in Proportion	HGV #: Oct-21	HGV Prop: Oct-21	HGV #: May-23	HGV Prop: May-23	HGV Change in Proportion
Great Percy Street	30	15%	36	17%	2%	11	6%	7	3%	-3%
Lloyd Baker Street	83	22%	55	18%	-4%	31	8%	26	9%	1%
Margery Street	24	5%	14	3%	-2%	62	12%	60	12%	0%
Prideaux Place	71	16%	85	11%	-5%	12	3%	15	2%	-1%
Wharton Street	122	19%	228	27%	8%	43	7%	57	7%	0%
Wilmington Street	12	5%	6	2%	-3%	2	1%	2	1%	0%
Total Internal	**342**	**12%**	**424**	**15%**	**3%**	**161**	**7%**	**167**	**6%**	**-1%**
Lloyd Street*	16	13%	44	18%	5%	8	7%	14	6%	-1%
Cruikshank Street	29	19%	38	22%	3%	8	5%	14	8%	3%

*Due to poor data in the baseline for Lloyd Street from Wednesday to Sunday, only a two-day average of Monday/Tuesday data is presented across all periods

Table 8: Goods Vehicles Volumes on Boundary Roads (Normalised)

	LGV #: Oct-21	LGV Prop: Oct-21	LGV #: May-23	LGV Prop: May-23	LGV Change in Proportion	HGV #: Oct-21	HGV Prop: Oct-21	HGV #: May-23	HGV Prop: May-23	HGV Change in Proportion
Farringdon Road	1,432	13%	1,437	9%	-4%	1,001	9%	799	5%	-4%
Pentonville Road	3,792	14%	2,981	9%	-5%	3,379	13%	2,224	7%	-6%
Rosebery Avenue (Southern Site)	3,363	23%	2,724	15%	-8%	1,503	10%	1,446	8%	-2%
Total Boundary	**8,587**	**13%**	**7,142**	**11%**	**-2%**	**5,883**	**11%**	**4,469**	**7%**	**-4%**

Table 9: Goods Vehicle Volumes on Boundary Roads with Impacted Data

	LGV #: Oct-21	LGV Prop: Oct-21	LGV #: May-23	LGV Prop: May-23	LGV Change in Proportion	HGV #: Oct-21	HGV Prop: Oct-21	HGV #: May-23	HGV Prop: May-23	HGV Change in Proportion
Amwell Street*	123	5%	1,342	20%	**15%**	76	3%	443	7%	4%
Claremont Square*	591	13%	960	15%	2%	354	8%	331	5%	-3%

*Amwell Street and Claremont Square are shown in a separate table from other boundary roads because the sites were affected by Thames Water undertaking emergency repairs during the pre-consultation counts in October 2021.

Table 10: Goods Vehicles Volumes on Local Roads Beyond the Boundary (Normalised)

	LGV #: Oct-21	LGV Prop: Oct-21	LGV #: May-23	LGV Prop: May-23	LGV Change in Proportion	HGV #: Oct-21	HGV Prop: Oct-21	HGV #: May-23	HGV Prop: May-23	HGV Change in Proportion
Cynthia Street	196	21%	197	16%	-5%	50	5%	51	4%	-1%
Donegal Street	647	16%	1,134	23%	7%	195	5%	269	5%	0%
Topham Street	67	15%	139	24%	9%	18	4%	30	5%	1%

Table 11: Goods Vehicles Volumes on Main Roads Beyond the Boundary (Normalised)

	LGV #: Oct-21	LGV Prop: Oct-21	LGV #: May-23	LGV Prop: May-23	LGV Change in Proportion	HGV #: Oct-21	HGV Prop: Oct-21	HGV #: May-23	HGV Prop: May-23	HGV Change in Proportion
Acton Street	1,351	14%	745	8%	-6%	978	10%	304	3%	-7%
Calthorpe Street	891	25%	1,266	26%	1%	266	7%	449	9%	2%
Rosebery Avenue (Northern Site)	2,218	22%	2,665	22%	0%	1,546	15%	1,804	15%	0%

Insights: Goods Vehicles Volumes

Overall, on comparable internal roads, there has been a small increase in the proportion of LGVs, with a 3-percentage point increase in proportion of such vehicles and 24% increase in vehicles counted. The proportion of HGVs, in contrast, decreased by 1-percentage point on such roads, with a 4% increase in the volume of such vehicles.

On these internal roads, most streets saw proportional decreases of LGVs, but Wharton Street, for which LGV numbers started highest, increased its LGV proportion by 8-percentage points – (amounting to +106 daily vehicles). However, since baseline, LGV proportions have only increased by 2-percentage points at this site. For HGVs, no internal street saw a change of more than 3-percentage points, with very limited change at all sites. However, in terms of volume, Wharton Street did see an increase of 14 daily HGVs or +33%.

On comparable boundary roads, both LGV and HGV proportions dropped slightly – by 2-percentage points for LGVs and by 4-percentage points for HGVs. The only notable change on boundary roads in terms of proportional representation was for LGVs on Amwell Street, which became 15-percentage points more prevalent. However, it is noted that this is very likely due to the impact of emergency water works at pre-consultation stage – particularly since proportions of goods vehicles in the final round are very similar to those from the baseline for this street. Most other sites saw a smaller decreases in proportional representation in both LGVs (e.g. 8-percentage points lower for LGVs at Rosebery Avenue's southern site, which may have resulted from a different mix of vehicles during the closures on Farringdon Lane/ Clerkenwell Road when the final traffic counts were taken) and HGVs (e.g. 6-percentage points lower on Pentonville Road, a decrease of around one-third in volume).

Elsewhere, similarly minor changes in proportional representation were observed, with no other site seeing a change of more than 10% in proportional representation of either type of goods vehicle. Only Donegal Street saw a somewhat notable proportional change, with a 7-percentage point increase in the prevalence of LGVs (+75% or +486 daily vehicles as a total change)

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. Motorcycles are not detected by radar counters in a consistent manner, so are not included for radar sites.

Table 12: Motorcycle Volumes on Internal Roads (Normalised)

	Motorcycle #: Oct-21	Motorcycle Prop: Oct-21	Motorcycle #: May-23	Motorcycle Prop: May-23	Motorcycle Change in Proportion
Great Percy Street	41	23%	83	40%	**17%**
Lloyd Baker Street	84	25%	79	28%	3%
Margery Street	285	64%	312	73%	9%
Prideaux Place	45	11%	43	7%	-4%
Wharton Street	84	14%	116	16%	2%
Wilmington Street	50	23%	78	29%	6%
Total Internal	**589**	**25%**	**711**	**25%**	**0%**

Lloyd Street*	42	34%	67	27%	-7%
Cruikshank Street*	23	16%	26	16%	0%

*Due to poor data in the baseline for Lloyd Street from Wednesday to Sunday, only a two-day average of Monday/Tuesday data is presented across all periods.

Table 13: Motorcycle Volumes on Boundary Roads (Normalised)

	Motorcycle #: Oct-21	Motorcycle Prop: Oct-21	Motorcycle #: May-23	Motorcycle Prop: May-23	Motorcycle Change in Proportion
Rosebery Avenue (Southern Site)	1,323	10%	897	5%	-5%
Amwell Street*	460	21%	875	14%	-7%
Claremont Square*	812	19%	564	9%	-10%

*Pre-consultation sites for Amwell Street and Claremont Square were affected by Thames Water undertaking emergency repairs.

Table 14: Motorcycle Volumes on Local Roads Beyond the Boundary (Normalised)

	Motorcycle #: Oct-21	Motorcycle Prop: Oct-21	Motorcycle #: May-23	Motorcycle Prop: May-23	Motorcycle Change in Proportion
Cynthia Street	95	9%	92	7%	-2%
Donegal Street	528	14%	843	18%	4%
Topham Street*	64	15%	48	9%	-6%

*First round data for Topham Street was done so under different conditions than for other internal streets, and so has not been included in this report.

Table 15: Motorcycle Volumes on Main Roads Beyond the Boundary (Normalised)

	Motorcycle #: Oct-21	Motorcycle Prop: Oct-21	Motorcycle #: May-23	Motorcycle Prop: May-23	Motorcycle Change in Proportion
Calthorpe Street	435	13%	780	18%	5%
Rosebery Avenue (Northern Site)	938	10%	1,416	12%	2%

Insights: Motorcycle Volumes

Overall, on internal roads, the proportion of motorcycles vs. total traffic has not changed since pre-consultation, and the total number of motorcycles counted across comparable roads (Table 10) was around 700 daily vehicles. The greatest change in terms of numbers was seen on Great Percy Street, where over 102% more motorcycles were counted, with the largest increase in proportion (of 17%). Wharton Street and Wilmington Street also saw increases in motorcycle volumes of 38% and 56%, respectively, but the daily increase was only a few dozen vehicles in both cases.

On boundary roads, however, the proportion of motorcycles in the final counts decreased by 5 percentage points from 12% to 7% since pre-consultation, and there were 10% fewer motorcycles counted (roughly 260 daily vehicles) – although it is noted that no motorcycle data was available for radar counts. Since the *baseline*, Amwell Street (which had poor quality pre-consultation data) has seen an increase of 39% in motorcycle volumes (+258 daily). In contrast, Claremont Square and Rosebery Avenue's southern site saw decreases both in proportional representation and in volume (by about 30% for both).

On other roads, motorcycles did not change significantly in prevalence, although did increase in volumes on Donegal Street and Rosebery Avenue's northern site (by 300-500 daily vehicles across these).

Cycle Volumes (seven-Day Average)

We have not normalised cycling figures for COVID-19/other impacts 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).

Between pre-consultation and final data collection periods (taken in October 2021 and May 2023 respectively), average climate data shows a similar picture of relatively temperatures less conducive to cycling, with May weather being unseasonably cool for final 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 2022/2023, have significantly impacted wider cycling trends since March 2020. Whilst the log of traffic levels available from the Department for Transport (Daily Domestic Transport Use by Mode) no longer provides cycling data (as of April 2023), this data has been replaced by a rolling 12-month average of cycling levels, which is presented on the overleaf and shows how COVID-19 restrictions significantly increased overall cycling levels – but also that these levels have moderated considerably in more recent years. This data is not yet available through 2023, but it appears likely that broader cycling levels may be stabilising around 15-20% higher than they were in 2019 (on an overall annual basis).

Route choices made by people cycling will also be impacted by the availability of nearby protected cycle infrastructure and low traffic neighbourhoods.

Following Graph 1 outlining nationwide cycling trends, the table outlines changes in cycling volumes across the scheme area between pre-consultation and final counts.

Cycles are not detected by radar counters, so are not included for radar sites.

Graph 1: Cycling Levels in England, to December 2022

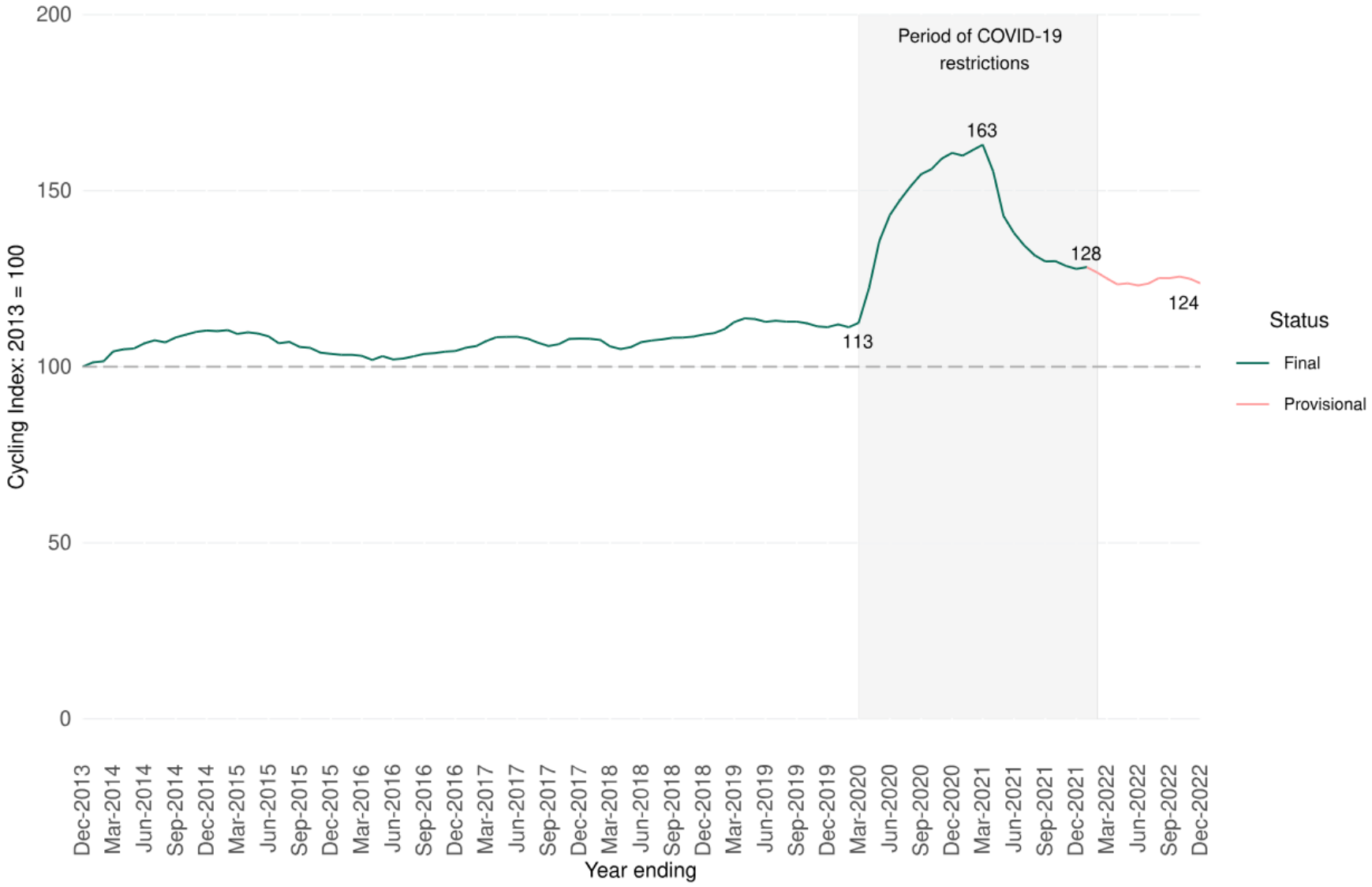


Table 16: Cycle Volumes on Internal Roads

	Baseline Observed: Sep-20	Pre-Consultation Observed: Oct-21	Final Observed: May-23	Difference vs. Pre-Consultation	Difference vs. Pre-Consultation (%)	Difference vs. Baseline	Difference vs. Baseline (%)
Great Percy Street	216	217	274	57	**26%**	58	**27%**
Lloyd Baker Street	186	207	191	-16	-8%	5	3%
Margery Street	261	771	902	131	**17%**	641	**246%**
Prideaux Place	39	66	22	-44	**-67%**	-17	**-44%**
Wharton Street	220	281	246	-35	**-12%**	26	**12%**
Wilmington Street	94	137	155	18	**13%**	61	**65%**
Total Internal	**1,016**	**1,679**	**1,790**	**111**	**7%**	**774**	**76%**

Lloyd Street*	160	98	94	-4	-4%	-66	**-41%**
Cruikshank Street**	New Site	30	45	15	**50%**	New Site	

*Due to poor data in the baseline for Lloyd Street from Wednesday to Sunday, only a two-day average of Monday/Tuesday data is presented across all periods
**First round data for Cruikshank Street was done so under different conditions than for other internal streets, and so has not been included in this report.

Table 17: Cycle Volumes on Boundary Roads

	Baseline Observed: Sep-20	Pre-Consultation Observed: Oct-21	Final Observed: May-23	Difference vs. Pre-Consultation	Difference vs. Pre-Consultation (%)	Difference vs. Baseline	Difference vs. Baseline (%)
Amwell Street*	927	607	852	245	**40%**	-75	-8%
Claremont Square*	634	1,538	966	-572	**-37%**	332	**52%**
Rosebery Avenue (Southern Site)	1,752	1,531	373	-1,158	**-76%**	-1,379	**-79%**

Table 18: Cycle Volumes on Local Roads Beyond the Boundary

	Baseline Observed: Sep-20	Pre-Consultation Observed: Oct-21	Final Observed: May-23	Difference vs. Pre-Consultation	Difference vs. Pre-Consultation (%)	Difference vs. Baseline	Difference vs. Baseline (%)
Cynthia Street	20	41	42	1	2%	22	**110%**
Donegal Street	263	328	172	-156	**-48%**	-91	**-35%**
Topham Street*	New Site	64	15%	48	9%	New Site	

*First round data for Topham Street was done so under different conditions than for other internal streets, and so has not been included in this report.

Table 19: Cycle Volumes on Main Roads beyond the Boundary

	Baseline Observed: Sep-20	Pre-Consultation Observed: Oct-21	Final Observed: May-23	Difference vs. Pre-Consultation	Difference vs. Pre-Consultation (%)	Difference vs. Baseline	Difference vs. Baseline (%)
Calthorpe Street	1,126	1,256	1,176	-80	-6%	50	4%
Rosebery Avenue (Northern Site)	1,189	1,774	1,749	-25	-1%	560	**47%**

Insights: Cycling Volumes

Overall, cycling volumes on internal streets saw a minor overall increase between pre-consultation and final data collection stages, whilst total volumes tended to decrease on boundary and other roads between these periods.

On internal roads, there was a slight 7% increase in cycling volumes on comparable streets (Table 14) since the pre-consultation period, equating to a further growth of 111 cycles counted. On individual roads, increases were seen on Margery Street (+131 daily cycles, +17%) and on Great Percy Street (+57 daily cycles, +26%). More moderate decreases were also seen on Prideaux Place and Wharton Street. All new streets (Cruikshank Street and Topham Street) saw minor increases in the raw number of additional cycles counted each day.

Since the baseline, however, almost all sites saw percentage increases in cycling of more than 10%, with Prideaux Place being the only minor exception. This is notable as the baseline counts were taken in September 2020 during the period of COVID restrictions shown in Graph 1 when cycling in England was well up on both pre-pandemic and post-restriction era levels. The total daily increase in cyclists across comparable roads (Table 14) was nearly 800 per day, or 76%.

On boundary roads, there was a 40% drop in cycles counted since pre-consultation phase for comparable roads (Table 15), with the largest drops being at Rosebery Avenue's southern site (-76% or around 1,158 fewer cycles per day) and Claremont Square (-37% or around 572 fewer cycles per day). Since *baseline,* there has been limited change (-8%) in cycle counts on Amwell Street. For these roads, it is likely that cyclists are now often utilising a range of new cycling routes throughout Islington and London – as since baseline, cycle volumes have dropped by 34%.

In other locations, cycle counts typically saw decreases, particularly on Donegal Road (-48% or around 156 fewer daily cyclists). Since baseline, though, some roads saw larger increases – a 47% increase on Rosebery Avenue's northern site (+560 daily cyclists) and a doubling on Cynthia Street (albeit equating to only 22 additional cyclists per day).

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 7-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 3: Average Vehicle speed in mph (7-day daily averages)

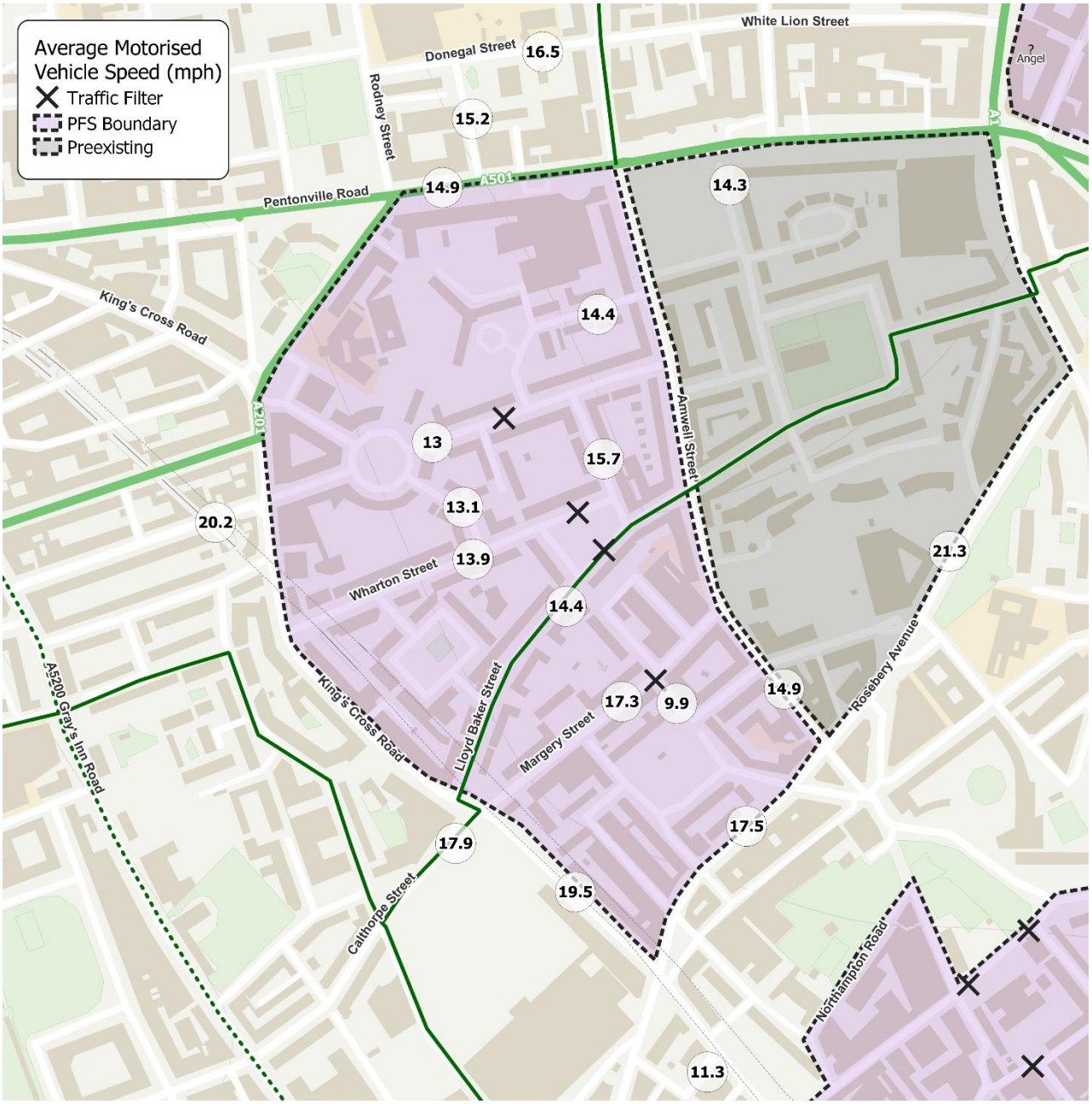


Table 20: Difference in Vehicle Speeds on Internal Roads

	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 (%)	85th Percentile Speed - Final (mph)	85th Percentile Speed - Diff. vs. Pre-Con (mph)	85th Percentile Speed - Diff. vs. Pre-Con (%)	85th Percentile Speed - Diff. vs. Baseline (mph)	85th 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.)
Great Percy Street	13.0	-0.1	-1%	-2.3	**-15%**	17.7	0.8	5%	-1.2	-6%	5%	3%	-4%
Lloyd Baker Street	14.4	0.7	5%	-1.7	**-11%**	18.8	-0.6	-3%	-1.7	-8%	10%	-3%	-8%
Margery Street	17.3	0.7	4%	-1.3	-7%	20.4	1.2	6%	-1.7	-8%	19%	9%	**-13%**
Prideaux Place	13.1	1.6	**14%**	1.2	**10%**	16.1	0.9	6%	0.9	6%	5%	2%	3%
Wharton Street	13.9	-1.8	**-11%**	-2.7	**-16%**	17.6	-2.6	**-13%**	-4.3	**-20%**	7%	-9%	**-18%**
Wilmington Street	9.9	0.5	5%	0.5	5%	11.9	0.3	3%	-0.1	-1%	0%	0%	0%
Weighted Average	**13.8**	**-0.1**	**-1%**	**-2.3**	**-14%**	**17.2**	**-0.5**	**-3%**	**-2.9**	**-14%**	**8%**	**-1%**	**-11%**
Lloyd Street*	15.7	2.6	**20%**	0.0	0%	20.7	3.0	**17%**	0.3	1%	18%	**10%**	1%
Cruikshank Street**	14.4	0.0	0%	No Data		18.0	-0.4	-2%	No Data		8%	0%	No Data

*Due to poor data in the baseline for Lloyd Street from Wednesday to Sunday, only a two-day average of Monday/Tuesday data is presented across all periods

**First round data for Cruikshank Street was done so under different conditions than for other internal streets, and so has not been included in this report.

Table 21: 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 (%)	85th Percentile Speed - Final (mph)	85th Percentile Speed - Diff. vs. Pre-Con (mph)	85th Percentile Speed - Diff. vs. Pre-Con (%)	85th Percentile Speed - Diff. vs. Baseline (mph)	85th 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.)
Farringdon Road	19.5	-1.5	-7%	-7.9	**-29%**	25.0	-3.0	**-11%**	-9.0	**-26%**	44%	**-12%**	**-43%**
Pentonville Road	14.9	-7.1	**-32%**	-11.0	**-42%**	21.0	-6.0	**-22%**	-11.0	**-34%**	16%	**11%**	-6%
Rosebery Avenue (Southern Site)	17.5	-2.6	**-13%**	-1.3	-7%	22.1	-2.7	**-11%**	-1.7	-7%	29%	**-21%**	**-10%**
Weighted Average	**16.6**	**-4.6**	**-22%**	**-7.4**	**-31%**	**22.2**	**-4.4**	**-17%**	**-7.7**	**-26%**	**26%**	**-2%**	**-12%**

Table 22: Difference in Vehicle Speeds on Boundary Roads with impacted data

	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 (%)	85th Percentile Speed - Final (mph)	85th Percentile Speed - Diff. vs. Pre-Con (mph)	85th Percentile Speed - Diff. vs. Pre-Con (%)	85th Percentile Speed - Diff. vs. Baseline (mph)	85th 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.)
Amwell Street*	14.9	3.3	**28%**	0.1	1%	18.8	3.9	**26%**	0.0	0%	9%	7%	0%
Claremont Square*	14.3	-1.2	-8%	-0.8	-5%	17.8	-1.9	-10%	-1.2	-6%	7%	-7%	-4%

*Amwell Street and Claremont Square are shown in a separate table from other boundary roads because the sites were affected by Thames Water undertaking emergency repairs during the pre-consultation counts in October 2021.

Table 23: Difference in Vehicle Speeds on Local Roads Beyond the Boundary

	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 (%)	85th Percentile Speed - Final (mph)	85th Percentile Speed - Diff. vs. Pre-Con (mph)	85th Percentile Speed - Diff. vs. Pre-Con (%)	85th Percentile Speed - Diff. vs. Baseline (mph)	85th 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.)
Cynthia Street	15.2	-3.5	**-19%**	2.8	**23%**	18.5	-4.7	**-20%**	3.7	**25%**	7%	**-32%**	7%
Donegal Street	16.5	0.2	1%	0.2	1%	19.7	-0.1	-1%	-0.2	-1%	13%	-1%	-1%
Topham Street*	11.3	0.9	9%	No Data		13.6	0.6	5%	No Data		4%	4%	No Data

*First round data for Topham Street was done so under different conditions than for other internal streets, and so has not been included in this report.

Table 24: Difference in Vehicle Speeds on Main Roads Beyond the Boundary

	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 (%)	85th Percentile Speed - Final (mph)	85th Percentile Speed - Diff. vs. Pre-Con (mph)	85th Percentile Speed - Diff. vs. Pre-Con (%)	85th Percentile Speed - Diff. vs. Baseline (mph)	85th 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.)
Acton Street	20.2	-1.3	-6%	-3.4	**-15%**	24.0	-1.0	-4%	-3.0	**-11%**	47%	**-27%**	**-38%**
Calthorpe Street	17.9	0.7	4%	0.8	5%	22.3	0.1	0%	0.2	1%	30%	2%	2%
Rosebery Avenue (Northern Site)	21.3	1.9	10%	0.1	0%	25.9	0.7	3%	-0.4	-2%	59%	**13%**	-2%

Insights: Vehicle Speeds

In general, changes in vehicles speeds have mixed, particularly on internal roads or other roads with low flows – this is likely because of the small sample sizes in both the pre-consultation and final counts, which can be easily skewed by a small number of extreme data points.

Noting this, the weighted average speed since pre-consultation on comparable internal roads (Table 19) saw a limited decrease of 0.1mph (-1%), drawn lower by a 1.8mph decrease on Wharton Street (-11%) and counterbalanced by a 1.6mph increase on Prideaux Place (+14%). Against the baseline, more streets (namely Great Percy Street, Lloyd Baker Street and Wharton Street) saw a decrease to support a drop of 2.3mph in average speeds, 2.9mph in 85th percentile speeds and 11 percentage point drop in vehicles speeding. Prideaux Place, however, maintained a speeding increase of 1.2mph throughout the monitoring periods.

On other internal roads, only the limited data from Lloyd Street shows notable results – a 2.6mph increase in average speeds, 3.0mph increase in 85th percentile speeds and 10 percentage point increase in vehicles speeding.

On boundary roads, changes in speed were more significant, with an overall decrease of 4.6mph in average speeds since pre-consultation. Amwell Street saw an increase of 28% in average vehicle speeds (+3.3mph). In contrast, Pentonville Road saw a significant 7.1mph reduction in average speeds, although it is noted that this may result from congestion rather than improved driver behaviour. Rosebery Avenue's southern site also saw a 2.6mph decrease in average speeds, which may also relate to increased congestion. These changes largely mirrored for 85th percentile speeds and percentage of vehicles speeding and are typically even more pronounced when compared to baseline data.

Across the wider area, the changes in vehicle speeds vary considerably. Cynthia Street was the only road that has seen greater net changes in average speeds (-3.5mph since pre-consultation, +2.8mph since baseline). Acton Street also saw a 3.4mph decrease in average speeds since the baseline stage.

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 (NO_2)** – 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 NO_2 and PM10 24 hours a day at two locations in the borough. These are our most accurate monitors.

- **Diffusion tubes:** provide monthly readings of NO_2. 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 (NO_2), a toxic gas that can be very harmful to health. The tubes are replaced and analysed on a monthly basis.

- **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 LTN monitoring reports using LTN 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 LTN 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 LTN 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 data in this report, but not to wider air quality monitoring reports.

The long-term sites in Islington as used for this report consist of seven roadside diffusion tubes, four background urban diffusion tubes and five background non-street diffusion tubes. One of the main road diffusion tubes was moved in 2019 and is therefore not being included in LTN monitoring using this time period and two of the long-term sites are instead reported on in the Amwell area. More details of these sites can be viewed in our annual report.

The air quality monitoring sites in Amwell 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.

Methodology

Time period of study

Air quality varies over time due to a variety of factors, including weather. It is therefore important to look at trends over a longer period of time to identify real changes in air quality due to this scheme. It is preferable to compare a year's worth of data to account for seasonal variation.

However, at some sites we do not have a full year of "before" scheme data. The newer monitoring sites are therefore less reliable to provide comparison data, as the pre-scheme monitoring period is too short. However, 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

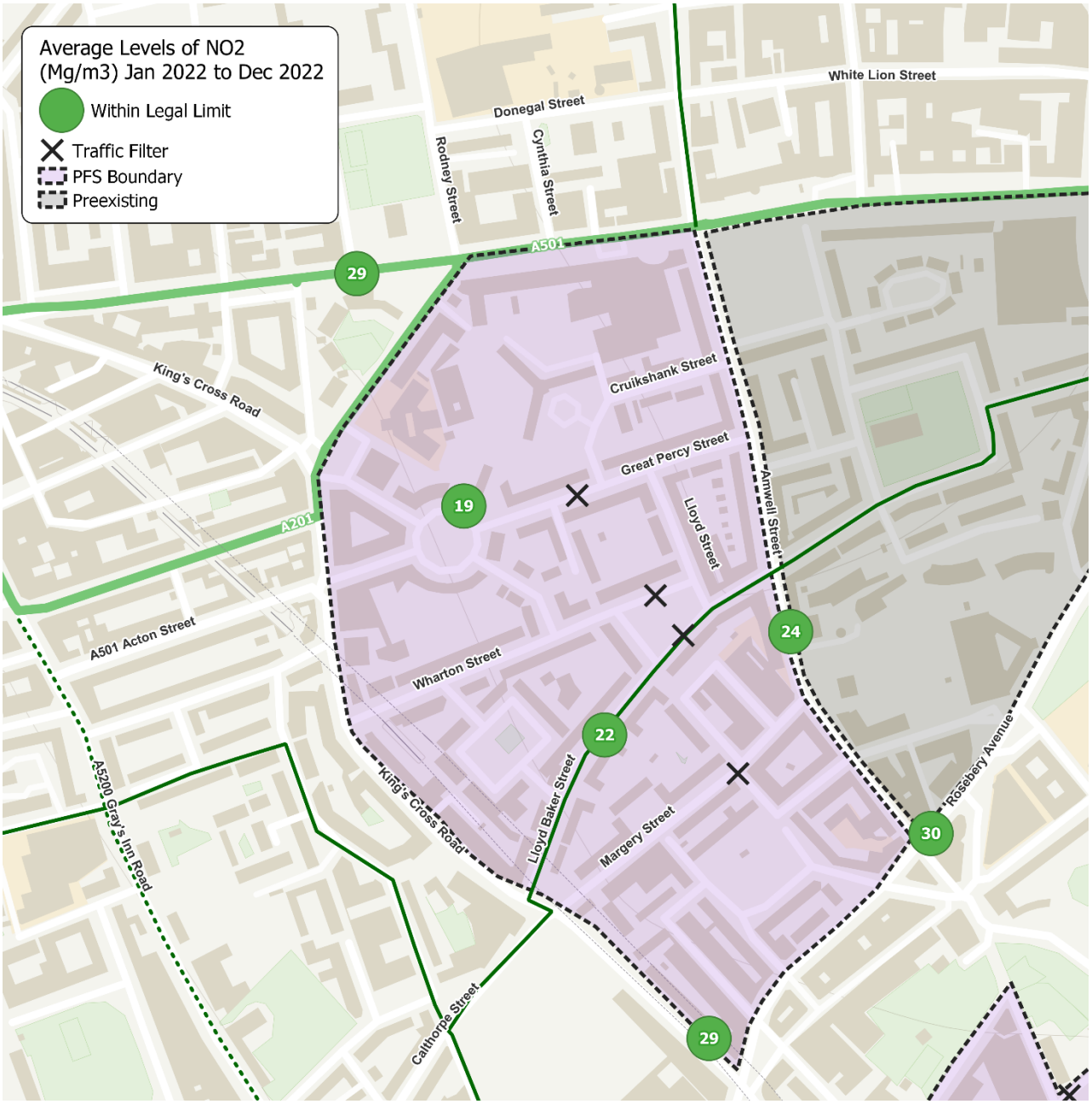
The results shown in this section use NO_2 data from diffusion tubes only. It was therefore not possible to provide results for PM10 for Amwell.

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 NO_2 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% and more than 25%, the results should be annualised. More information on this process can be found in the council's annual air quality report.

It is noted that some of the averages in this section of the report will be different than those seen in the council's Air Quality Annual Status Report, as that report takes all background sites together and categorises monitoring sites differently as explained above, whereas this monitoring report excluded sites within the scheme area from the background sites calculation and had an additional non street category.

Map 4: Average levels of NO_2 (µg/m3) January 2022 – December 2022



Map 5: Percentage Change in NO_2 (µg/m3) between January 2021 – December 2021 against January 2022 – December 2022

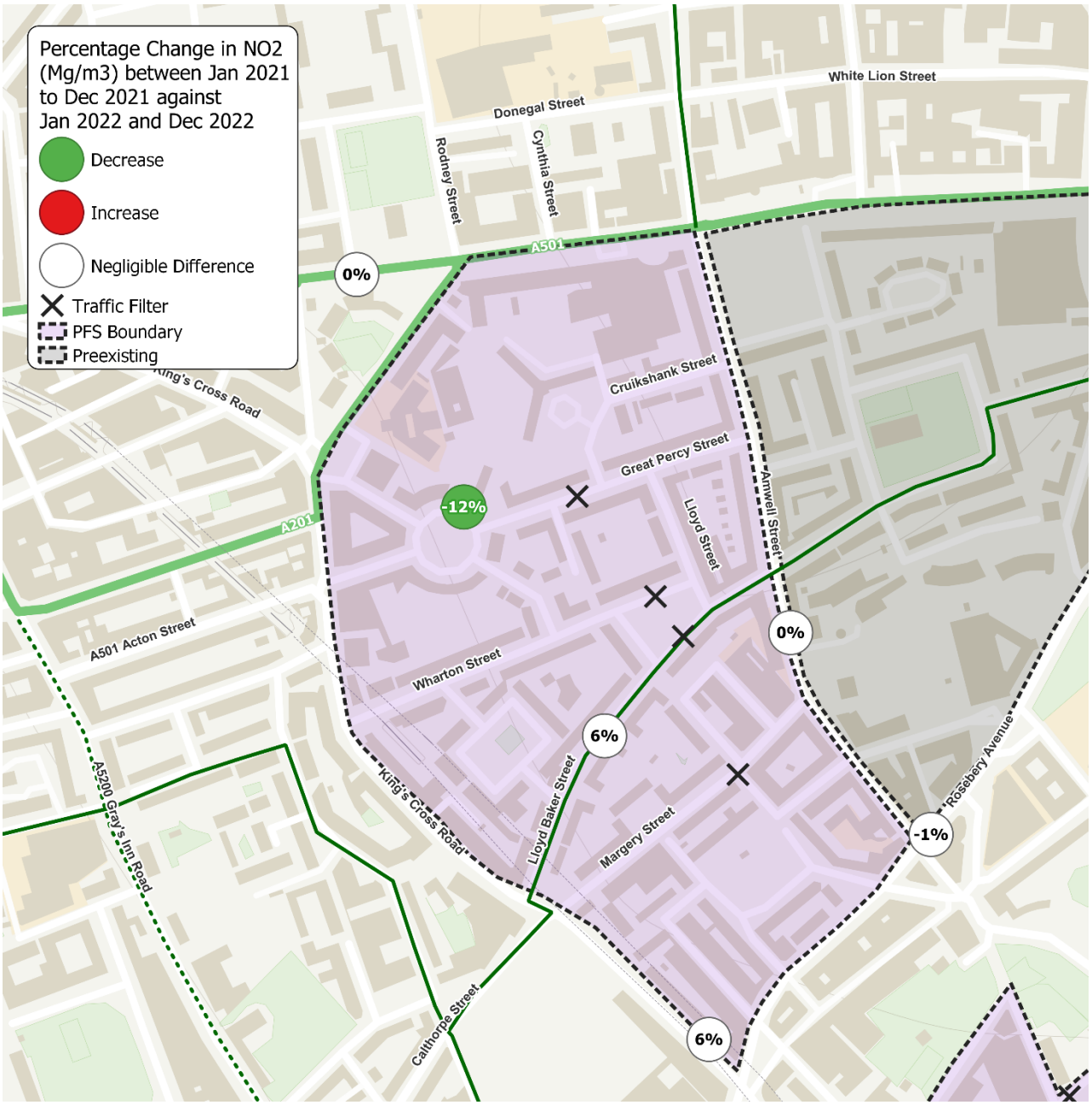


Table 25: (Boundary roads) NO_2 levels in Amwell and borough long-term diffusion tube sites

	Jan '21 – Dec '21 NO_2 (µg/m^3)	Jan '22 – Dec '22 NO_2 (µg/m^3)	Change in NO_2 (µg m^3)	Change in NO_2 (% change)
Amwell	28	28	0	1%
Whole borough long term sites	29	28	-1	-3%

Table 22 provides average NO_2 levels from available boundary road site data for Amwell as well as from seven boundary roads spread across the remainder of the borough. For the overall borough, there was a 3% decrease in NO_2 levels between the compared periods, whilst in the scheme area there was a nominal 1% increase. Note that changes in NO_2 levels are based on rounded numbers and % changes are not.

Table 26: (Internal roads) NO_2 levels in Amwell and borough long term diffusion tube sites

	Jan '21 – Dec '21 NO_2 (µg/m^3)	Jan '22 – Dec '22 NO_2 (µg/m^3)	Change in NO_2 (µg m^3)	Change in NO_2 (% change)
Amwell	21	21	0	-3%
Whole borough long term sites	19	21	+2	**+10%**

For internal roads, available data from internal roads in the Amwell LTN and data from five such roads across the wider borough have been included in the averages in Table 23. For the overall borough, there was a 10% increase in NO_2 levels between the compared periods, whilst in the scheme area there was a 3% decrease for this metric. Note that changes in NO_2 levels are based on rounded numbers and % changes are not.

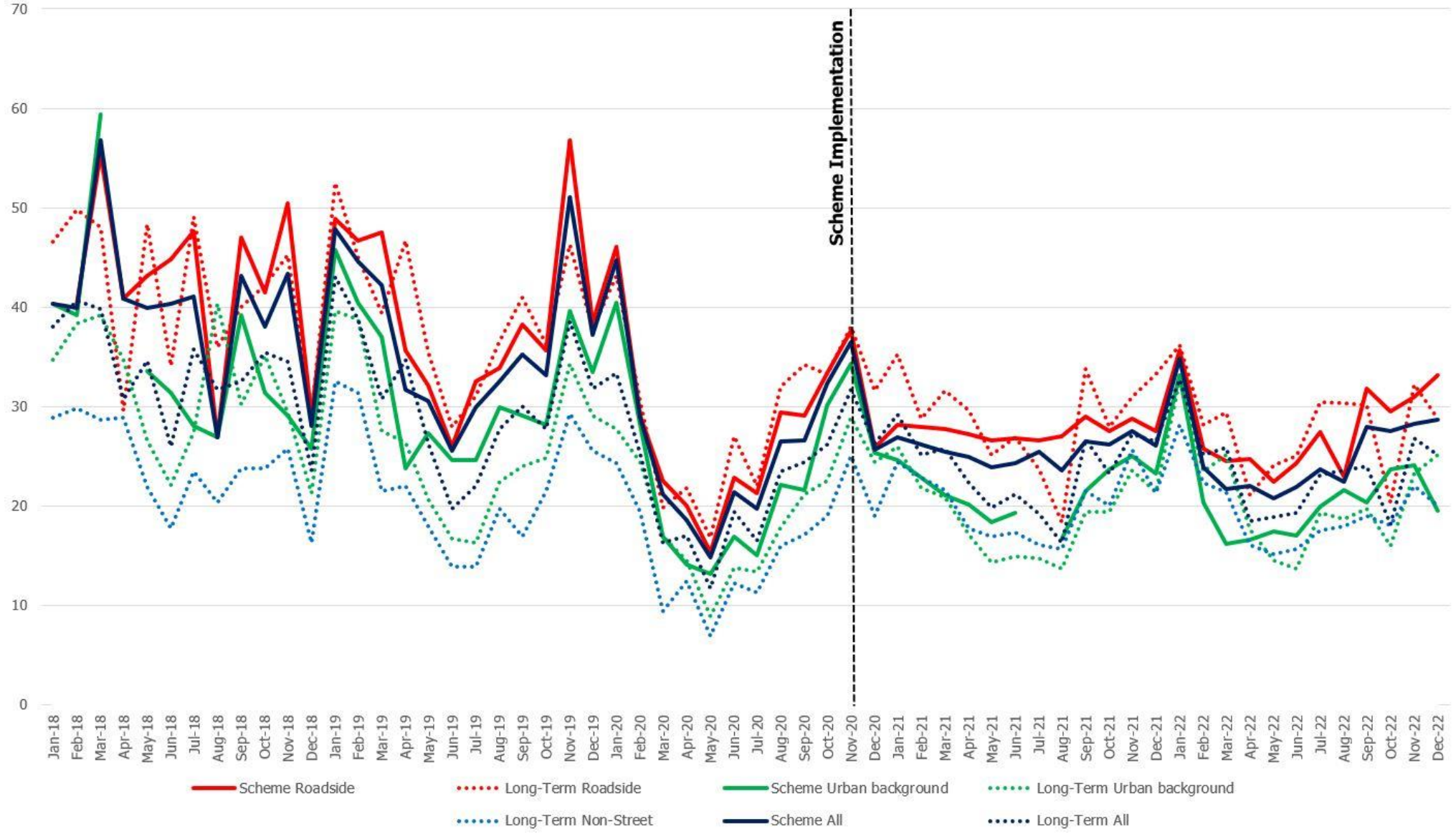
Table 27: (Overall) NO2 levels in Amwell and borough long term diffusion tube sites

	Jan '21 – Dec '21 NO_2 (µg/m^3)	Jan '22 – Dec '22 NO_2 (µg/m^3)	Change in NO_2 (µg m^3)	Change in NO_2 (% change)
Amwell	26	25	-1	-1%
Whole borough long term sites	24	23	-1	0%

Taking the average of all sites for Amwell and the wider borough (including non-street sites elsewhere in the borough for which there was no comparator sites for Amwell), there was little impact to the NO_2 levels for both, with Amwell sites seeing an average -1% decrease (from 26 to 25 µg/m^3), whilst whole-borough sites saw a rounded 0% change to 23 µg/m^3. Note that changes in NO_2 levels are based on rounded numbers and % changes are not.

Graph 2 compares the trends in NO_2 levels in Amwell LTN across boundary roads, internal roads and (borough-wide only) non-street sites from January 2018 through to December 2022.

Graph 2: Average NO_2 levels in Amwell LTN compared to long-term borough-wide sites from diffusion tubes



Insights: Air Quality

The results in Tables 22-24 and Graph 2 show that NO_2 levels have remained relatively stable between the two periods assessed, both within Amwell and across the borough at large – this follows after several years when both metrics were showing improvements in air quality.

In summary, these results show:

- Overall changes in levels of NO_2 in Amwell are on par with averages across the wider borough, with changes between assessed periods being fairly limited and broadly stable.
- NO_2 levels in Amwell have been within the annual objective level of 40$\mu g/m^3$.
- 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 main goal of this report has been to assess how the scheme has been bedding in since the publication of the pre-consultation monitoring report in December 2021 – 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 Amwell scheme area should be taken in the context that this city centre LTN is quite different than most other schemes, which are located in more residential areas of the borough. Amwell is situated inside London's Central Activities Zone (CAZ), where general activity levels were significantly higher in the final monitoring period than in the pre-consultation and baseline periods, namely because people were far more likely to attend offices in 2023, as well as to go to evening/weekend events that were drawing lower levels of patronage in 2021 and before. 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.

However, based on the range of data presented, it still appears that the Amwell Low Traffic Neighbourhood continues to perform according to its design in terms of keeping motorised traffic levels on local streets relatively low. Overall, although some metrics show motorised vehicle numbers on comparable internal streets (Table 2) as moderately higher than at pre-consultation levels, all comparison metrics still support the fact that total vehicle numbers on these streets are at least 39% lower than they were during the pre-implementation baseline.

Locations such as Lloyd Baker Street and Margery Street have continued to see decreases in traffic since pre-consultation, building on existing significant reductions from the baseline of over 65% (for both), whilst Great Percy Street figures indicate similar or slightly worse figures since pre-consultation (but still over 75% lower since baseline). In contrast, traffic on Prideaux Place, Wharton Street and Wilmington Street has increased since pre-consultation, building on existing increases since baseline – these increases have generally been of less than 25% since pre-consultation, except in the case of Prideaux Place. These increases are likely due to rerouting of trips inside the LTN, and the lack of active enforcement at the Lloyd Square (north side) filter in the case of Prideaux Place and Wharton Street, but will continue to be monitored by the council.

Limited overall trends were observed for goods vehicles on internal roads, which broadly increased in line with overall trends for motorised vehicles between the pre-consultation and final surveys, although it is noted that Wharton Street saw notable increases in volumes of such vehicles – (amounting to +106 daily vehicles) – while the proportion did not change notably since the baseline. For motorcycles, Great Percy Street saw a doubling in volumes despite limited change in overall proportional representation. Speed changes were somewhat varied across

internal roads but averaged to a minimal overall change, with Wharton Street seeing the largest decrease in speeds (-1.8mph) and Prideaux Place seeing the largest increase (+1.6mph). Lloyd Street did see larger changes (+2.6mph), though this was based on minimal data.

Cycling volumes on internal roads, whilst broadly flat between the pre-consultation and final data collection periods (+7%), appear to be considerably higher compared to the baseline – both overall and on most roads. Margery Street has seen a considerable overall increase (+17% since pre-consultation and +246% since baseline – or around 650 additional daily cycles), and cycle flows are also up on Great Percy Street and Wilmington Street by more than 50 cycles per day since baseline.

On boundary roads, metrics for motorised vehicles indicated increases, both overall and on most roads – and both between final vs. pre-consultation, and final vs. baseline. As previously noted, such increases may be overstated due to previous rounds of data collection being undertaken during periods of significant COVID impact on city centre locations (such as the Amwell LTN) or roads leading to such locations (such as the Amwell boundary roads). Caveats aside, vehicle volumes still appear to have increased on most boundary roads since the baseline, most notably on Farringdon Road (+88%) and Pentonville Road (+30%). Goods vehicle numbers have shifted lower for these roads, particularly on Pentonville Road and at Rosebery Avenue's southern site, and motorcycle flows are also lower. Vehicle speeds generally appear lower on boundary roads (except for on Amwell Street), although this may be more a product of congestion in locations such as Pentonville Road and Rosebery Avenue. These boundary roads will continue to be monitored by the council, particularly in terms of their observed volumes and levels of congestion.

Cycling numbers on boundary roads have also fallen across data collection rounds, with a 40% drop between pre-consultation and final rounds and a 34% drop since baseline. However, it is likely that many of these cycling trips have moved off these busier roads since 2020 and are instead using new infrastructure that has since been built in the vicinity and Margery Street within the LTN (Cycleway 27)

In air quality terms, there has been a negligible difference between the pre-consultation period and final report period across all metrics analysed, indicating stable air quality throughout and no sites recording NO_2 in exceedance of 40 $\mu g/m^3$.

Overall, the scheme has seen largely positive results against the stated objectives. Despite some increases since pre-consultation, traffic volumes on internal roads are down by around 40% since the baseline (although noting some increases that warrant further monitoring, particularly Prideaux Place). Cycling levels are also up, slightly since pre-consultation, but over 75% since baseline – particularly on the designated cycling route along Margery Street, where they have more than doubled (with-flow volume). For air quality, NO_2 levels have slightly decreased in and around the study area, whilst they have increased slightly on a borough-wide basis.

However, levels of motorised vehicle traffic, as calculated by the standard normalisation methodology, have increased on almost all boundary roads as compared to both pre-consultation and the baseline – with a total increase of 37% on comparable boundary roads. 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 Central Activities Zone (in which Amwell is located) not captured by the normalisation, including much increased activity at King's Cross/St. Pancras (due to post-Covid Eurostar services picking back up through 2022) as well as at Farringdon (following the opening of the Elizabeth Line in May 2022).

Appendices

Appendix 1: Amwell Traffic Count Locations and Type

Islington-commissioned ATC (Automated Traffic Count) and Radar sites

Boundary	**Type**	**Northing**	**Easting**
Amwell Street	ATC	531273.3	182634.6
Claremont Square	ATC	531212.4	183087.1
Farringdon Road	Radar	531089.5	182446.8
Pentonville Road	Radar	530953.1	183078.2
Rosebery Avenue (Southern Site)	ATC	531242.6	182510
Internal			
Cruikshank Street	ATC	531096.3	182967.7
Great Percy Street	ATC	530949.8	182848.4
Lloyd Street	ATC	531104.8	182837.6
Lloyd Baker Street	ATC	531074.4	182704
Margery Street	ATC	531144.7	182629.3
Prideaux Place	ATC	530979	182790.8
Wharton Street	ATC	530989.3	182744.2
Wilmington Street	ATC	531169.6	182626.2
Local Roads Beyond the Boundary			
Cynthia Street	ATC	530978.5	183140.8
Donegal Street	ATC	531040.4	183202.7
Topham Street	ATC	531212.9	182287.6
Main Roads Beyond the Boundary			
Acton Street	Radar	530755.8	182771.3
Calthorpe Street	ATC	530980.2	182487.8
Rosebery Avenue (Northern Site)	ATC	531419.4	182762.5

TfL permanent traffic sites and coordinates (all ATCs)

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

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. They are considered to be extremely reliable. 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

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. November 2021 and January 2023) across all the permanent TfL counter sites around Islington, and taking an average difference for the whole month.

To calculate the **normalised vs. normalised** percentage differences, the October 2021 traffic count volumes have been divided by 0.9510 and the May 2023 traffic counts by 0.8369 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 impacts from **many** broad events such as COVID-19, the cost-of-living crisis, the expansion of the ULEZ and the introduction of many other LTNs. 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.

This report also presents **observed vs. normalised** percentage differences, a comparison that attempts to remove the impact of COVID as a single factor influencing traffic levels whilst considering that other impacts such as working from home, lower background traffic from ULEZ/other LTNs etc. are expected to continue from now on (i.e. that the COVID virus itself is no longer impacting people's propensity to travel). This comparison is included to compare how both the LTN and wider London transport policy/trends have impacted local traffic flows.

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 Amwell LTN 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 Amwell LTN area are listed below, with details about type and if they have been added as part of the PFS programme or were pre-existing.

Amwell air quality monitoring sites type and period of installation

Locations	PFS road type	Monitoring type	Installation	Site Type by DEFRA classification*
Percy Circus (BIS04)	Internal Road	Diffusion tube	Pre-existing (since 2000)	Background urban
Lloyd Baker Street	Internal Road	Diffusion tube	New (since August 2020)	Background urban
Amwell Street (S16)	Boundary Road	Diffusion tube	New (since February 2020)	Roadside
Pentonville Road (PF34)	Boundary Road	Diffusion tube	New (since September 2020)	Roadside
Rosebery Avenue (BIS02)	Boundary Road	Diffusion tube	Pre-existing (since 2000)	Roadside
Farringdon Road (N50)	Boundary Road	Diffusion tube	Pre-existing (December 2019)	Roadside

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.

The 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. 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 NO_2 emissions came from inside Islington. Therefore, it can be very hard to pick up on local changes caused by schemes such as the LTNs.

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 NO_2 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.

As noted in the main report, data was processed using SYSTRA's proprietary automated data processing tools, which draw together raw data from all reporting periods and apply formulae-based calculations to produce the charts and tables shown in the following pages and appendices. However, as it is not uncommon for there to be problems with data surveys (broken equipment, cars parked on ATC bands etc.) as well as anomalous readings from surveys resulting from one-off events (waterworks, gas leaks, accidents etc.), all data has been thoroughly checked by hand and "patched" (i.e. blank data or significantly anomalous data has been substituted by more representative data from the site/wave in question), which is a necessary task in order to maintain comparable data – therefore, it is likely there are some deviations from that data which was presented in previous reports.

It is also noted that data for goods vehicles is presented as seven-day averages in the appendix (vs. weekday averages in the report).