



Bath & North East
Somerset Council

Improving People's Lives

Queen Charlton Lane Through-traffic Restriction Trial 2022-23

Traffic monitoring data report

Prepared: November 2023

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Queen Charlton Lane: Through-traffic restriction trial

Traffic monitoring data report

1. Introduction

- 1.1. This report presents a comparison of traffic data collected before and after a through-traffic restriction trial was installed on Queen Charlton Lane in November 2022. The purpose is to understand how traffic flows changed with the trial in place.
- 1.2. The information will be used along with the consultation feedback, and consideration of the council's transport policy to inform a decision to either retain or remove the through-traffic restriction.

2. Aim of the trial

- 2.1. The through-traffic restriction (or modal filter) was installed under an experimental traffic regulation order (ETRO) in November 2022 for a minimum of six months, during which time we ran an ongoing public consultation.
- 2.2. The aim is to stop motorists using Queen Charlton Lane as an inappropriate shortcut (or through route) when travelling between Keynsham and Bristol and to provide a safe, healthy environment for residents, pedestrians, horse riders and cyclists.
- 2.3. This filter is comprised of two sets of drop-down bollards and temporary wooden planters. One set is located just after Furthermead Farm as you drive from the A37/Whitchurch village. The other is located before Dapwell Lane as you drive from Queen Charlton. In front of both sets of bollards, there is adequate space for vehicles to turn and exit via the same route. Landowners and farmers can drop the bollards to gain access. Advance warning signs alert motorists that they cannot use Queen Charlton Lane as a through route.
- 2.4. The scheme does not restrict vehicle access to homes or businesses, but it may require drivers to take alternative routes. Turning areas are provided in front of the through-traffic restriction, which in this case is two sets of droppable bollards.
- 2.5. The through-traffic restriction is just one of several measures proposed for the Whitchurch Village and Queen Charlton area under the Liveable Neighbourhoods programme, which aims to improve residential streets and encourage safe, active and more sustainable forms of travel, such as walking, wheeling and cycling. For details of the scheme go to www.bathnes.gov.uk/LNPILOTS (ETRO consultation) or <https://beta.bathnes.gov.uk/through-traffic-restriction-et-ro-consultation-current>.

3. Purpose of traffic data monitoring

- 3.1. The purpose of baseline (pre-installation) and post-installation monitoring is to understand how traffic flows have changed, and to establish what impact the restriction had on:
- Traffic, walking and cycling volumes on Queen Charlton Lane
 - Traffic volumes on neighbouring streets

4. About the monitoring

- 4.1. The through-traffic restriction trial started on 17 November 2022.
- 4.2. Baseline traffic data was collected for seven consecutive days from 3 October to 9 October 2022 to gain average daily counts over the course of a week before the trial started. The weather was dry and 12-17 degrees centigrade.
- 4.3. Post-installation traffic data was collected for seven consecutive days from 18 to 24 April 2023 (five months after the filter was installed). The weather was dry and between 6 to 12 degrees.
- 4.4. Additionally, post-installation traffic data was collected for seven consecutive days from 3 to 9 October 2023 (nine months after installation). The weather was dry with highs of 15 to 21 degrees.
- 4.5. Due to a fault during data collection between 3 and 9 October, post-installation traffic data collection for Sleep Lane was collected for seven consecutive days from 31 October to 9 November 2023. By comparing post-installation average daily counts with baseline data, we can assess the impact of the trial.
- 4.6. We were careful not to collect data during school or university holidays or other times that impact significantly on average traffic flows.

5. Method

- 5.1. In October 2022, April 2023, and again in October 2023 we deployed the following survey methods for seven consecutive days in and around Queen Charlton Lane.

Video camera capturing traffic traveling on Queen Charlton Lane

- 5.2. Video cameras established the class of all passing traffic and the total numbers of trips made in each direction per 15-minute interval between 06:00 to 22:00 hrs each day.

The classes recorded were:

- Pedestrian/wheelchair/mobility scooter
- Pedal cycle
- Car
- Light goods vehicles

- Heavy goods vehicle
 - Public passenger vehicle (up to 16 seats)
 - Other
- 5.3. The position of the camera is marked on the map in Figure 1 below (D), on a lighting column to the east of Maes Knoll Drive near the western entrance to Queen Charlton Lane at Whitchurch.

Automatic Traffic Count (ATC) tubes

- 5.4. Established traffic counts in both directions over 24 hours for the 7 consecutive days of monitoring, including vehicle classification and speed data in 15-minute intervals. The position of the tubes are marked on the map in Figure 1 below (A, B, C, E and F). Tubes were positioned on the eastern end of Redlynch Lane (near the junction with Charlton Lane), on Charlton Lane (near the junction with Redlynch Lane), on Woollard Lane (near the junction with Redlynch Lane), on Bristol Road near the junction with Queen Charlton Lane and on Sleep Lane (near the junction with Queen Charlton Lane).

6. Data presentation

- 6.1. Traffic data is presented as an average count over the full 7 days (taking account of weekends) and as an average count over 5 days (weekdays from Monday to Friday only).
- 6.2. We have used graphs to illustrate the changes in traffic flows across the three monitoring periods, comparing in the notes the October 2023 data with that collected in October 2022 (before the trial was installed).

Figure 1: Map showing location of camera and automatic traffic count tubes on and around Queen Charlton Lane

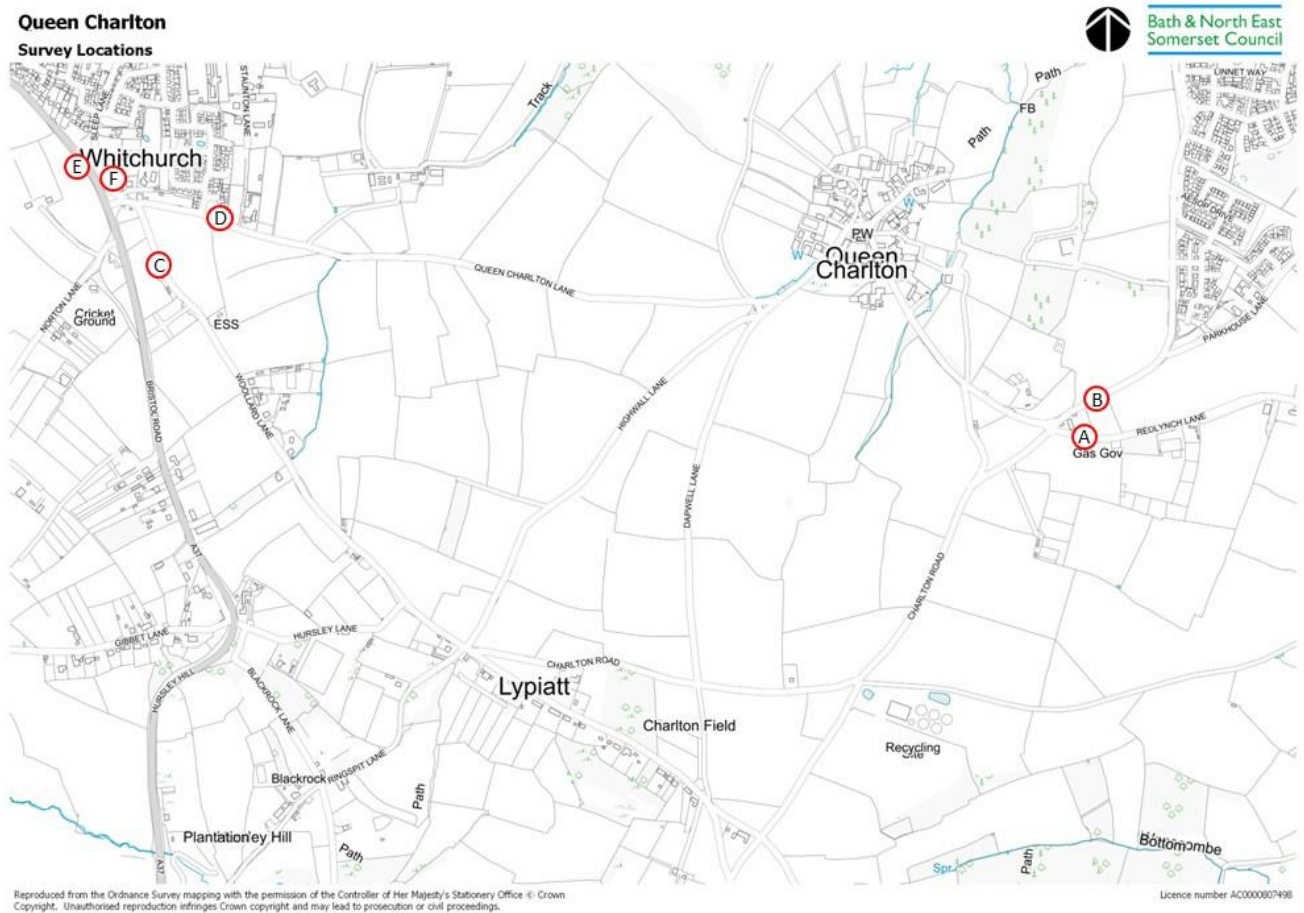


Figure 2: Map showing travel movements captured in data collection periods.



Note: Each coloured arrow represents a different travel movement which will be discussed in more detail below

7. Observations

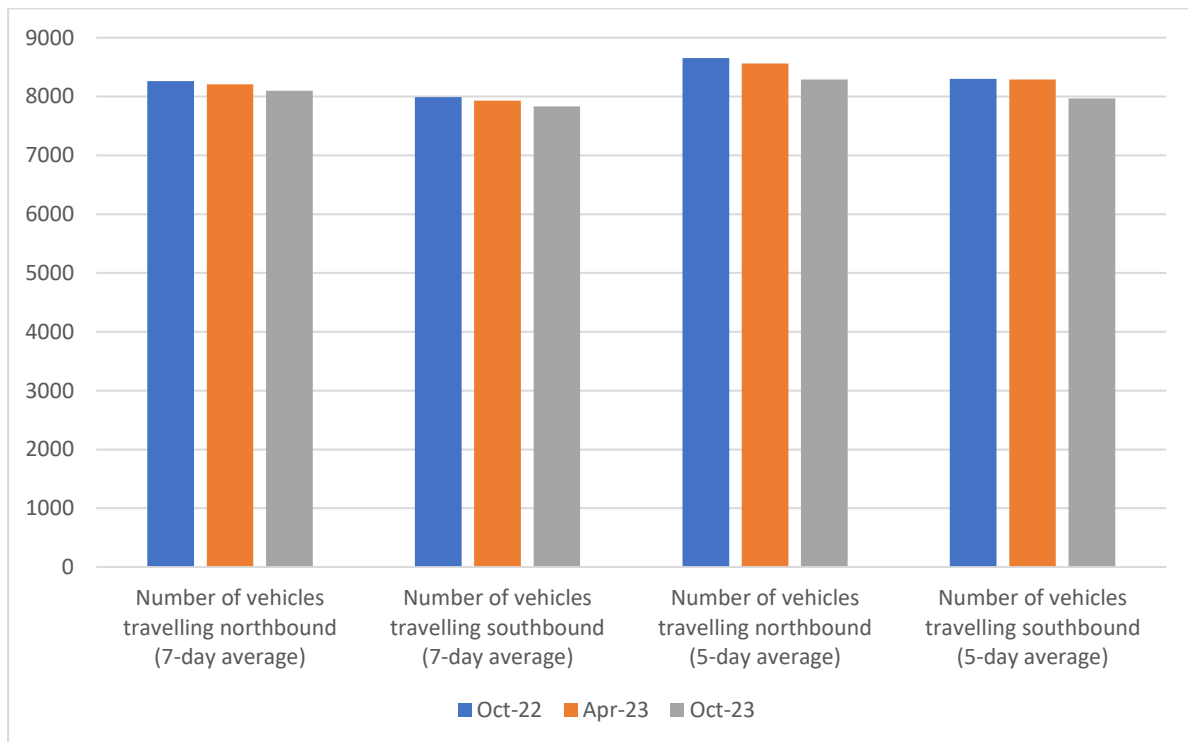
- 7.1. Using the methods outlined above, we have presented the monitoring data in graphs for the purpose of comparison. This is followed by key observations.
- 7.2. The baseline monitoring was performed from 3-9 October 2022. Post-installation monitoring was performed from 18-24 April 2023 and again from 3-9 October 2023.

7.3. Roads linking to the western end of Queen Charlton Lane

Vehicles travelling on Bristol Road, north of Queen Charlton Lane (both ways)

Figure 3: Average number of vehicles travelling on Bristol Road, north of Queen Charlton Lane (both ways) each day during monitoring periods.

Illustrated by the blue arrow on Figure 2.



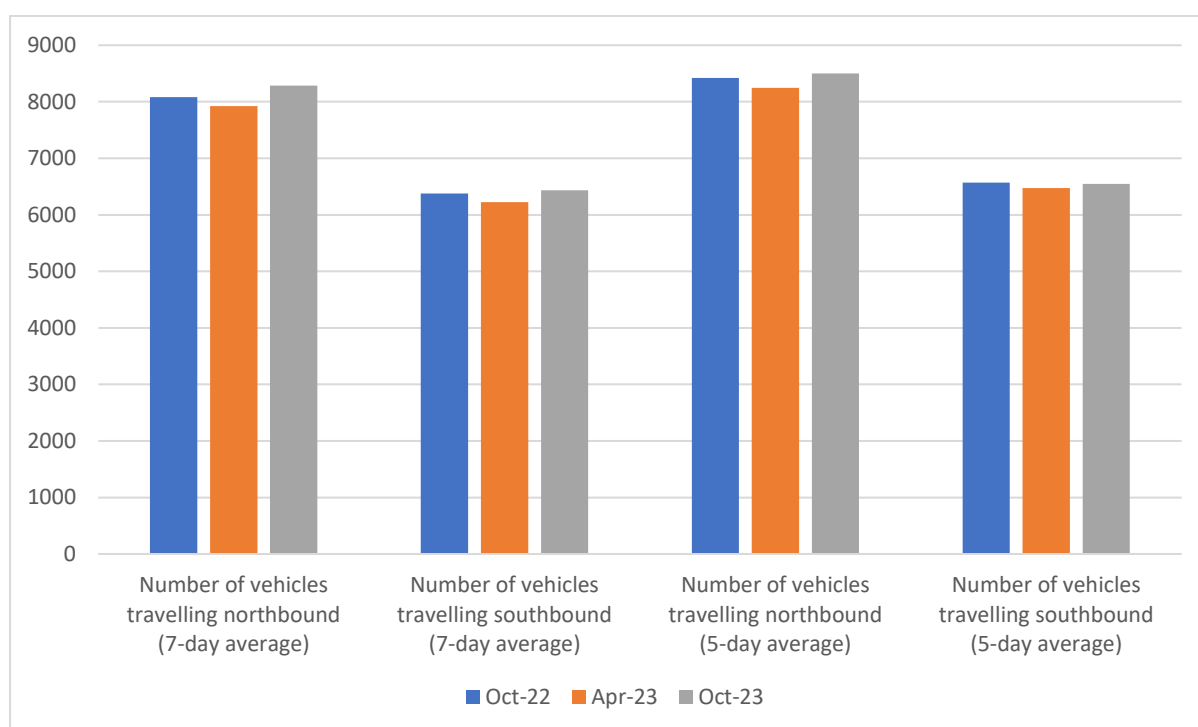
- On average, fewer vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 2% fewer vehicles per day travelled northbound on this route in October 2023 over the 7 days. This represents an average decrease of 166 vehicles per day.

- Compared to October 2022, 4% fewer vehicles a day travelled northbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average decrease of 362 vehicles per day.
- Compared to October 2022, 2% fewer vehicles per day travelled southbound on this route in October 2023 over the 7 days. This represents an average decrease of 159 vehicles per day.
- Compared to October 2022, 4% fewer vehicles a day travelled southbound this route in October 2023 over the 5 days (Monday to Friday). This represents an average decrease of 332 vehicles per day.

Vehicles travelling on Bristol Road, south of Queen Charlton Lane (both ways)

Figure 4: Average number of vehicles travelling on Bristol Road, south of Queen Charlton Lane (both ways) each day during monitoring periods.

Illustrated by the grey arrow in Figure 2.



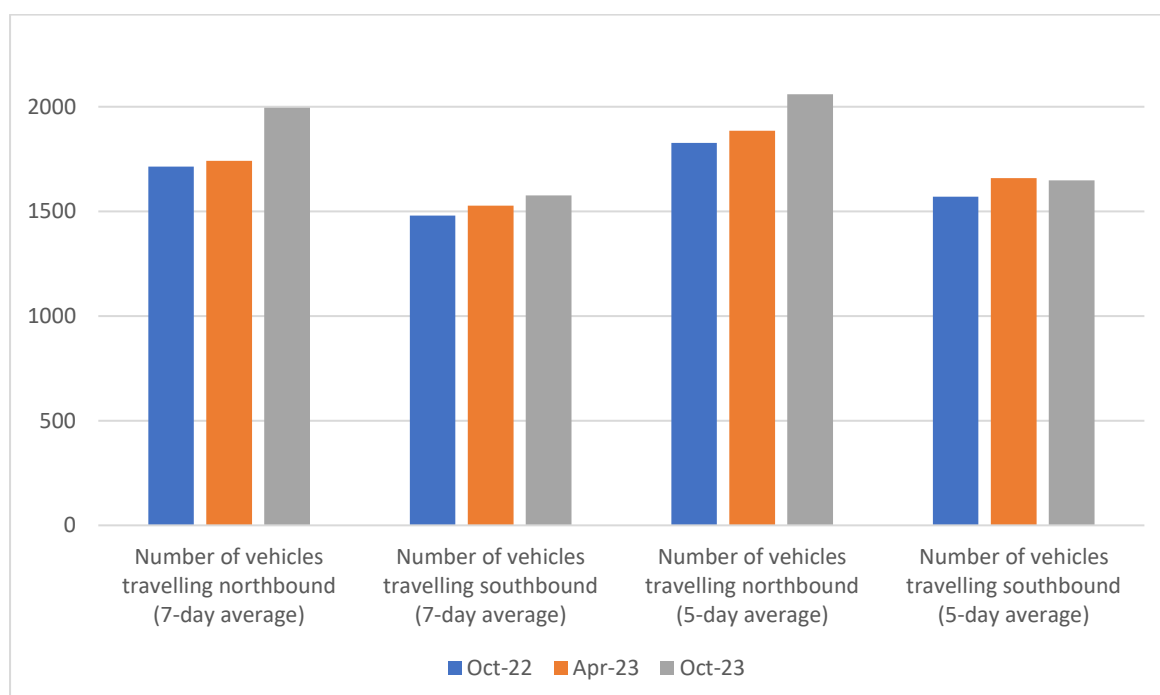
- On average, more vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 3% more vehicles per day travelled northbound on this route in October 2023 over the 7 days. This represents an average increase of 204 vehicles per day.
- Compared to October 2022, 1% more vehicles a day travelled northbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 83 vehicles per day.

- Compared to October 2022, 1% more vehicles per day travelled southbound on this route in October 2023 over the 7 days. This represents an average increase of 57 vehicles per day.
- Compared to October 2022, 0.4% fewer vehicles a day travelled southbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average decrease of 25 vehicles per day.

Vehicles travelling on Sleep Lane (both ways)

Figure 5: Average number of vehicles travelling on Sleep Lane (both ways) each day during monitoring periods.

Illustrated by the black arrow in Figure 2.



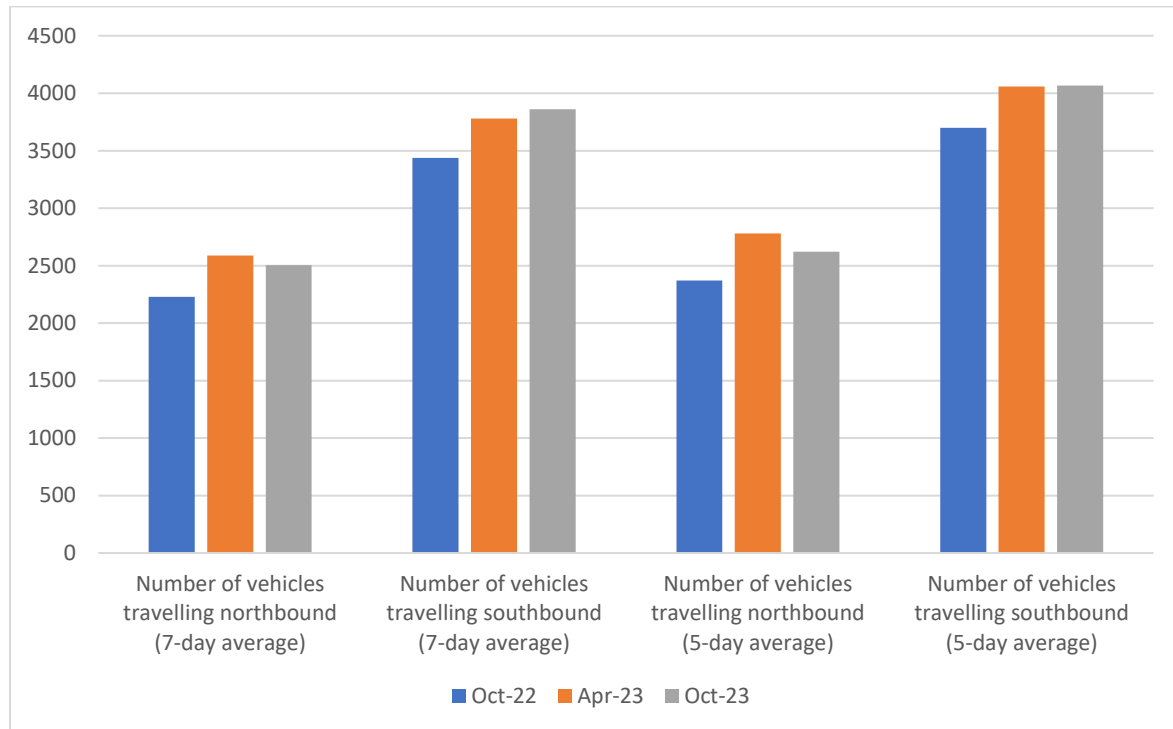
Note: October 2023 data was collected between 31st October and 9th November 2023. See point 4.5 for details.

- On average, more vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 16% more vehicles per day travelled northbound on this route in October 2023 over the 7 days. This represents an average increase of 281 vehicles per day.
- Compared to October 2022, 13% more vehicles a day travelled northbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 232 vehicles per day.
- Compared to October 2022, 6% more vehicles per day travelled southbound on this route in October 2023 over the 7 days. This represents an average increase of 96 vehicles per day.
- Compared to October 2022, 5% more vehicles a day travelled southbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 78 vehicles per day,

Vehicles travelling on Woollard Lane (both ways)

Figure 6: Average number of vehicles travelling on Woollard Lane (both ways) each day during monitoring periods.

Illustrated by the purple arrow in Figure 2.



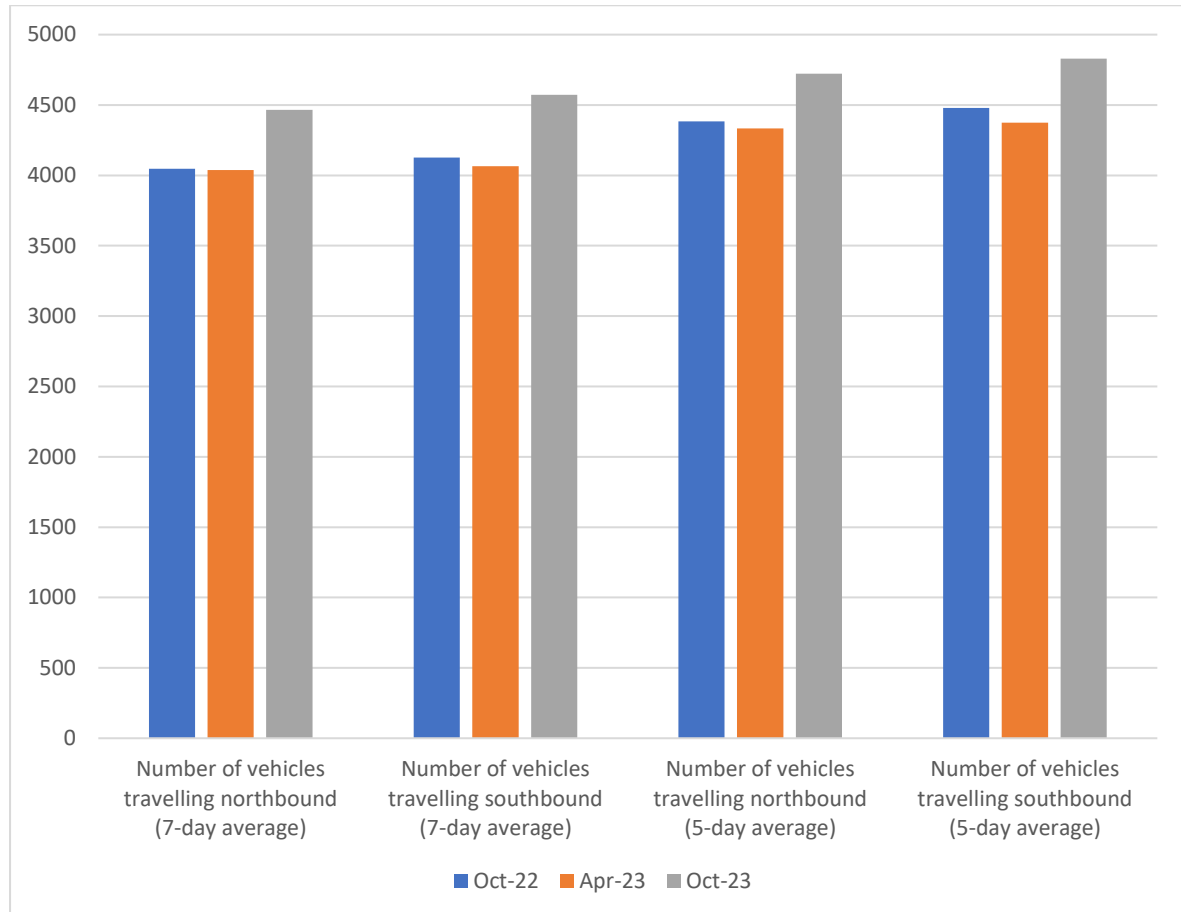
- On average, more vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 12% more vehicles per day travelled northbound on this route in October 2023 over the 7 days. This represents an average increase of 275 vehicles per day.
- Compared to October 2022, 11% more vehicles a day travelled northbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 252 vehicles per day.
- Compared to October 2022, 12% more vehicles per day travelled southbound on this route in October 2023 over the 7 days. This represents an average increase of 425 vehicles per day.
- Compared to October 2022, 10% more vehicles a day travelled southbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 368 vehicles per day.

7.4. Roads to the southeast of Queen Charlton village connecting Keynsham to the A37

Vehicles travelling on the north-eastern end of Charlton Road (both ways)

Figure 7: Average number of vehicles travelling each day on the north-eastern end of Charlton Road (both ways) during monitoring periods.

Illustrated by the dark green arrow in Figure 2.

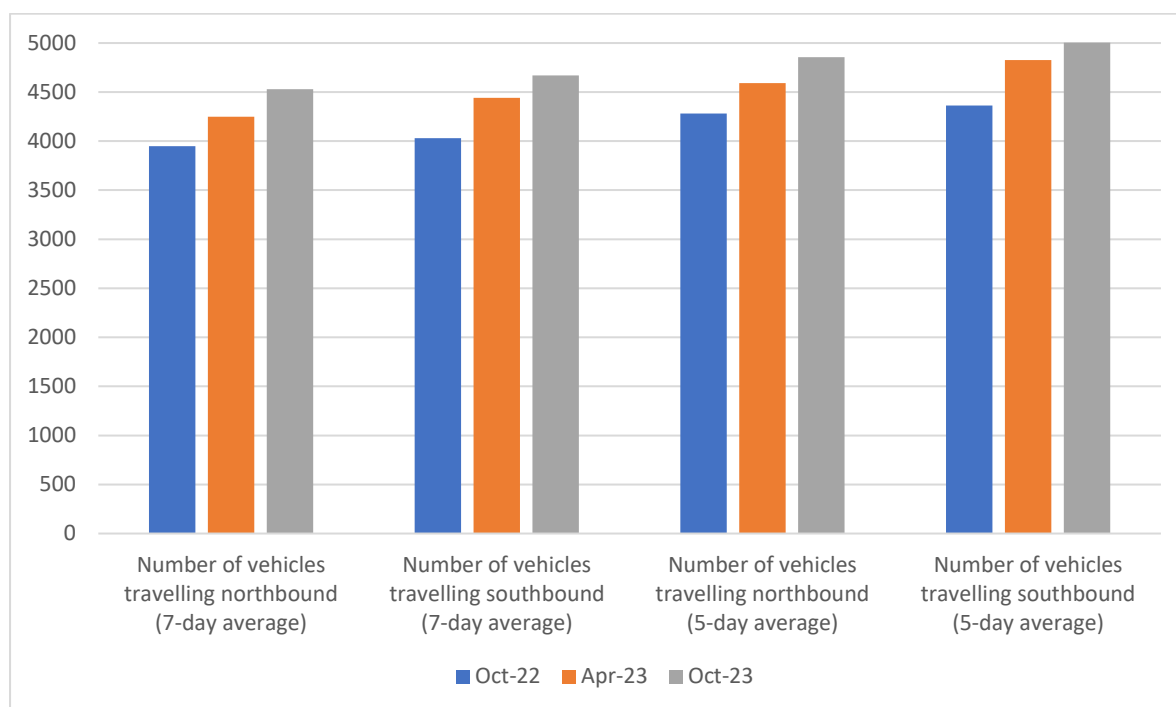


- On average, more vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 10% more vehicles per day travelled northbound on this route in October 2023 over the 7 days. This represents an average increase of 419 vehicles per day.
- Compared to October 2022, 8% more vehicles a day travelled northbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 339 vehicles per day.
- Compared to October 2022, 11% more vehicles per day travelled southbound on this route in October 2023 over the 7 days. This represents an average increase of 446 vehicles per day.
- Compared to October 2022, 8% more vehicles a day travelled southbound this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 350 vehicles per day.

Vehicles travelling on the south-western end of Charlton Road (both ways)

Figure 8: Average number of vehicles travelling on the south-western end of Charlton Road (both ways) each day during monitoring periods.

Illustrated by the red arrow in Figure 2.

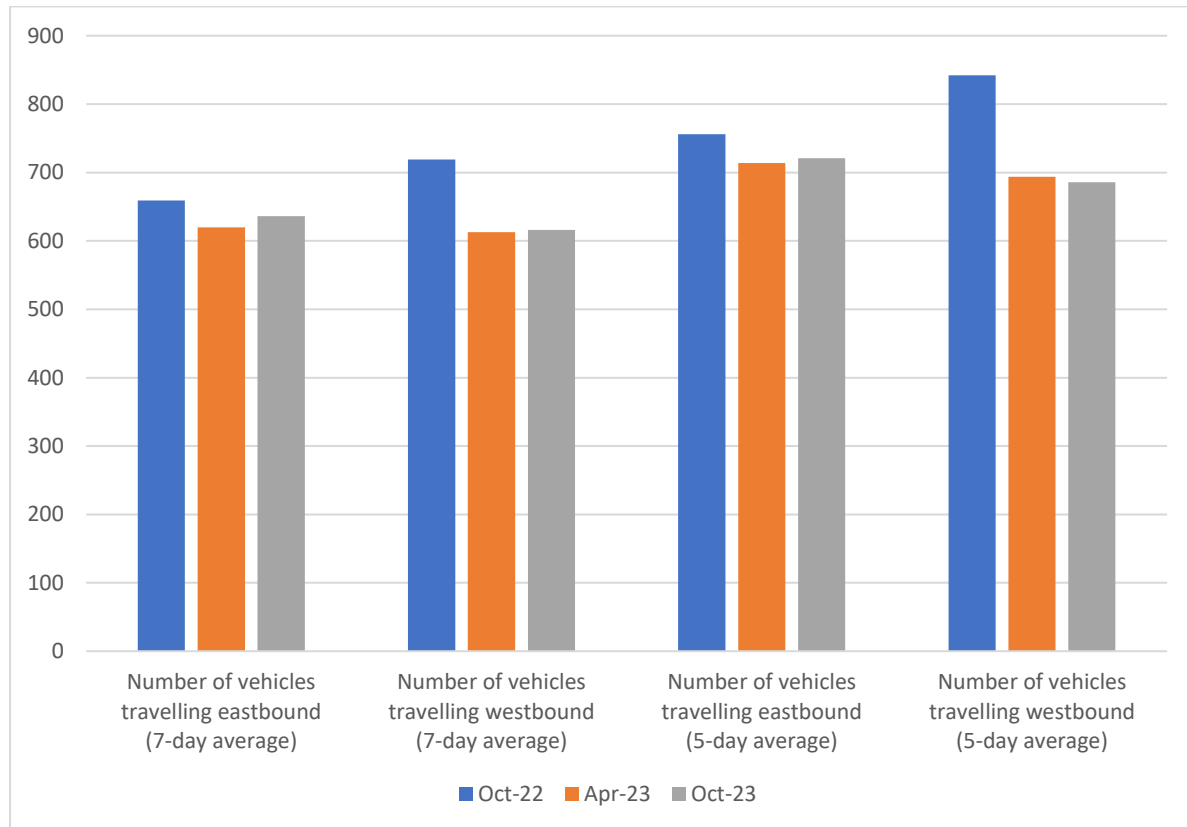


- On average, more vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 15% more vehicles per day travelled northbound on this route in October 2023 over the 7 days. This represents an average increase of 579 vehicles per day.
- Compared to October 2022, 13% more vehicles a day travelled northbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 573 vehicles per day.
- Compared to October 2022, 16% more vehicles per day travelled southbound on this route in October 2023 over the 7 days. This represents an average increase of 640 vehicles per day.
- Compared to October 2022, 15% more vehicles a day travelled southbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 641 vehicles per day.

Vehicles travelling on Redlynch Lane (both ways)

Figure 9: Average number of vehicles travelling on Redlynch Lane (both ways) each day during monitoring periods.

Illustrated by the pink arrow in Figure 2.



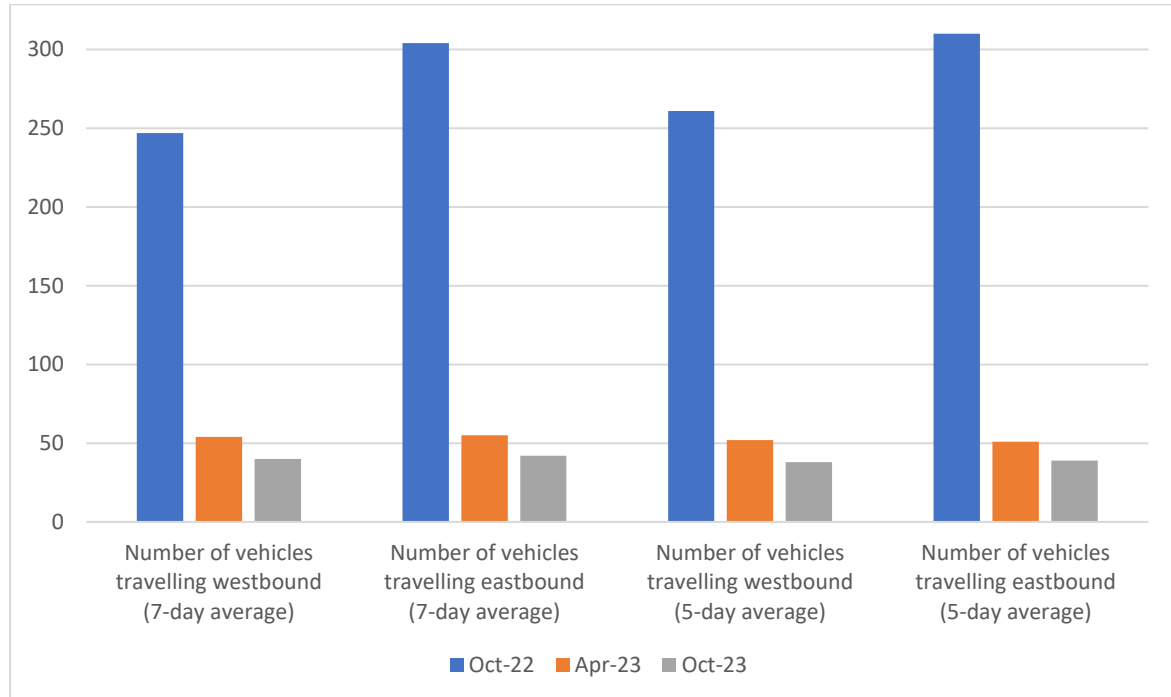
- On average, fewer vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 3% fewer vehicles per day travelled eastbound on this route in October 2023 over the 7 days. This represents an average decrease of 23 vehicles per day.
- Compared to October 2022, 5% fewer vehicles a day travelled eastbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average decrease of 35 vehicles per day.
- Compared to October 2022, 14% fewer vehicles per day travelled westbound on this route in October 2023 over the 7 days. This represents an average decrease of 103 vehicles per day.
- Compared to October 2022, 19% fewer vehicles a day travelled westbound on this route in October 2023 over the 5 days (Monday to Friday). This represents an average decrease of 156 vehicles per day.

7.5. Queen Charlton Lane

Vehicles travelling on Queen Charlton Lane (both ways)

Figure 10: Average number of vehicles travelling on Queen Charlton Lane (both ways) each day during monitoring periods.

Illustrated by the yellow (westbound) and light green (eastbound) arrows in Figure 2.



Important note:

- During baseline monitoring (prior to installation of the through-traffic restriction) the camera was located to the east of Maes Knoll Drive at the western end of the lane. It therefore captured all through traffic travelling westbound from Queen Charlton Village and eastbound from Whitchurch/A37.
- In the post-installation phases, with the through-traffic restriction in place, we positioned the camera in the same location (east of Maes Knoll Drive at the western end of the lane). Because of the restriction at the eastern end, no vehicular through traffic is recorded travelling westwards from Queen Charlton village. We continued to record vehicular traffic travelling in both directions to and the western filter situated just east of the entrance to Furthermead Farm (for access to farmland and private properties).
- The cameras (during all three phases) are recording the number of trips, not individual vehicles. For example, one car travelling along the lane, or up to the filter and back in the same day is counted in the above table as two vehicles.
- The cameras did not record any vehicles travelling into the lane from Whitchurch/A37 turning directly into the housing estate at Maes Knoll.

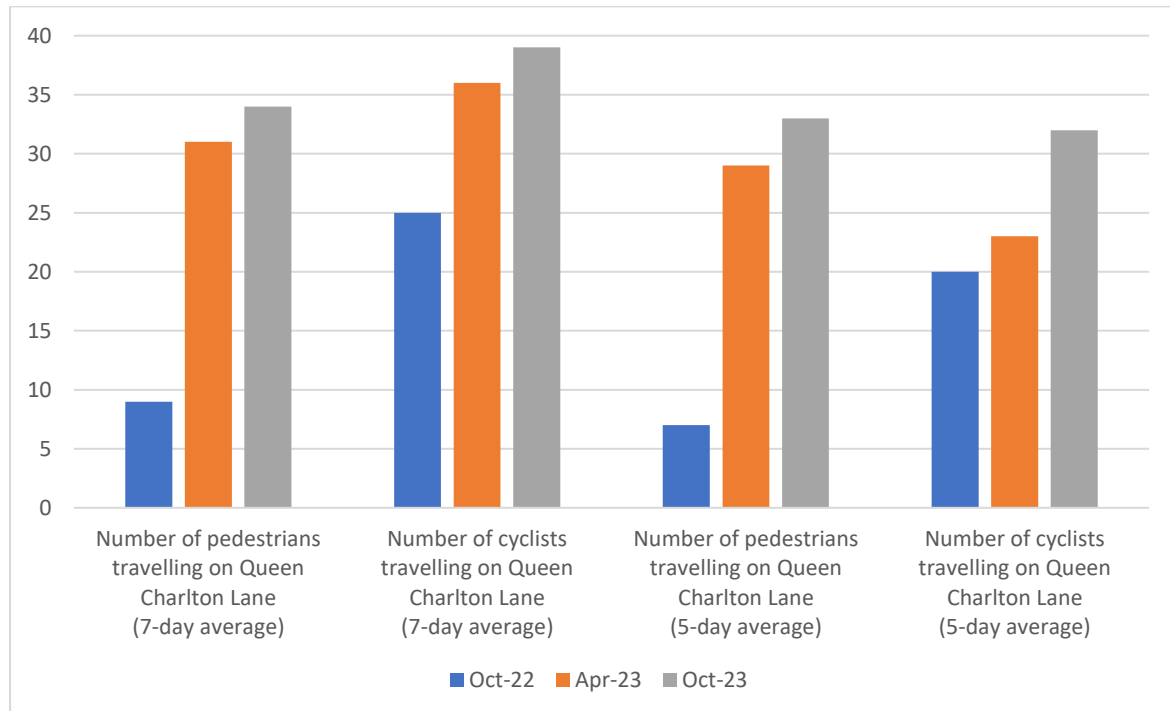
Observations:

- During the 7-day monitoring period in October 2022, 247 vehicles (on average) travelled westbound on Queen Charlton Lane (towards Whitchurch) each day.
- During the 5-day (Monday to Friday) monitoring period in October 2022, 261 vehicles (on average) travelled westbound Queen Charlton Lane (towards Whitchurch) each day.
- During the 7-day monitoring period in October 2022, 304 vehicles (on average) travelled eastbound on Queen Charlton Lane (towards Queen Charlton) each day.
- During the 5-day (Monday to Friday) monitoring period in October 2022, 310 vehicles (on average) travelled eastbound on Queen Charlton Lane (towards Queen Charlton) each day.
- During the 7-day monitoring period in October 2023, with the filters in place, we know that 82 vehicular trips were made to and/or from the western filter (situated just east of Furthermead Farm) on average, each day. This represents an average decrease of 469 (85%) vehicular trips per day.
- During the 5-day (Monday to Friday) monitoring period in October 2023, with the filters in place, we know that 77 vehicular trips were made to and/or from the western filter (situated just east of Furthermead Farm) on average, each day. This represents an average decrease of 494 (86%) vehicular trips per day.
- No vehicular traffic travelling straight through from Queen Charlton Village (in the east) to the A37 (in the west) was recorded in October 2023 (or in April 2023) due to the through-traffic restriction being in place.

Westbound active Travel on Queen Charlton Lane

Figure 11: Average number of pedestrians and cyclists travelling westbound on Queen Charlton Lane each day during monitoring periods.

Illustrated by the yellow arrow in Figure 2.

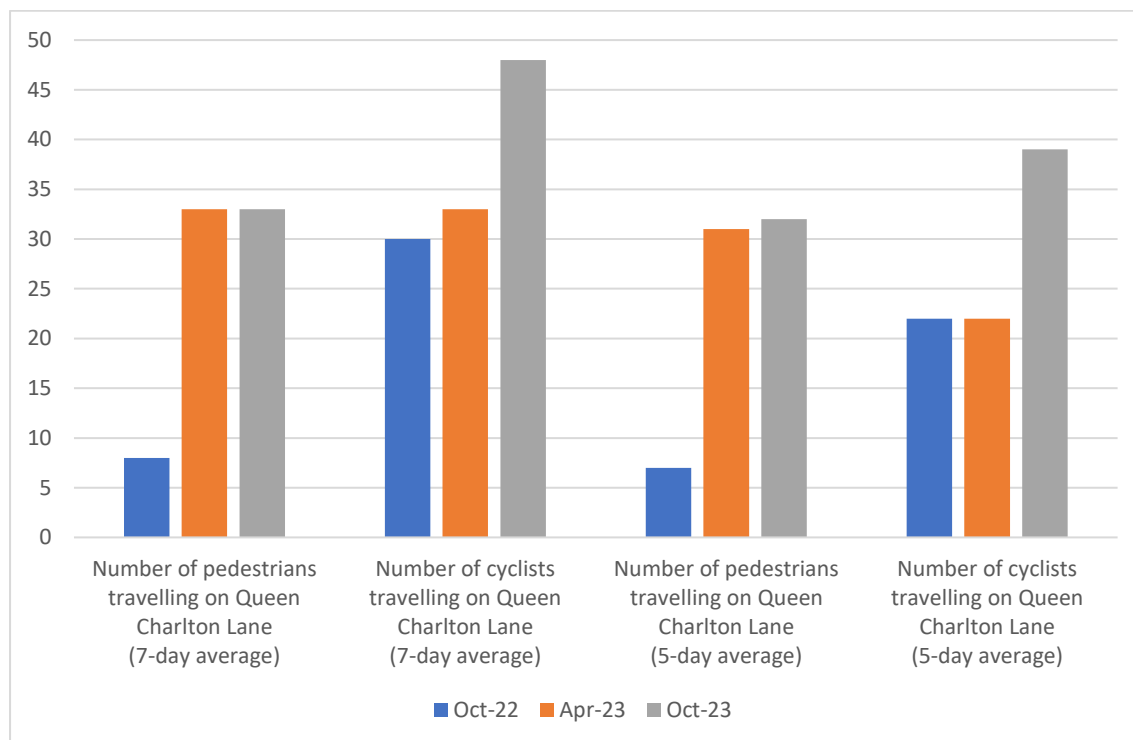


- On average, more pedestrians and cyclists travelled this route during the monitoring period in October 2023 compared to the baseline monitoring period in October 2022.
- Compared to October 2022, 278% more pedestrians per day travelled this route in October 2023 over the 7 days. This represents an average increase of 25 pedestrians per day.
- Compared to October 2022, 371% more pedestrians per day travelled this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 26 pedestrians per day.
- Compared to October 2022, 56% more cyclists per day travelled this route in October 2023 over the 7 days. This represents an average increase of 14 cyclists per day.
- Compared to October 2022, 60% more cyclists travelled this route per day in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 12 cyclists per day.

Eastbound active travel on Queen Charlton Lane

Figure 12: Average number of pedestrians and cyclists travelling eastbound on Queen Charlton Lane each day during monitoring periods.

Illustrated by the light green arrow in Figure 2.



- On average, more pedestrians and cyclists travelled this route during the monitoring period in October 2023 compared to the baseline monitoring period in October 2022.
- Compared to October 2022, 313% more pedestrians per day travelled this route in October 2023 over the 7 days. This represents an average increase of 25 pedestrians per day.
- Compared to October 2022, 357% more pedestrians per day travelled this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 25 pedestrians per day.
- Compared to October 2022, 60% more cyclists per day travelled this route in October 2023 over the 7 days. This represents an average increase of 18 cyclists per day.
- Compared to October 2022, 77% more cyclists travelled this route per day in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 17 cyclists per day.

8. Summary

- 8.1. This report presents a comparison of traffic data collected before and after a through-traffic restriction trial which was installed on Queen Charlton Lane in November 2022. The purpose is to understand how traffic flows changed with the trial in place. The following surveys were undertaken:
- Baseline traffic data was collected for seven consecutive days from 3 October to 9 October 2022 to gain average daily counts over the course of a week before the trial started.
 - Post-installation traffic data was collected for seven consecutive days from 18 to 24 April 2023 (five months after the filter was installed).
 - Additionally, post-installation traffic data was collected for seven consecutive days from 3 to 9 October 2023 (nine months after installation).
- 8.2. Based on the surveys described above, the following observations can be made, with reference to the data which was collected:
- Following the introduction of the through-traffic restriction, the volume of traffic using Queen Charlton Lane reduced significantly which, in turn, encouraged an uptake in active travel.
 - The data tells us that (on average, each day) around 470-500 fewer vehicle movements were recorded on Queen Charlton Lane after the trial was installed (based on data collected in October 2023). This represents a reduction of around 85% (these figures understate the full reduction in traffic along Queen Charlton Lane because, in October 2023, we continued to record vehicle movements made to and from the western filter to access properties and farmland)
 - In terms of the principal alternative routes for traffic, there were increases in traffic volumes when comparing baseline and post-installation data (October 2022 and October 2023). To an extent this increase was expected because the aim of the trial was to encourage commuter traffic to stay on the main roads:
 - On Woollard Lane, northbound traffic increased on average by 250 to 275 vehicle movements each day (11-12%). Southbound traffic increased, on average, by 370 to 425 vehicles each day (10-12%).
 - On the southwest section of Charlton Road, northbound traffic increased, on average, by 575 to 580 vehicles each day (13-15%). Southbound traffic increased by around 640 vehicles each day (16%).
 - We note, however, an increase in traffic volumes on the northeastern section of Charlton Lane (around 690 to 870 vehicles) that should not have been affected by the trials. This makes it difficult for us to establish to exactly what extent the increase in traffic on the principal alternative routes (Woollard Lane and Southwestern section of Charlton Road) was due to

the trial i.e. was there an increase in traffic in the area generally, not related to the trial?

- We recorded an average of 50 more pedestrians walking in both directions each day in the October 2023 monitoring period. This represents an increase of just under 300% compared with baseline data. In both directions (and in the same period), we also recorded an average of between 12-18 more cyclists each day, which is uplift of 60-80%.
- 8.3. In overall summary, the data shows that the through-traffic restriction trial has significantly reduced traffic along Queen Charlton Lane and encouraged an uplift in active travel along this route, including walking and cycling. This has been sustained across two sets of surveys and in both directions.
 - 8.4. While the data shows that traffic on the principal alternative routes to Queen Charlton Lane has increased (i.e., on Woollard Lane and the southwestern section of Charlton Road), this is to be expected as the purpose of trial was to encourage commuter traffic to stay on the main roads.
 - 8.5. While the increase is not insignificant, it is felt that a considerable proportion of that change may be reflecting a general increase in traffic on routes that would otherwise be unaffected by the trial (for example, the north-western section of Charlton Road). It is therefore difficult to draw a definitive conclusion on the impact of the trial itself on these alternative routes.
 - 8.6. On balance, it appears that the volume of displaced traffic is relatively modest, considering the length and the directness of the route that has been closed to through-traffic, and the changes in traffic elsewhere.