



Bath & North East
Somerset Council

Improving People's Lives

Appendix A

Church Street (Widcombe) Through-traffic Restriction Trial 2022-23

Traffic monitoring data report

Prepared: November 2023

Table of Contents

1. Introduction	4
2. Aim of the trial	4
3. Purpose of traffic data monitoring.....	4
4. About the monitoring	5
5. Method	5
Automatic Number Plate Recognition (ANPR) cameras.....	5
Video camera capturing traffic traveling in each direction	6
Video camera capturing vehicles turning into a junction.....	6
Automatic Traffic Count (ATC) tubes	6
6. Data presentation	7
7. Observations	10
7.3. Widcombe roundabout and Widcombe Hill area	10
Vehicles travelling from Prior Park Road turning into Widcombe Hill	10
Vehicles traveling on Widcombe Hill turning into Prior Park Road.....	11
Vehicles travelling on Widcombe Hill (both ways).....	12
7.4. Ralph Allen Drive area	13
Vehicles travelling on Ralph Allen Drive (both ways, south of Church Street)	13
7.5. Church Street	14
Vehicles traveling from Ralph Allen Drive into Church Street (towards Widcombe Hill). 14	
Vehicles traveling from Widcombe Hill turning into Church Street	15
Active Travel on Church Street – from St Thomas’ Church to Widcombe Hill.....	16
Active travel on Church Street from St Thomas’ church towards Ralph Allen Drive.	17
8. Summary	18

Table of Figures

Figure 1: Map showing location of cameras and automatic traffic count tubes on and around Church Street.....	7
Figure 2: Map showing travel movements captured in data collection periods.....	9
Figure 3: Average number of vehicles travelling from Prior Park Road into Widcombe Hill each day during monitoring periods.	10
Figure 4: Average numbers of vehicles travelling from Widcombe Hill into Prior Park Road each day during monitoring periods.	11
Figure 5: Average number of vehicles travelling in each direction on Widcombe Hill each day during monitoring periods.	12
Figure 6: Average number of vehicles travelling in each direction on Ralph Allen Drive (south of Church Street) each day during monitoring periods.....	13
Figure 7: Average number of individual vehicles travelling from Ralph Allen Drive into Church Street towards Widcombe Hill each day during monitoring periods.....	14
Figure 8: Average number of individual vehicles travelling from Widcombe Hill into Church Street towards Ralph Allen Drive each day during the monitoring periods.....	15
Figure 9: Average number of pedestrians and cyclists travelling from St Thomas' Church towards Widcombe Hill each day during the monitoring periods.....	16
Figure 10: Average number of pedestrians and cyclists travelling on Church Street from St Thomas' Church towards Ralph Allen Drive during the monitoring periods.	17

Church Street (Widcombe): 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 Church Street 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 an air quality report, 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 the narrow residential street as an inappropriate short cut (or through route) and provide a safe, healthy environment for residents, pedestrians and cyclists.
- 2.3. The scheme does not restrict vehicle access to homes, businesses or the church, 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 a set of collapsible black bollards.
- 2.4. The through-traffic restriction is just one of several measures proposed for the Church Street 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: <https://beta.bathnes.gov.uk/through-traffic-restriction-etrol-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 Church Street
 - 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. 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 Church Street, with the exception of October 2023, when we did not use Automatic Number Plate Recognition (ANPR) cameras to monitor traffic-traffic on Church Street.

Automatic Number Plate Recognition (ANPR) cameras

- 5.2. During baseline monitoring in October 2022 and post-installation monitoring in April 2023, we placed ANPR cameras on Church Street (near Widcombe Hill and Ralph Allen Drive/Prior Park Road) from 06:00 to 22:00 hrs to collect the numbers of vehicles using the route as a through route (not stopping).
- 5.3. The cameras recorded vehicle registration numbers so that we could count the unique vehicles using the road. If the vehicle appeared on both cameras within a short amount of time, we could infer that it was using Church Street as a through route and not stopping for a specific reason.
- 5.4. The positions of the ANPR cameras are marked on the map in Figure 1 below (C and D). One camera was positioned on Church Street close to the junction with Widcombe Hill and the second was positioned on Church Street close to the junction with Prior Park Road.
- 5.5. Please note that we did not use ANPR cameras on Church Street during the October 2023 monitoring period because the restriction prevented any motor vehicles from passing through.

Video camera capturing traffic traveling in each direction

- 5.6. Video cameras established the class of all passing traffic and the total numbers travelling 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
- 5.7. The position of the camera is marked on the map in Figure 1 below (A). This camera was positioned near the modal filter and St Thomas' Church.

Video camera capturing vehicles turning into a junction

- 5.8. Video cameras established the class and number of all passing traffic turning into the road - from a junction - at 15-minute intervals between 06:00 to 22:00 hrs each day Classes recorded:
- Pedestrian/wheelchair/mobility scooter
 - Pedal cycle
 - Car
 - Light goods vehicles
 - Heavy goods vehicle
 - Public passenger vehicle (up to 16 seats)
 - Other
- 5.9. The position of the video is marked on the map in Figure 1 below (B). The camera was positioned at the junction of Widcombe Hill and Prior Park Road with Sussex Place.

Automatic Traffic Count (ATC) tubes

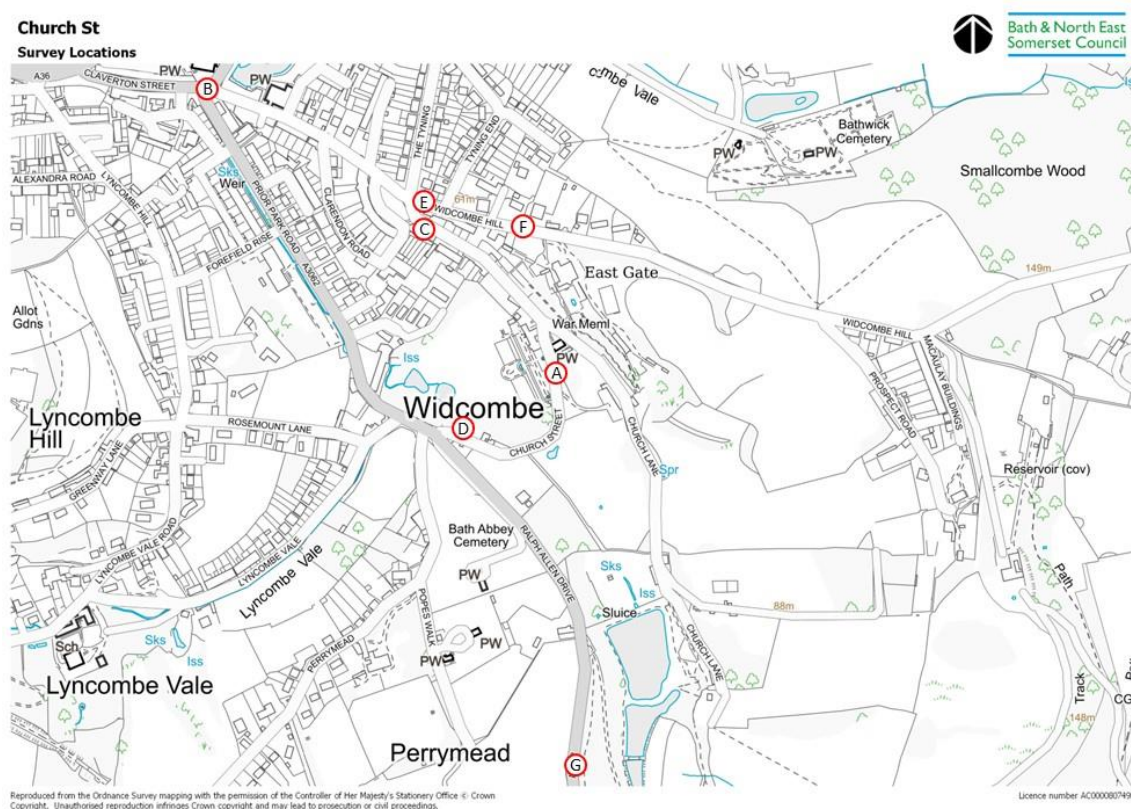
- 5.10. Established traffic counts in both directions over 24 hours for the 7 consecutive days of monitoring, including vehicle classification and speed data in 15-minute intervals. The position of the tubes are marked on the map in Figure 1 below (E, F & G). Tubes were positioned on Widcombe Hill near the junction with Church Street, on Widcombe Hill near a property named Hillside and on Ralph Allen Drive near a property names Middle Hill Lodge.
- 5.11. Please note that the ATC tube at E was moved east of Tynning End in April 2023 from its original position just west of Tynning End during the baseline

monitoring in October 2022 (F). This was due to complaints over the noise of vehicles driving over the tube. Data was collected in October 2022, April and October 2023.

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). This is except for the Church Street ANPR data, where notes focus on comparing baseline data with post-installation data collected during April 2023. This is because ANPR cameras were not used in October 2023.

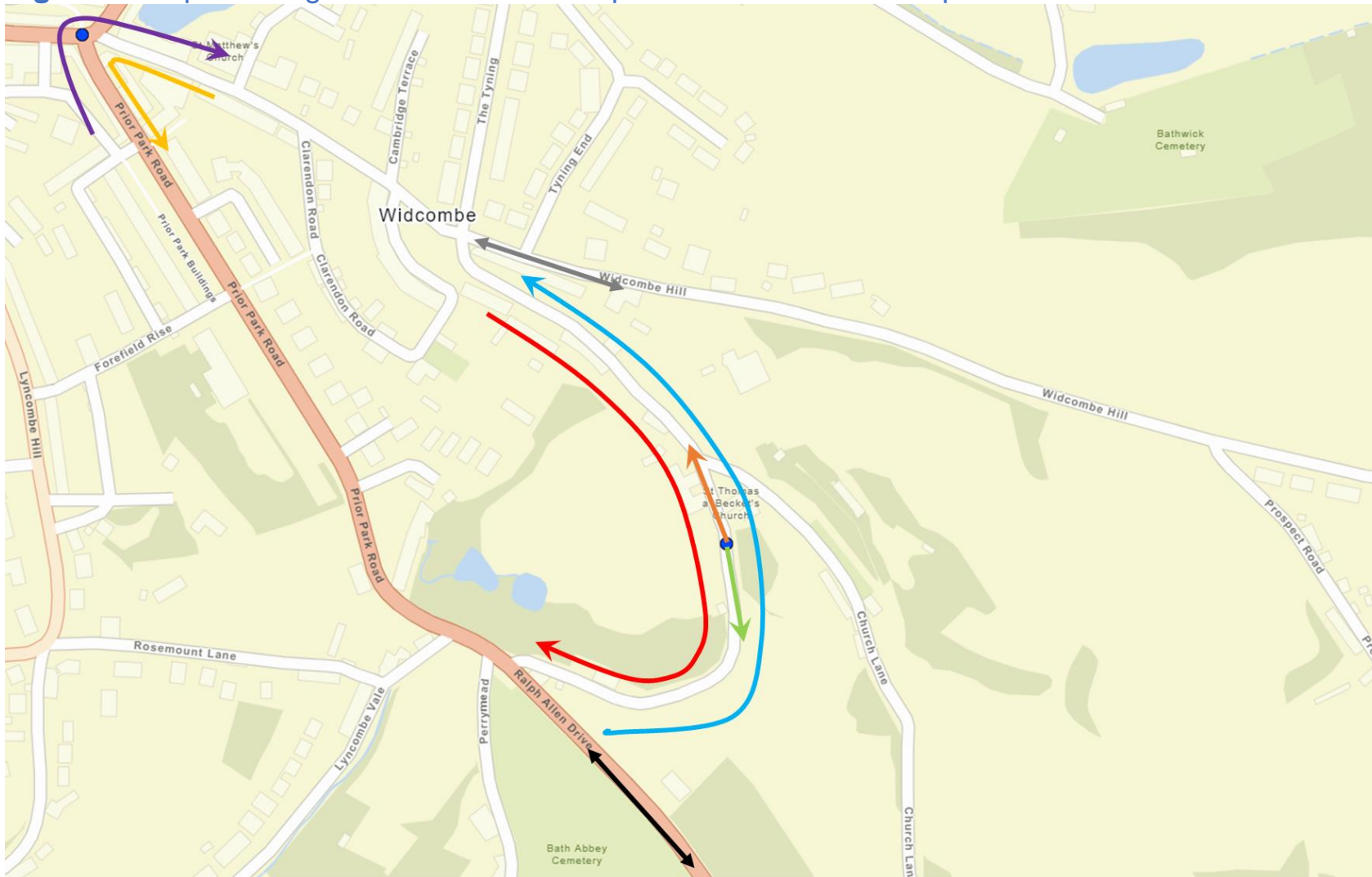
Figure 1: Map showing location of cameras and automatic traffic count tubes on and around Church Street



Note: ANPR cameras C and D were not used during the third phase of monitoring in October 2023. All other survey methods and locations at A, B, E and F operated

during baseline monitoring in October 2022 and post-installation monitoring in April 2023 and October 2023.

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

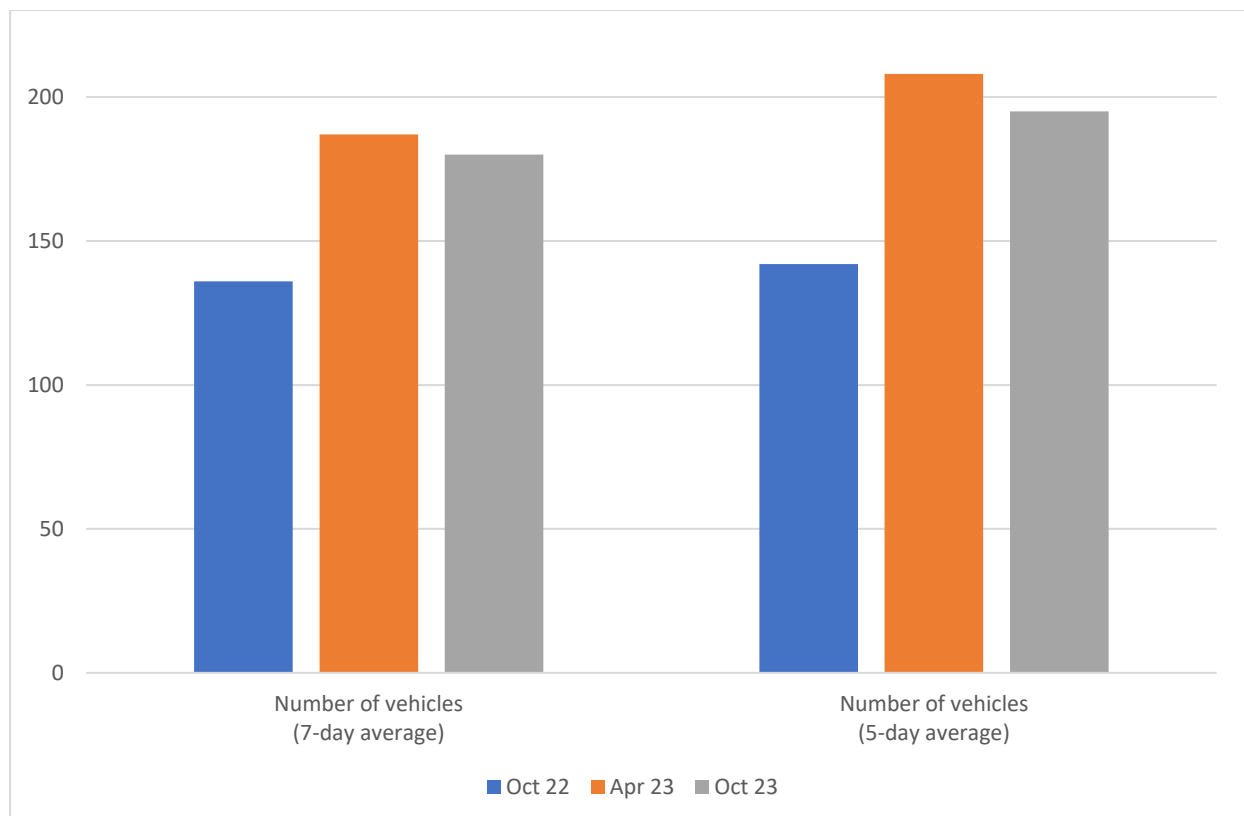
- 7.1. Using the methods outlined above, we have presented the monitoring data in graphs for the purpose of comparison. This is followed by key observations.
- 7.2. The baseline monitoring was performed from 3-9 October 2022. Post-installation monitoring was performed from 18-24 April 2023 and again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

7.3. Widcombe roundabout and Widcombe Hill area

Vehicles travelling from Prior Park Road turning into Widcombe Hill

Figure 3: Average number of vehicles travelling from Prior Park Road into Widcombe Hill each day during monitoring periods.

Illustrated by the purple arrow on Figure 2.



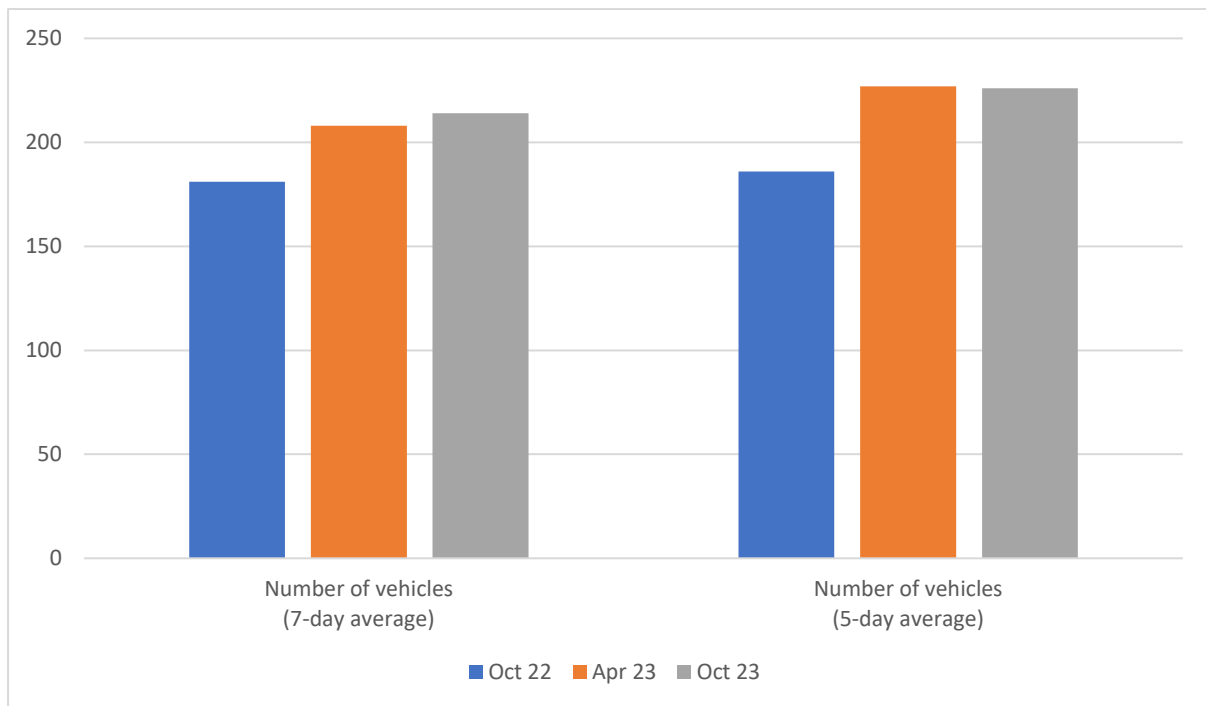
- On average, more vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 32% more vehicles per day travelled this route in October 2023 over the 7 days. This represents an average increase of 44 vehicles per day.

- Compared to October 2022, 37% more vehicles a day travelled this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 53 vehicles per day.

Vehicles traveling on Widcombe Hill turning into Prior Park Road

Figure 4: Average numbers of vehicles travelling from Widcombe Hill into Prior Park Road each day during monitoring periods.

Illustrated by the yellow arrow in Figure 2.

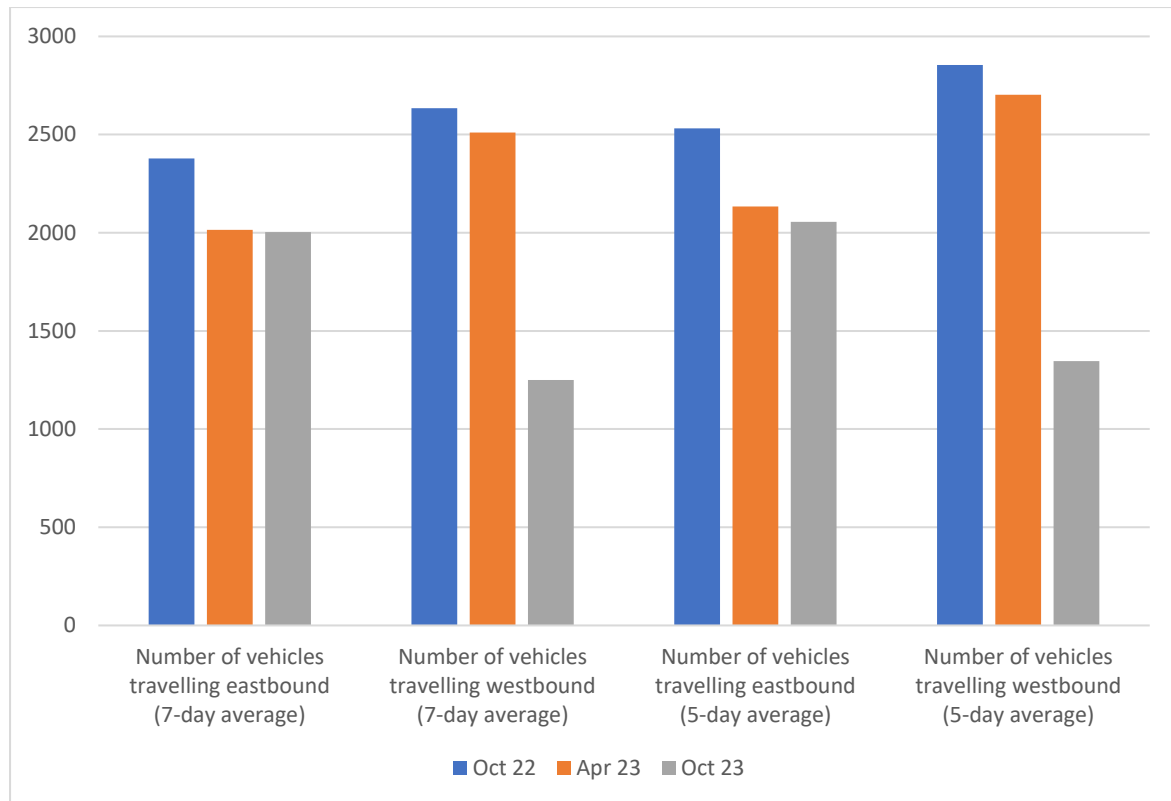


- On average, more vehicles travelled this route in the October 2023 monitoring period than in the October 2022 monitoring period.
- Compared to October 2022, 18% more vehicles per day travelled this route in October 2023 over the 7 days. This represents an average increase of 33 vehicles per day.
- Compared to October 2022, 22% more vehicles per day travelled this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 40 vehicles per day.

Vehicles travelling on Widcombe Hill (both ways)

Figure 5: Average number of vehicles travelling in each direction on Widcombe Hill each day during monitoring periods.

Illustrated by the grey arrow in Figure 2.



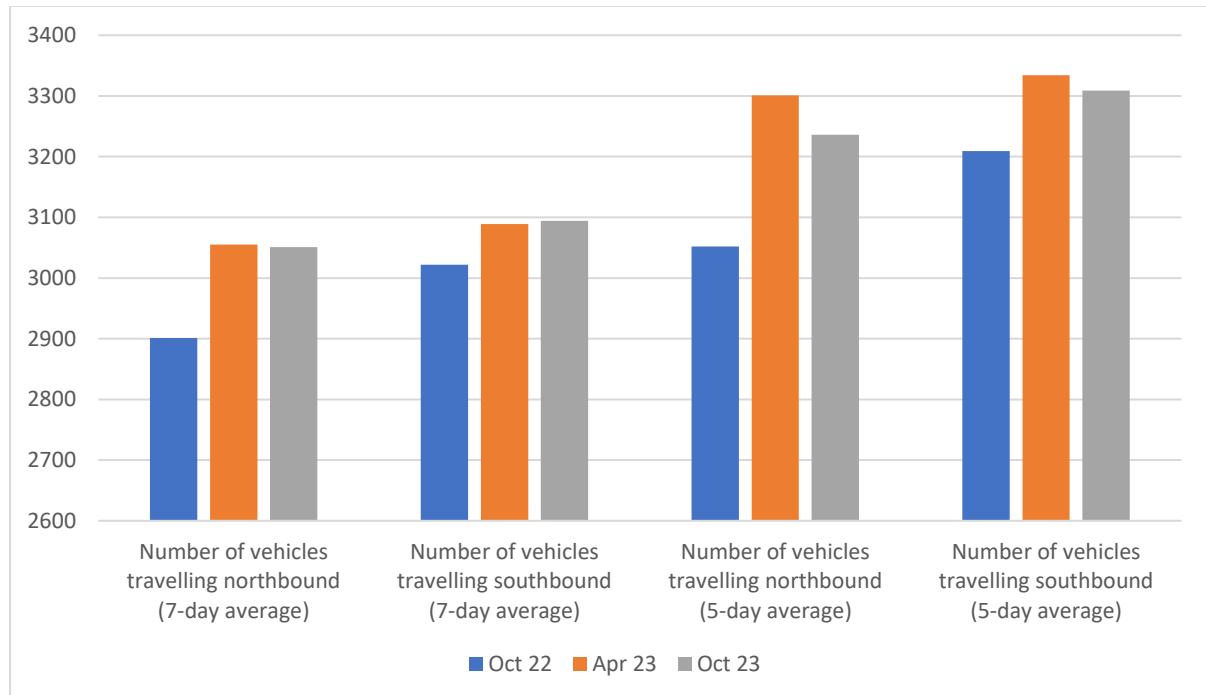
- On average, fewer vehicles travelled this route in the October 2023 monitoring period compared to the October 2022 monitoring period.
- Compared to October 2022, 35% fewer vehicles per day travelled this route in October 2023 over the 7 days. This represents an average decrease of 1760 vehicles per day.
- Compared to October 2022, 37% fewer vehicles travelled this route in October 2023 over the 5 days (Monday to Friday). This represents an average decrease of 1983 vehicles per day.
- Data captured in October 2022 was captured from ATC tubes placed just east of Tynning End. Data captured in April and October 2023 was captured from ATC tubes placed just west of Tynning End due to noise complaints arising from vehicles driving over the ATC tubes.

7.4. Ralph Allen Drive area

Vehicles travelling on Ralph Allen Drive (both ways, south of Church Street)

Figure 6: Average number of vehicles travelling in each direction on Ralph Allen Drive (south of Church Street) each day during monitoring periods.

Illustrated by the black arrow in Figure 2.



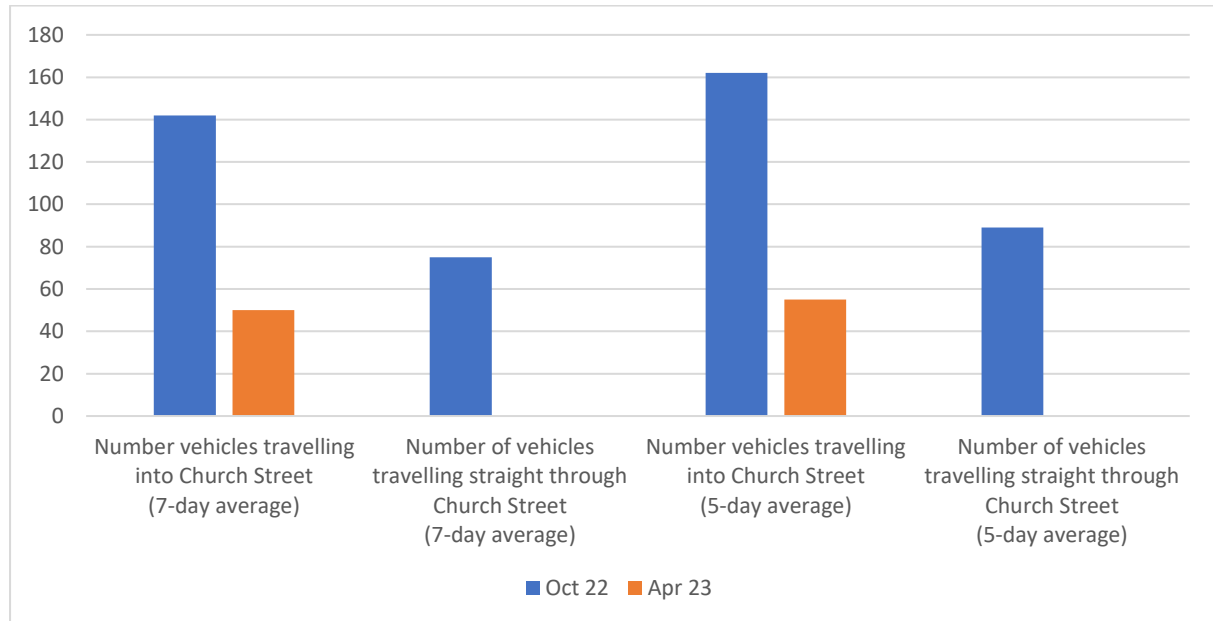
- On average, more vehicles travelled this route during the monitoring period in October 2023 compared to the baseline monitoring period in October 2022.
- Compared to October 2022, 4% more vehicles per day travelled this route in October 2023 over the 7 days. This represents an average increase of 222 vehicles per day (both ways).
- Compared to October 2022, 5% more vehicles per day travelled this route in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 284 vehicles per day (both ways).

7.5. Church Street

Vehicles traveling from Ralph Allen Drive into Church Street (towards Widcombe Hill)

Figure 7: Average number of individual vehicles travelling from Ralph Allen Drive into Church Street towards Widcombe Hill each day during monitoring periods

Illustrated by the blue arrow in Figure 2.



Note: The graph above compares baseline data from October 2022 with post-installation data in April 2023. No ANPR cameras were used to monitor traffic on Church Street during the third monitoring phase (October 2023).

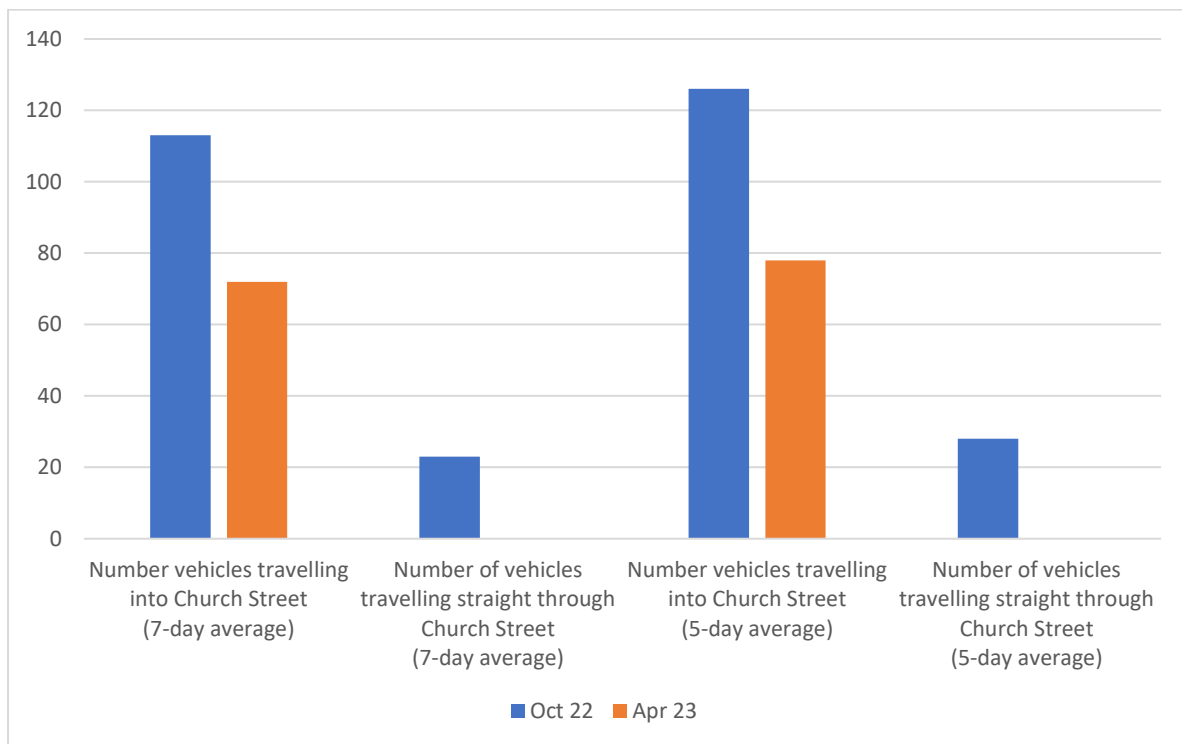
- During the 7-day monitoring period in October 2022, 173 vehicles (on average) travelled into Church Street from Prior Park Road each day. We captured 142 registration plates on cameras. Of these 142 vehicles, 75 (53%) travelled straight through within 10 minutes.
- During the 5-day (Mon-Fri) monitoring period in October 2022, 195 vehicles (on average) travelled into Church Street from Prior Park Road each day. We captured 162 vehicle registration plates on camera. Of these 162 vehicles, 89 (55%) travelled straight through within 10 minutes.
- There was a 100% decrease in vehicles travelling straight through in April 2023 (over the 7 and 5-day monitoring period) following the introduction of the through-traffic restriction near the Church.
- During the 7-day monitoring period in April 2023 we know 50 vehicles travelled into Church Street from Ralph Allen Drive to visit homes or the church (up to the filter). This is a decrease of 92 vehicles (-65%) compared with the 142 that turned into Church Street from Ralph Allen Drive during the October 2022 7-day monitoring period (prior to the trial).

- During the 5-day monitoring period in April 2023 we know that 55 vehicles travelled into Church Street from Ralph Allen Drive to visit homes or the church (up to the filter). This is a decrease of 107 vehicles (-66%) compared with the 162 that turned into Church Street from Ralph Allen Drive during the October 2022 5-day monitoring period in 2022 (prior to the trial).

Vehicles traveling from Widcombe Hill turning into Church Street

Figure 8: Average number of individual vehicles travelling from Widcombe Hill into Church Street towards Ralph Allen Drive each day during the monitoring periods.

Illustrated by the red arrow in Figure 2.



Note: The graph above compares baseline data from October 2022 with post-installation data in April 2023. No ANPR cameras were used to monitor traffic on Church Street during the third monitoring phase (October 2023) because.

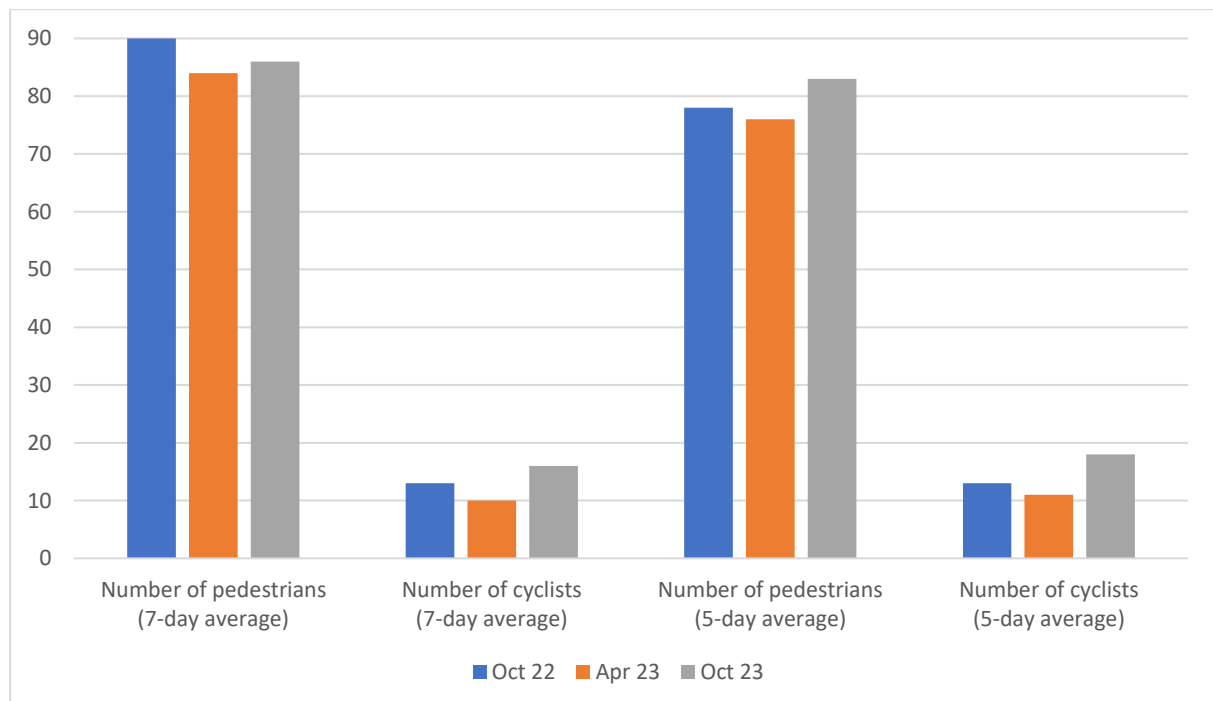
- During the 7-day monitoring period in October, 129 vehicles (on average) travelled into Church Street from Widcombe Hill each day. We captured 113 vehicle registration plates on camera. Out of these 113 vehicles, 23 (20%) travelled straight through within 10 minutes.
- During the 5-day (Monday to Friday) monitoring period in October, 143 vehicles (on average) travelled into Church Street from Widcombe Hill each day. We captured 126 of these vehicle registration plates on cameras. Out of these 126 vehicles 28 (22%) travelled straight through within 10 minutes.

- There was a 100% decrease in vehicles travelling straight through in April (over the 7- and 5-day monitoring period) following the introduction of the through-traffic restriction near the Church.
- During the 7-day monitoring period in April we know that 72 vehicles travelled into Church Street from Widcombe Hill to visit homes or the church (up to the filter). This is a decrease of 41 vehicles (-36%) compared with the 113 that turned into Church Street from Widcombe Hill during the October 7-day monitoring period (before the trial).
- During the 5-day monitoring period in April we know that 78 vehicles travelled into Church Street from Widcombe Hill to visit homes or the church (up to the filter). This is a decrease of 48 vehicles (-38%) compared with the 126 that turned into Church Street from Widcombe Hill during the October 5-day monitoring period (before the trial).

Active Travel on Church Street – from St Thomas’ Church to Widcombe Hill

Figure 9: Average number of pedestrians and cyclists travelling from St Thomas’ Church towards Widcombe Hill each day during the monitoring periods

Illustrated by the orange arrow in Figure 2.



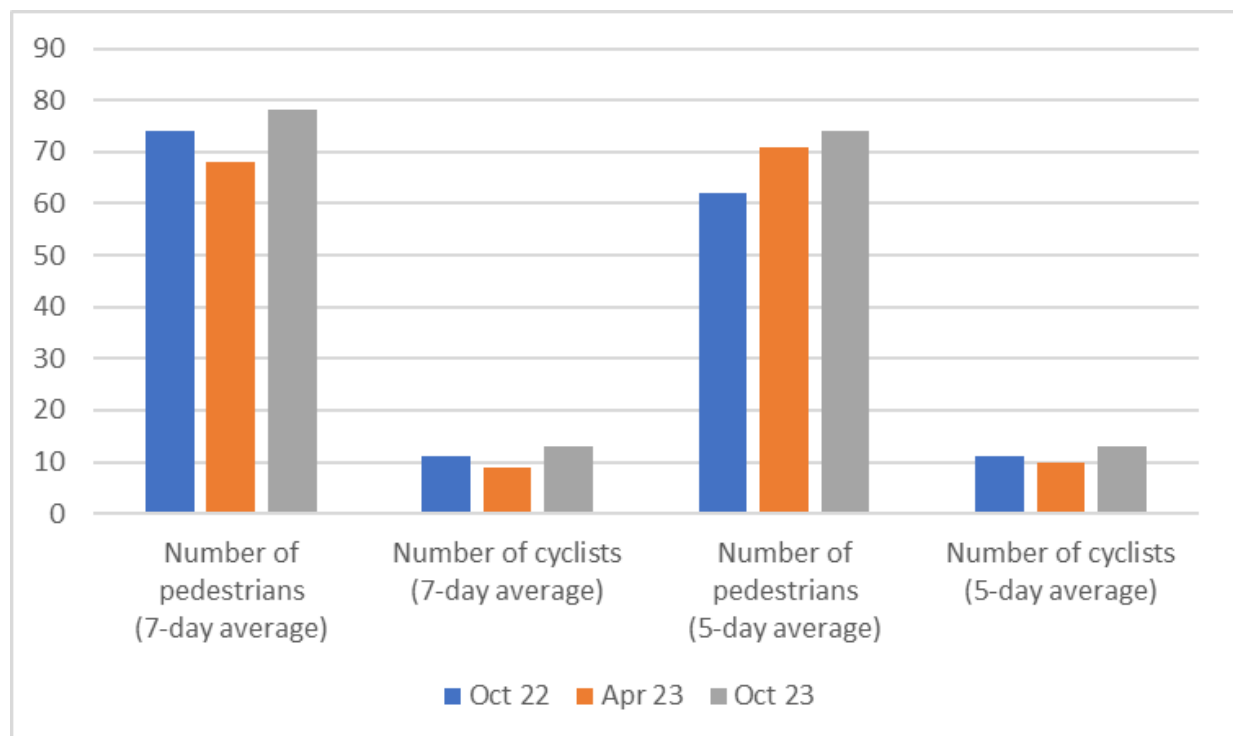
- Cameras to monitor pedestrian and cycle traffic were placed by St Thomas’ Church (the position of the through-traffic restriction)
- On average, more pedestrians and cyclists travelled this route during the monitoring period in October 2023 compared to the baseline monitoring period in October 2022.

- Compared to October 2022, 4% fewer pedestrians per day travelled this route in October 2023 over the 7 days. This represents an average decrease of 4 pedestrians per day.
- Compared to October 2022, 6% more pedestrians per day travelled this route in October 2023 over the 5 days (Mon to Fri). This represents an average increase of 5 pedestrians per day.
- Compared to October 2022, 23% more cyclists per day travelled this route in October 2023 over the 7 days. This represents an average increase of 3 cyclists per day.
- Compared to October 2022, 38% more cyclists travelled this route per day in October 2023 over the 5 days (Monday to Friday). This represents an average increase of 5 cyclists per day.

Active travel on Church Street from St Thomas’ church towards Ralph Allen Drive.

Figure 10: Average number of pedestrians and cyclists travelling on Church Street from St Thomas’ Church towards Ralph Allen Drive during the monitoring periods.

Illustrated by the green arrow in Figure 2.



- Cameras to monitor pedestrian and cycle traffic were placed by St Thomas’ Church (the position of the through-traffic restriction).
- 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, 5% more pedestrians per day travelled this route in October 2023 over the 7 days. This represents an average increase of 4 pedestrians.
- Compared to October 2022, 19% more pedestrians per day travelled this route in October 2023 over the 5 days (Monday to Friday) This represents an average increase of 12 pedestrians per day.
- Compared to October 2022, 18% more cyclists per day travelled this route in October 2023 over the 7 days. This represents an average increase of 2 cyclists per day.
- Compared to October 2022, 18% more cyclists per day travelled this route in October 2023 over the 5 days (Monday to Friday) This represents an average increase of 2 cyclist 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 Church Street 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 based on the data which was collected:
- Based on ANPR surveys in 2022 just over half the vehicles entering Church Street from Ralph Allen Drive were found to be using this route as a through route. One fifth of the vehicles entering Church Street from Widcombe Hill were using this route as a through route.
 - The survey data shows that following the implementation of the through-traffic restriction, there has been reduction to zero of through-traffic on Church Street. In addition to the reduction in through traffic the data shows a decrease in local traffic accessing properties on Church Street after the introduction of the through-traffic restriction.
 - Following the implementation of the scheme there was an increase in the volume of traffic on the roundabout at Prior Park Road with Widcombe Hill (White Hart Roundabout). The increase was around 44 to 53 vehicles travelling from Prior Park Road into Widcombe Hill, and around 33 to 40 vehicles travelling from Widcombe Hill into Prior Park Road. Given that the total volume of vehicle movements per day between 06:00 hrs and 22:00 hrs in this location is in the region of 10,000 this is considered a very limited increase.

- The change in walking and cycling volumes is more mixed, with the April 2023 surveys initially showing a general decrease in walking and cycling on Church Street, followed by the October 2023 surveys showing an increase in walking and cycling when compared with the pre-trial period. The October 2023 surveys show that there has been an increase of around 8 to 17 pedestrians and around 5 to 7 cyclists using Church Street, when compared with the pre-trial period.
- 8.3. In overall summary, the survey data shows that the introduction of the through-traffic restriction has reduced through-traffic on Church Street, and that while there has been a slight increase in the volume of traffic on the principal alternative route – at the junction of Prior Park Road and Widcombe Hill – this increase is very limited in the context of the total volume of traffic at this location. Walking and cycling has generally increased on Church Street although total volumes remain fairly low, and there is some variance between the two sets of post-implementation surveys.